MEDICATION SAFETY POLICY

HOSPITAL SULTANAH AMINAH

JOHOR BAHRU

2024

Medication Safety Policy
Hospital Sultanah Aminah Johor Bahru

Summary :	This policy is created in order to ensure safe medication practices at various points of care and to eliminate medication errors that may cause harm to patient.
Target Audience :	All healthcare professionals in Hospital Sultanah Aminah Johor Bahru
Date issued :	18 April 2024
Next Review Date :	March 2025 or earlier if required
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1. Introduction

Medication error is defined by National Coordination Council for Medication Error Reporting and Prevention (NCCMERP) as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient, or consumer. Such events may be related to professional practice, health care products, procedures, and systems, including prescribing, order communication, product labeling, packaging, and nomenclature, compounding, dispensing, distribution, administration, education, monitoring, and use. It can be occur at any stage of the complex medication use process (prescription, transcription, dispensing and administration) [1].

Medication safety is one of the vital components in patient safety. Unfortunately medication errors do occur and often go undetected. Some medication errors may result in serious patient morbidity and mortality. Error detection through an active management and effective reporting system discloses medication error and encourage safe practice [2].

2. Aims of Policy

The aims of this policy is to establish a better medication safety management throughout the organization by:

1. Providing standardization of implementation medication safety in work processes related to prescribing, dispensing and administration of medicines in order to minimize the potential for medication/human errors.
2. Providing guideline for medication error reporting incidents (Medication Error Reporting, Incident Error Reporting, Root Cause Analysis Reporting)
3. Educate health care professionals regarding causes of medication errors and strategies to prevent medication errors.
4. Increase awareness of the important of medication safety by providing education and tranining to health care profressionals.

3. Terms of Reference (TOR) Medication Safety Committee HSAJB

Function

The Working Committee is responsible for:

- Ensuring and evaluating that all medication safety programs are held in accordance with ministry and department-level directives that adhere to the current guidelines and procedures.
- Fostering awareness and knowledge of healthcare personnel regarding aspects of medication safety and facilitating the reporting of medication errors.
- Monitoring the incidence and reporting of medication errors that occur or are detected at the hospital level.

Scope

The duties of the Committee include:

- Formulating an action plan aimed at improving aspects of medication safety in the hospital that adheres to strategies devised by the Ministry of Health and National Patient Safety Council.
- Organizing promotional activities and providing awareness training to staff regarding aspects of medication safety.
- Identifying systemic issues and shortcomings involving medications that may contribute to medication errors.
- Making recommendations towards improving current medication management systems that are feasible for implementation.
- Overseeing activities related to medication safety that are carried out at the hospital.

Membership

A meeting of the Committee will be held at least 2 times per year. The Working Committee will consist of:

1. Chairperson: Hospital Director
2. Alternate chairperson: Vice Hospital Director / Head Pharmacist
3. Secretary: Pharmacist with grade UF44 and above
4. Members: Multidisciplinary
   Healthcare professionals from various fields such as medicine, dentistry, pharmacy and nursing.

Each post must be held for a minimum of 2 years.

4. Categorization

Medication error should be categorized according to the level of harm experienced by the patient. The phase of the medication use process in which the error originated, and the type of error as indicated by the criteria listed below:

4.1 Classification of Medication Error Severity

No Error	
Category A	Potential error, circumstances/events that have the potential to cause incident. Example: Illegible handwriting, use of abbreviation, incorrect storage of medication/ mix up drugs.
Error, No Harm	
Category B	An error occurred but the error did not reach the patient (an 'error of omission' dose reach the patient). Example: Error detected before dispensing to the patient.
Category C	An error occurred that reached the patient but did not cause patient harm. • Medication reaches the patient and is administered. • Medication reaches the patient but not administered. Example: a) Pharmacist dispensed incorrect medication to ward. Nurse administers the incorrect medication to patient. b) Pharmacist dispensed incorrect medication to the patient. The patient realized that the medicine is incorrect and return it back to the pharmacy.
Category D	An error occurred that reached the patient and required monitoring to confirm that it resulted in no harm to the patient and/or required intervention to preclude harm. Example: Other patient's profile was accidentally placed inside the patient's file which has led to wrong medications prescribed during previous visit. MO was informed. Close glucose monitoring was planned for this patient. The blood glucose level was reported as mild elevation only.
Error, Harm	
Category E	An error occurred that may have contributed to or resulted in temporary harm to the patient and required intervention.

Category F	An error occurred that may have contributed to or resulted in temporary harm to the patient and required initial or prolonged hospitalization.
Category G	An error occurred that may have contributed to or resulted in permanent patient harm.
Category H	An error occurred that required intervention necessary to sustain life.
Error, Death	
Category I	An error occurred that may have contributed to or resulted in the patient's death.

4.2 Types of Medication Error

Type		Definition
a	Prescribing error	Incorrect drug product selection (based on indications, contraindications, known allergies, existing drug therapy, and other factors), dose, dosage form, quantity, route of administration, concentration, rate of administration, or instructions for use of a drug product ordered or authorized by physician (or other legitimate prescriber); illegible prescriptions or medication orders that lead to errors.
b	Omission error	The failure to administer an ordered dose to a patient before the next scheduled dose or failure to prescribe a drug product that is indicated for the patient. The failure to administer an ordered dose excludes patient's refusal and clinical decision or other valid reason not to administer.
c	Wrong time error	Administration of medication outside a predefined time interval from its scheduled administration time (this interval should be established by each individual healthcare facility).
d	Unauthorized drug error	Dispensing or administration to the patient of medication not authorized by a legitimate prescriber.
e	Dose error	Dispensing or administration to the patient of a dose that is greater than or less than the amount ordered by the prescriber or administration of multiple doses to the patient, i.e. one or more dosage units in addition to those that were ordered.
f	Dosage form error	Dispensing or administration to the patient of a drug product in a different dosage form than that ordered by the prescriber.
g	Drug preparation error	Drug product incorrectly formulated or manipulated before dispensing or administration.
h	Route of administration error	Wrong route of administration of the correct drug.
i	Administration technique error	Inappropriate procedure or improper technique in the administration of a drug other than wrong route.
j	Deteriorated drug error	Dispensing or administration of a drug that has expired or for which the physical or chemical dosage-form integrity has been compromised.

k	Monitoring error	Failure to review a prescribed regimen for appropriateness and detection of problems, or failure to use appropriate clinical or laboratory data for adequate assessment of patient response to prescribed therapy.
l	Compliance error	Inappropriate patient behavior regarding adherence to a prescribed medication regimen.
m	Other medication error	Any medication error that does not fall into one of the above predefined types.

5. Work Processes

5.1 Prescribing

1. Written prescriptions should be in accordance with practice and evaluation clinical as well as patient conditions.
2. Medication prescriptions written by medical officers must be neat, clear and legible as well as complete with the information required i.e., patient name, identity card number or number patient register, ward and date.
3. The prescription should clearly have the name, route of administration, dosage, duration, and frequency of the drugs.
4. All drugs listed in the category of specialist drugs are required get a lead signature from the current specialist to start the medication or if there is a change in dose and frequency. A lead signature is also required for medications approved by Medicine & Therapeutic Committee (JKUT) MOH facility.
5. The practice of asking questions and reviewing the history of adverse effects medication or patient medication allergies should be implied to avoid any unprecedented reactions.
6. Do not write drug doses with ‘trailing zero’. (For example, 5.0 mg can misread as 50 mg).
7. Be careful when prescribing injection medications by making sure important information such as dose, frequency, injection location (route) and the infusion rate is written correctly and completely. (Example, IV Dopamine 5 mcg/kg over 1 minute).
8. If it is necessary to order the medicine orally (verbal order), make sure communication is done in two ways clearly and brightly.

5.2 Data Entry

1. Interpret prescription carefully to identify any ambiguity or safety concerns and do not hesitate to contact prescriber for any illegible or ambiguous order.
2. Make sure to enter the correct order into the correct patient profile.
3. Please pay attention to any warnings or alerts on allergy, drug interactions, and contraindications when entering order into computer system.
4. Make sure drug label contains the correct patient’s name, drug, strength, dosage, frequency and instruction to take the medication.
5. Counter-check drug assembled with the prescription and not the drug label.

5.3 Dispensing

1. Make a ‘triangle check’ on the medicine and the label with the original prescription before the drug is dispensed to the ward or patients.
2. Always read the medication labels carefully as well as the physical of the medication (condition is good and before expiry) before the drug is dispensed.
3. Adopting the 5R concept during the dispensing process i.e., ensuring the right patient, the right medication, the right dose, the right route of administration and the right timing.
4. Practice asking the adverse effects of medications or drug allergies to the patient.
5. Inform the patient of any changes in medication (medication reconciliation) such as change of drug, dose or the packaging of the medications.
6. Always remind the patient to adhere to the treatment and complete the course of treatment especially with antibiotics.
7. Inform the patient clearly of the medication's instructions as well as providing medication-related counseling.

5.4 Administration

1. Always practice reading medication labels carefully while doing ‘triangle check’ on the medicine, medication labels and prescriptions or the patient’s original medication chart.
2. Using at least 2 ‘identifiers’ to do counter-check before drug administration to the patient.
3. Adopting the concept of 7R during the drug administration process to patient i.e., ensure the right patient, the right medication, the right dose, the right route of administration, the right timing, the right documentation as well as the rights of the patient.
4. Always be sensitive to warning labels affixed to medications such as ‘High Alert Medication’ warning label.
5. Cross-checking the dose calculation, injection location and infusion rate injection with another individual prior to drug administration to the patient.
6. Refer *Guideline on Syringe Labelling in Critical Care Areas* to provide an easy-use classification, identification and differentiation system for proper syringe labelling.
7. Any medicine prepared in another container or transferred from the original container shall be labeled with the patient information completely.
8. Document in the medication chart the time that the drug is administered.

5.5 Monitoring

1. Document in the medication chart the time that the drug is administered.
2. Closely monitor vital signs, laboratory data, patient's response before and after administration of medication.
3. Identifying and reporting adverse drug events if necessary.
4. Re-evaluating drug selection, regimen, frequency and duration if patient does not response as desired.

6. Medication Error Reporting Program

1. The primary objective of medication error reporting is to obtain information and maintain a database on the occurrence of all medication errors related to medication use in prescribing, dispensing, administration, monitoring and other process involved in medication management system. The reports which submitted through MERS (Medication Error Reporting System) will be analysed to establish risk reduction strategies and promote safe medication use.
2. Medication Error reported may also need to be reported under Incident Reporting Program especially in errors that reach the patients.
3. Any errors encountered can be reported by all healthcare providers (example : doctors, pharmacists, dentists, nurses, pharmacist assisstants, medical assisstants etc.) using the standard Medication Error Reporting Form and Incident Reporting Form.
4. Medication Error report must be submitted online by pharmacist who in charge of Drug Information Services to Medication Safety Centre, Pharmaceutical Services Division via http://mers.pharmacy.gov.my.
5. In Malaysian Patient Safety Goals 2.0, medication safety is under Goal no 3: KPI 5. The target is zero cases of medication error leading to severe harm or death (Category F to I).

(Refer Appendix A for Medication Error Reporting flowchart and Appendix B for Medication Error Report Form)

7. Incident Reporting

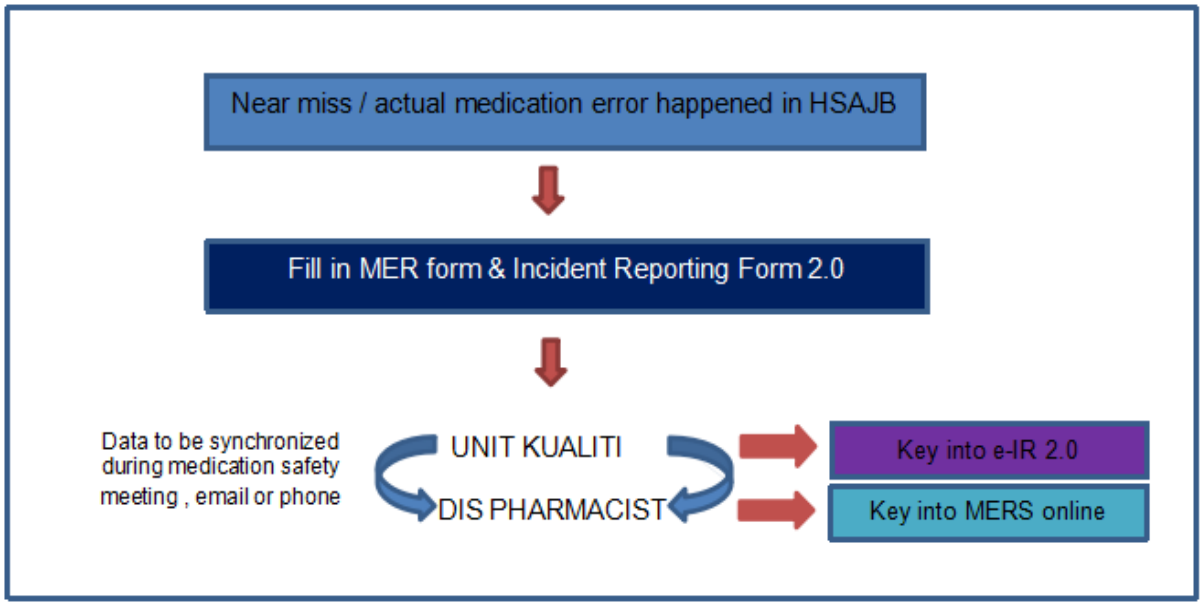
1. Incident Reporting established specifically for staff to report patient safety incident. Specific team/committee is also established to investigate the incident and take risk reduction strategies to prevent similar incident from happening.
2. Patient safety incident reporting and learning system need to be implemented in all healthcare facilities.
3. Investigate patient safety incidents by using tools such as the Root Cause Analysis and Action (RCA2) especially when the incident lead to severe harm or death of patient.
4. In Malaysian Patient Safety Goals 2.0, implementation of patient safety incident report and learning system is under Goal no 7: KPI 9.

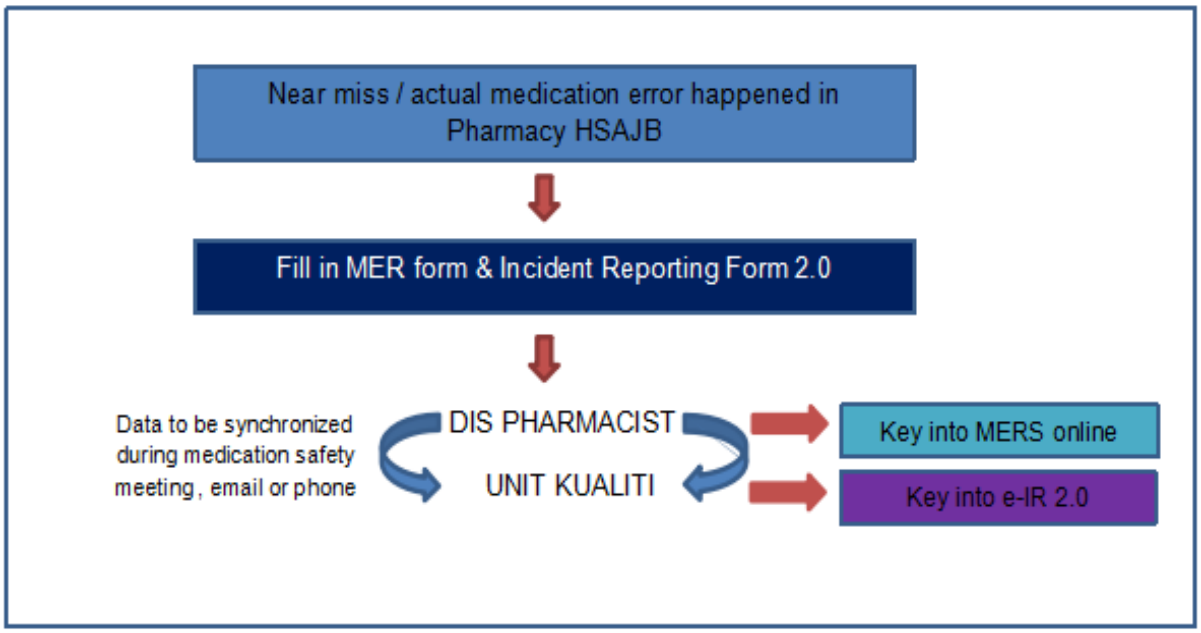
(Refer Appendix C for Patient Safety Incident Reporting Form IR 2.0)

7.1 Steps to Sync/Tally Medication Error Data between Pharmacy Department & Unit Kualiti, HSAJB

In order to ensure medication errors that happened in HSAJB are captured properly, the pharmacy department needs to tally all MER data with MER data from Unit Kualiti. The MER data can be synchronized during medication safety meetings or through email and phone.

Below is a summary chart on the synchronization of MER data between the Pharmacy Department and Unit Kualiti, HSAJB.





7.2 Root Cause Analysis

1. A structured investigation that aims to identify the “root cause” of the problem and actions necessary to eliminate it.
2. It is a risk management TOOL to understand WHY the problem occurs.
3. It is suggested that root cause analysis to be done for all actual error which reached patient.
4. RCA must be conducted by appointed investigation team.

(Refer appendix D for Root Cause Analysis Investigation Flow Chart)

8. Look Alike Sound Alike (LASA) Medications

Definition

Look Alike Sound Alike (LASA) medications involve medications that are visually similar in physical appearance or packaging and names of medications that have spelling similarities and/or similar phonetics.

Management of Look Alike Sound Alike medication

1. Use Tall Man lettering to emphasize differences in medications with sound-alike names. Tall Man lettering involves the use of upper case letters in a part of a medication name to differentiate sound-alike, look-alike medications from one another to avoid medication errors.
2. Ensure that LASA medications are placed separately from their LASA pair and avoid placing them in close proximity to one another.
3. Use additional LASA warning labels in storage bins, medication trolleys or emergency trolleys.
4. Read medication labels carefully at all dispensing stages and double check during dispensing and supplying stages to avoid medication errors.

Examples of Tall Man Lettering and Look Alike Sound Alike Medications in Hospital Sultanah Aminah, Johor Bahru

9. High Alert Medications (HAMs)

Definition

High Alert Medications (HAMs) are medications that bear a heightened risk of causing significant patient harm when these medications are used in error.

Management of High Alert Medications

1. Construct a list of high alert medications to be distributed to all departments in the facility.
2. Ensure that all storage shelves, containers, product packages or loose vials/ampoules containing high alert medications are labelled accordingly.
3. Use either high alert medications sticker, label or HAM envelope.

Strategies to Avoid Errors Involving High Alert Medications

Storage	
1.	Use cautionary label/label enhancement on packages and storage bins of identified high alert medication. Example: High Alert Medications should have **HIGH ALERT MEDICATION** labels on storage shelves, containers, product packages or loose vials/ampoules. Ensure the **HIGH ALERT MEDICATION** label did not cover the information written on the product's label.
2.	All high alert medications should be kept in individual labelled containers. Avoid look-alike and sound-alike medications or different strengths of the same medication from being stored side by side.
3.	Use TALL-man lettering to emphasize differences in medication names. Example: DOPamine and DOBUTamine.
4.	Limit the ward's floor stock medications to the standard requirement. Reduce the quantity and variation of strength/preparation stocked.
5.	All personnel must read the **HIGH ALERT MEDICATION** labels carefully before storing to ensure medications are kept at the correct place.
Prescribing	
1.	Use standardized forms for written orders of cytotoxic medications and parenteral nutrition.

2.	Do not use abbreviation and acronym.
3.	Specify clearly the dose, route and rate of infusion for high alert medication prescribed.
4.	Prescribe oral liquid medications with the dose specified in milligrams.
5.	Use leading zero (e.g. 0.5mg instead of .5mg).
6.	Do not use trailing zero (e.g. 5.0 mg can be mistaken as 50 mg).
7.	Use generic names instead of the medication's brand name.
8.	Always take note of body weight and body surface area for specific medications (e.g. chemotherapy and paediatric patients).
9.	• Verbal communication of medication order on high alert medication are NOT RECOMMENDED except in emergency or urgent situations only. • When verbal order must be taken, the personnel receiving the order must verbally repeat the order back to the prescriber for verification. • Verbal orders should be immediately documented in the patient's medical record, reviewed, and countersigned by the prescriber in accordance with organizational policy.
Preparation	
1.	Establish a counterchecking system for all preparations involving High Alert Medications.
2.	The calculations involving: • Cytotoxic drugs and parenteral nutrition shall be independently counter checked by another pharmacist. • Extemporaneous preparations shall be independently counter checked by another pharmacist/trained personnel.
3.	All diluted medications MUST BE LABELED with the name and strength IMMEDIATELY upon dilution.
Dispensing	
1.	All high alert medication containers, product packages or loose vials/ampoules issued to wards/units must be labelled as **HIGH ALERT MEDICATION**. Note: HAM labelling on pre-pack tablet/capsule for "unit of dose" supply in the medication trolley is not mandatory. However, initiatives must be taken by facilities to increase awareness amongst healthcare professionals on the importance of counter checking when handling HAMs.
2.	High alert medications to be dispensed to patients need not be labeled as high alert.
3.	High alert medications must be counterchecked before dispensing.
4.	High alert medications shall be checked upon receiving by the healthcare professionals.

Administration	
1.	The following particulars shall be independently counterchecked against the prescription or medication chart at the bedside by two appropriate persons before administration: • Patient's identification - patient's name and RN • Name, dose and strength of medications • Route and rate (pump setting and line placements when necessary) • Expiry date • Line attachments
2.	Label the distal ends of all access lines to distinguish IV from epidural lines.
3.	Ensure no distraction during the administration of medications to patients by implementing special measures (Example: wearing special vest).
4.	Return all unused or remaining specially formulated preparations to the pharmacy when no longer required.
5.	Ensure administration of intrathecal, cytotoxic medications, epidural analgesics and parenteral nutrition is done by trained personnel.
Monitoring	
1.	Closely monitor and document vital signs, laboratory data, patient's response before and after administration of high alert medications.
2.	Keep antidotes and resuscitation equipment in wards/emergency room/units.
Training Of Healthcare Professional	
1.	All healthcare personnel shall be trained in safe handling of high alert medications and emphasize on the importance of counterchecking to prevent potential errors and enable them to respond promptly when mistakes do occur.

Example of HIGH ALERT MEDICATION Label

Examples of High Alert Medications Label in Hospital Sultanah Aminah, Johor Bahru

10. Adverse Drug Reaction and Drug Allergy Card

Adverse drug reaction is a response to a drug (medication) that is noxious and unintended and that occurs at doses used in humans for prophylaxis, diagnosis or therapy of diseases, or for the modification of physiological function.

Any adverse drug event encountered shall be reported using the standard Adverse Drug Reaction Form (Appendix E). If necessary, issue Allergy Card (refer Appendix F & G). All forms must be submitted to Drug Information Service (DIS).

Importance of drug allergy card (DAC):

1. Assist health personnel to identify adverse drug reaction experienced by patient.
2. Prevent patient from taking drug (medication) which can cause allergy.
3. Record of the information of patient issued with DAC should be kept and updated from time to time.

11. Training and Awareness

All staff will be trained on medication safety and appropriate documentation to prevent potential errors. Relevant education and activities will be carried out to increase the awareness and to enable the staff to respond promptly when mistakes do occur. For example, exhibition, poster, video, seminar, workshop and course.

12. Evaluation of Action

1. Evaluation of medication safety practice is conducted via the implementation of self-audit.
2. Self-audit is conducted by using the Hospital Medication Safety Self-Assessment Form (Amendment 2-2020) (Appendix H).
3. Monitoring of medication errors and adverse drug reaction should be done and analyzed regularly by designated person.
4. For all medication error, any remedial measures/risk reduction strategies and any immediate effective corrective action has been acted on must be reported and verified by Chief Pharmacist Officer/Hospital Director.
5. The reports will be presented during the Hospital Drug and Therapeutic Committee meetings three times a year.

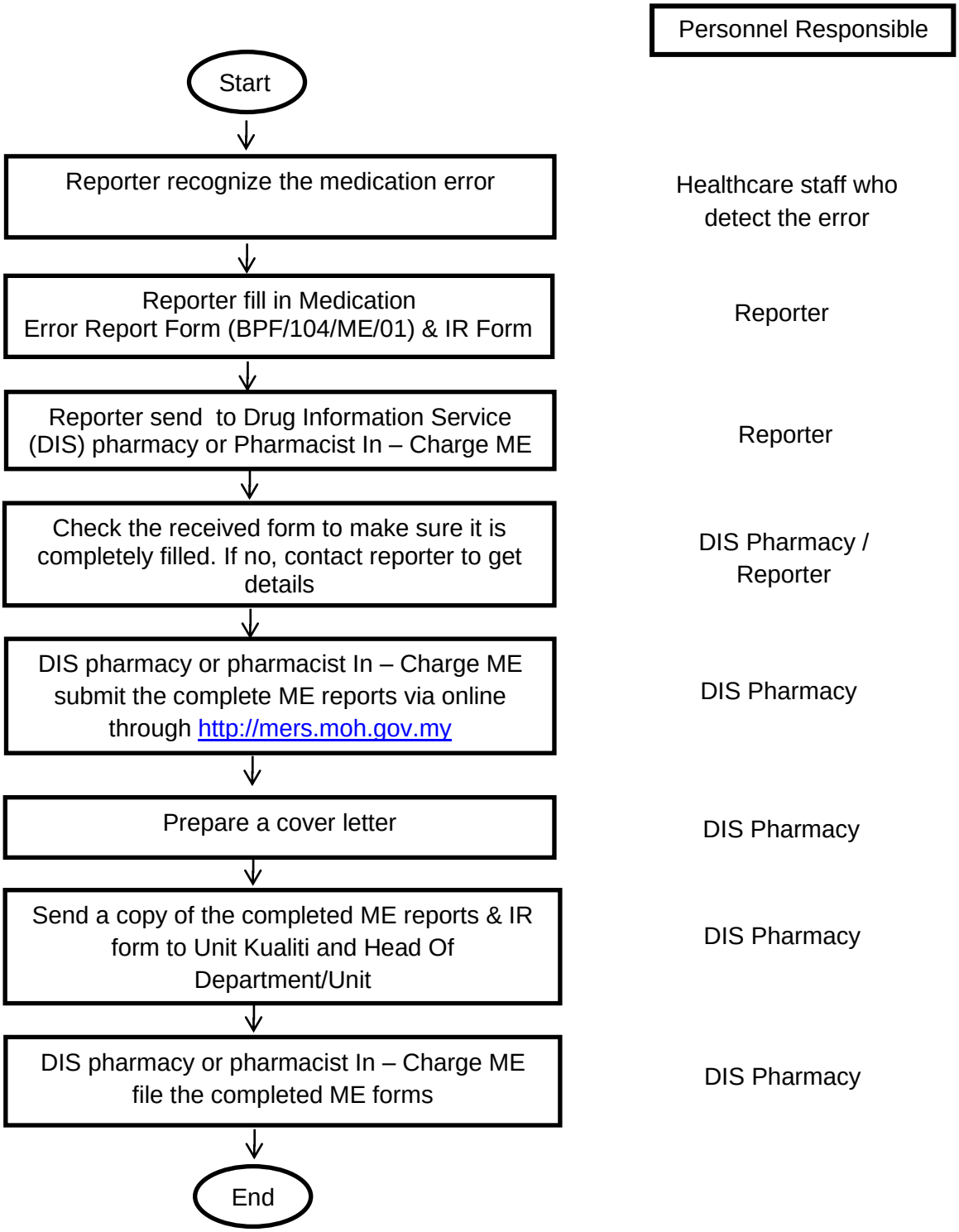
References

1. National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP), 2022
2. Guideline On Medication Error Reporting System (MERS), Second Edition, Pharmaceutical Services Programme MOH, 2019
3. Guideline On Medication Error Reporting First Edition, July 2009
4. Guideline on Implementation - Incident Reporting & Learning System 2.0 for Ministry of Health Hospital, First Edition, 2017
5. Malaysian Patient Safety Goals 2.0: Guidelines on Implementation and Surveillance, Patient Safety Council of Malaysia and MOH, 2021
6. Guideline On Safe Use of High Alert Medications 2nd Edition, Pharmaceutical Services Programme MOH, 2020
7. Guide On Handling Look Alike, Sound Alike Medications 1st Edition, Pharmaceutical Services Division MOH, 2012
8. Medication Safety Policy, Hospital Kota Tinggi Version: 1.1
9. Medication Safety Policy, Hospital Sultan Ismail, Johor Bahru, 2016

APPENDIX A

Medication Error Reporting Flowchart

Medication Error Reporting Flowchart



APPENDIX B

Medication Error Report Form (BPF/104/ME/01)

MEDICATION ERROR (ME) REPORT FORM

BPF/104/ME/02

For PSD, MOH use

Reporters do not necessarily have to provide any individual identifiable health information, including names of practitioners, names of patients, names of healthcare facilities, or dates of birth (age is acceptable)

1 Date of event: ☐☐☐☐☐☐ dd/mm/yy

2 Time of event: ☐☐☐☐ hh/mm (24 hr)

3 Type of Facility: *MOH/ Other Government Facility/ Private
☐ Hospital ☐ Clinic ☐ Pharmacy
☐ Others: _____

4 Location of event:
☐ Ward (Please specify: Medical/Pead/Ortho/.....)
☐ Clinic (Please specify: Outpatient/Specialist/Dental/.....)
☐ Pharmacy (Please specify: Inpatient/Outpatient/Satellite/A&E/.....)
☐ A&E
☐ Others (Please specify:.....)

5 Please describe the error. Include description/ sequence of events and work environment (e.g. change of shift, short staffing, during peak hours). If more space is needed, please attach a separate page.

6 In which process did the error occur?
☐ Prescribing
☐ Dispensing (includes filling)
☐ Administration
☐ Others (Please specify) : _____

7 Did the error reach the patient?
☐ YES ☐ NO

8 Was the incorrect medication, dose or dosage form administered to or taken by the patient?
☐ YES ☐ NO

9 Describe the direct result on the patient (e.g. death, type of harm, additional patient monitoring e.g. BP, HR, glucose level etc.).

10 Please tick the appropriate Error Outcome Category (Select one)

NO ERROR
☐ A Potential error, circumstances/ events have potential to cause incident

ERROR, NO HARM
☐ B Actual Error - did not reach patient
☐ C Actual Error - caused no harm
☐ D Additional monitoring required - caused no harm

ERROR, HARM
☐ E Treatment/ intervention required - caused temporary harm
☐ F Initial/ prolonged hospitalization - caused temporary harm
☐ G Caused permanent harm
☐ H Near death event

ERROR, DEATH
☐ I Death

11 Indicate the possible error cause(s) and contributing factor(s)

☐ **Staff factors**
- ☐ Inexperienced personnel
- ☐ Inadequate knowledge
- ☐ Distraction

☐ **Medication related**
- ☐ Sound alike medication
- ☐ Look alike medication
- ☐ Look alike packaging

☐ **Task and technology**
- ☐ Failure to adhere to work procedure
- ☐ Use of abbreviations
- ☐ Illegible prescriptions
- ☐ Patient information/ record unavailable/ inaccurate
- ☐ Wrong labeling/ instruction on dispensing envelope or bottle/ container
- ☐ Incorrect computer entry

☐ **Work and environment**
- ☐ Heavy workload
- ☐ Peak hour
- ☐ Stock arrangements/ storage problem

☐ **Others (please specify):**
.....
.....

For question 12-14, please fill each box with one of the following option.

a. Specialist
b. Medical Officer (MO)
c. Houseman Medical Officer (HMO)
d. Pharmacist
e. Provisional Registered Pharmacist (PRP)
f. Nurse
g. Nurse (Trainee)
h. Assistant Medical Officer (AMO)
i. Assistant Medical Officer (AMO Trainee)
j. Pharmacist Assistant
k. Pharmacist Assistant (Trainee)
l. Patient/ Caregiver
m. Dentist
n. Others (Please specify in the box)

12 Which category made the initial error? ☐ (If "n. others", please specify:.....)

13 Other category also involved in the error? ☐ (If "n. others", please specify:.....)

14 Which category discovered the error or recognised the potential error? ☐ (If "n. others", please specify:.....)

15 If available, please provide patient's particulars (Do not provide any patient identifiers).

Age: ☐☐ *years/ months/ days **Gender:** ☐ Male ☐ Female **Diagnosis:** _____

16 Product Details: Please complete the following for the product(s) involved. Kindly attach a separate page for additional products.

Product Description	Product # 1 (intended)	Product # 1(error)
16.1 Generic Name (Active Ingredient)		
16.2 Brand / Product Name		
16.3 Dosage Form		
16.4 Dose, frequency, duration, route		

Please fill in 16.5-16.7 if error involved similar product packaging:

Product Description	Product # 1 (intended)	Product # 1(error)
16.5 Manufacturer		
16.6 Strength / Concentration		
16.7 Type and Size of Container		

* **Please delete where not applicable**

17 Reports are most useful when relevant materials such as product label, copy of prescription/order, etc., can be reviewed. Can these materials be provided?

☐ No
☐ Yes, Please specify

_____
_____

18 Suggest any recommendations, or describe policies or procedures you instituted or plan to institute to prevent future similar errors. If available, kindly attach investigational report e.g. Root Cause Analysis (RCA).

Reporter's Details

Name :	
Profession :	
Facility and Address :	Postcode : ☐☐☐☐☐
E-mail :	
Telephone number :	Fax Number :

For official use :

Date report received :
☐☐☐☐☐☐ dd/mm/yy

ME Type ☐

ME Category ☐

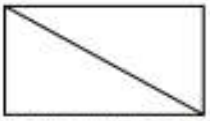
(Fold here)

Medication Safety
Is Everyone's Responsibility

www.pharmacy.gov.my
E-mail: mers@moh.gov.my

(Fold here)

NO STAMP REQUIRED



SETEM POS TIDAK DIPERLUKAN

REPLY PAID / JAWAPAN BERBAYAR
MALAYSIA
No. Lesen : BRS 0915 SEL

Medication Safety Centre (MedSC),
Pharmaceutical Services Division,
Ministry Of Health Malaysia,
P.O. Box 924, Jalan Sultan,
46790 Petaling Jaya, Selangor.

APPENDIX C

Patient Safety Incident Reporting Form IR 2.0

MINISTRY OF HEALTH MALAYSIA
PATIENT SAFETY INCIDENT REPORTING FORM

IR 2.0/2017

DATE OF REPORTING: ___/___/_____

*Borang boleh diisi dalam **Bahasa Malaysia***

SECTION A: TO BE COMPLETED BY THE REPORTER OF THE INCIDENT

INCIDENT DESCRIPTION (Please fill in the blanks)

1.	**NAME OF FACILITY/ INSTITUTION**		**PATIENT'S NAME**	
2.	**DATE OF INCIDENT**	☐☐ / ☐☐ / ☐☐☐☐	**IF UNCERTAIN** APPROXIMATE DATE: ___/___/___	
3.	**TIME OF INCIDENT**	☐☐ : ☐☐ AM/ PM	**IF UNCERTAIN** APPROXIMATE TIME: ___:___AM /PM	
4.	**PATIENT'S RN/ OTHER INDENTIFICATION NUMBER** : _____ **AGE**: _____ **ETHNIC**: _____ **GENDER** : MALE / FEMALE / UNKNOWN (please circle) **STATUS** : ALIVE / DECEASED **LANGUAGE BARRIER**: YES / NO **DIAGNOSIS** : _____			

5. **TYPE OF PATIENT** (please tick one)

☐	INPATIENT	☐	DAY CARE
☐	OUTPATIENT	☐	OTHERS: SPECIFY _____
☐	A&E		

LOCATION/ WARD / CLINIC : _____

DEPARTMENT(S) INVOLVED (please tick)

☐	MEDICAL	☐	O&G	☐	ONCOLOGY
☐	SURGICAL	☐	PHARMACY	☐	GERIATRIC
☐	ORTHOPAEDIC	☐	RADIOLOGY & IMAGING	☐	REHABILITATION
☐	PAEDIATRIC	☐	A&E	☐	ICU/ CCU
☐	LABORATORY	☐	PSYCHIATRY	☐	
☐	OTHERS: SPECIFY _____				

6. **TYPE OF INCIDENT** (please tick one) ☐ **Actual** ☐ **Near Miss**

Examples of incidents that need to be reported: (Note that this list is not exhaustive)

☐	i.	Wrong surgery/procedure –wrong site, side or patient
☐	ii.	Unintended retained foreign body in patient after an operation/procedure
☐	iii.	Error in transfusion of blood/blood products
☐	vi.	Medication error (please fill in MERS form as well)
☐	v.	Patient fall in the facility
☐	vi.	Obstetric related incidents
☐	vii.	Adverse outcome of clinical procedure
☐	viii.	Pre-hospital care and ambulance service related incident
☐	ix.	Radiotherapy related incident
☐	x.	Patient suicide / attempted suicide
☐	xi.	Patient discharged to wrong family members / next-of -kin
☐	xii.	Assault/ battery of patient
☐	xiii.	Unanticipated fire – Fire, flame, or unanticipated smoke, heat, or flashes occurring in the facility
☐	xiv.	**Others type of incident** : _____

7. **BRIEF DESCRIPTION OF WHAT HAPPENED** (Please fill in the blanks)
The description should explain what happen prior and during the incident and how it occured. Do include any additional information which you think may lead to the incident.

PATIENT OUTCOME (please tick one) & IMMEDIATE ACTION – ONLY FOR ACTUAL INCIDENT		
8. **OUTCOME OF INCIDENT**	☐	NONE
	☐	MILD
	☐	MODERATE
	☐	SEVERE
	☐	DEATH
	☐	CURRENTLY CANNOT BE DETERMINED
9. **IMMEDIATE ACTION FOLLOWING INCIDENT**		

REPORTED BY

10. **DESIGNATION:** (please tick one)

☐	NURSE	☐	SPECIALIST
☐	HOUSE OFFICER	☐	PHARMACIST
☐	MEDICAL OFFICER	☐	OTHERS:

SIGNATURE OF REPORTER:

NAME:
DATE:

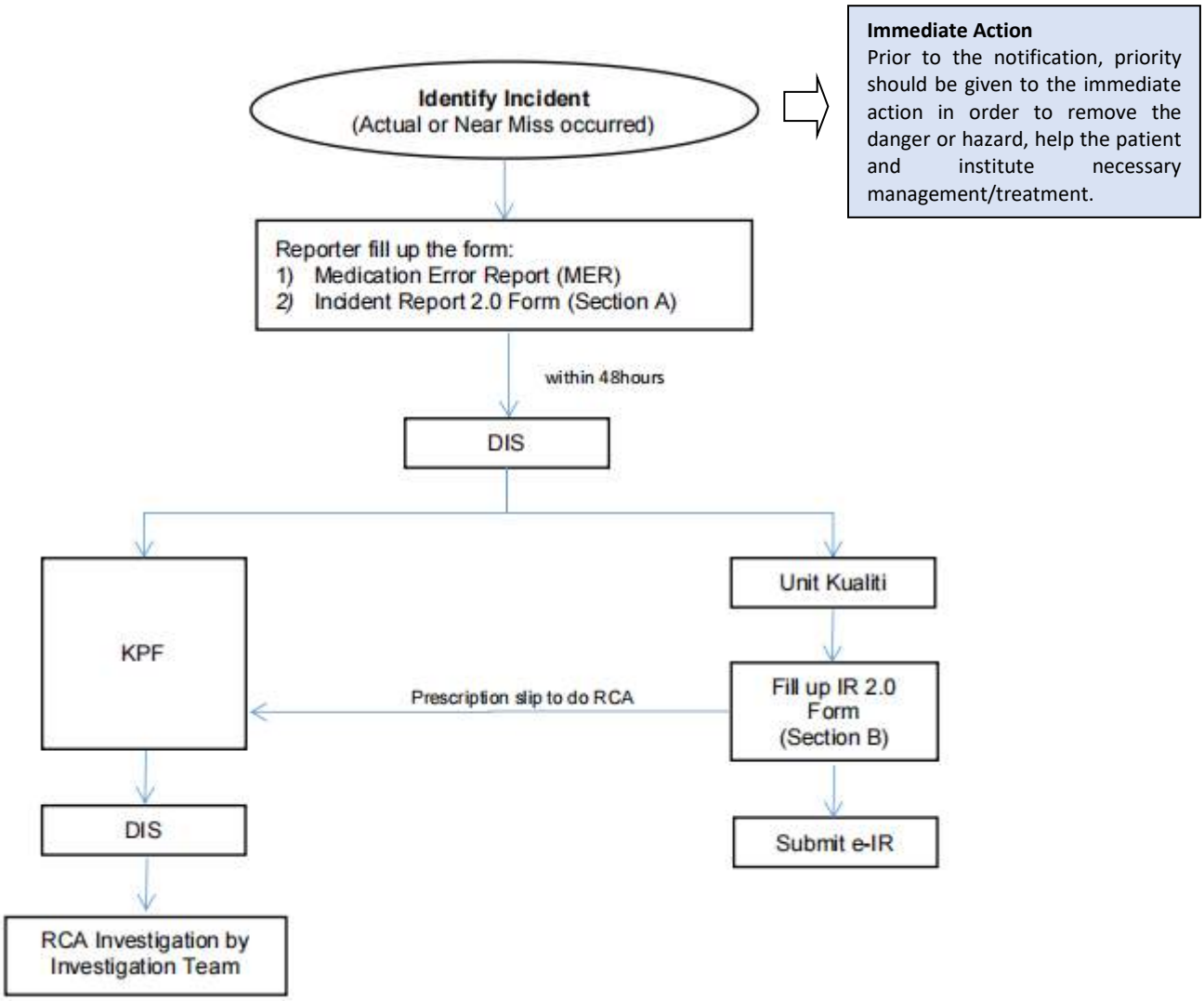
Note: As part of good leadership and clinical governance, please inform the incident to your Head of Department(s) immediately.

SECTION B : TO BE COMPLETED BY THE RISK MANAGER/ QUALITY MANAGER OF HOSPITAL	
1. **ACTION TAKEN:** *Mandatory Root Cause Analysis:* *1) Incident with Severe or Death outcome* *2) Other incident/near miss based on the Risk Manager/ Quality Manager assessment* *3) Directive from State Health Department / Ministry.*	(Please tick) ☐ "PRESCRIPTION SLIP" ☐ MONITOR THE TREND FIRST ☐ RCA ☐ MIRCA (Multi-incident Root Cause Analysis) Additional comments :
2. **e-IR SUBMITTED?** Please submit to e-IR **within 5 days** from the date of the incident.	Date of Submission:_____-_____-_____
3. **RISK MANAGER/ QUALITY MANAGER OF HOSPITAL**	(please fill in the blanks) NAME: SIGNATURE: DESIGNATION: DATE:

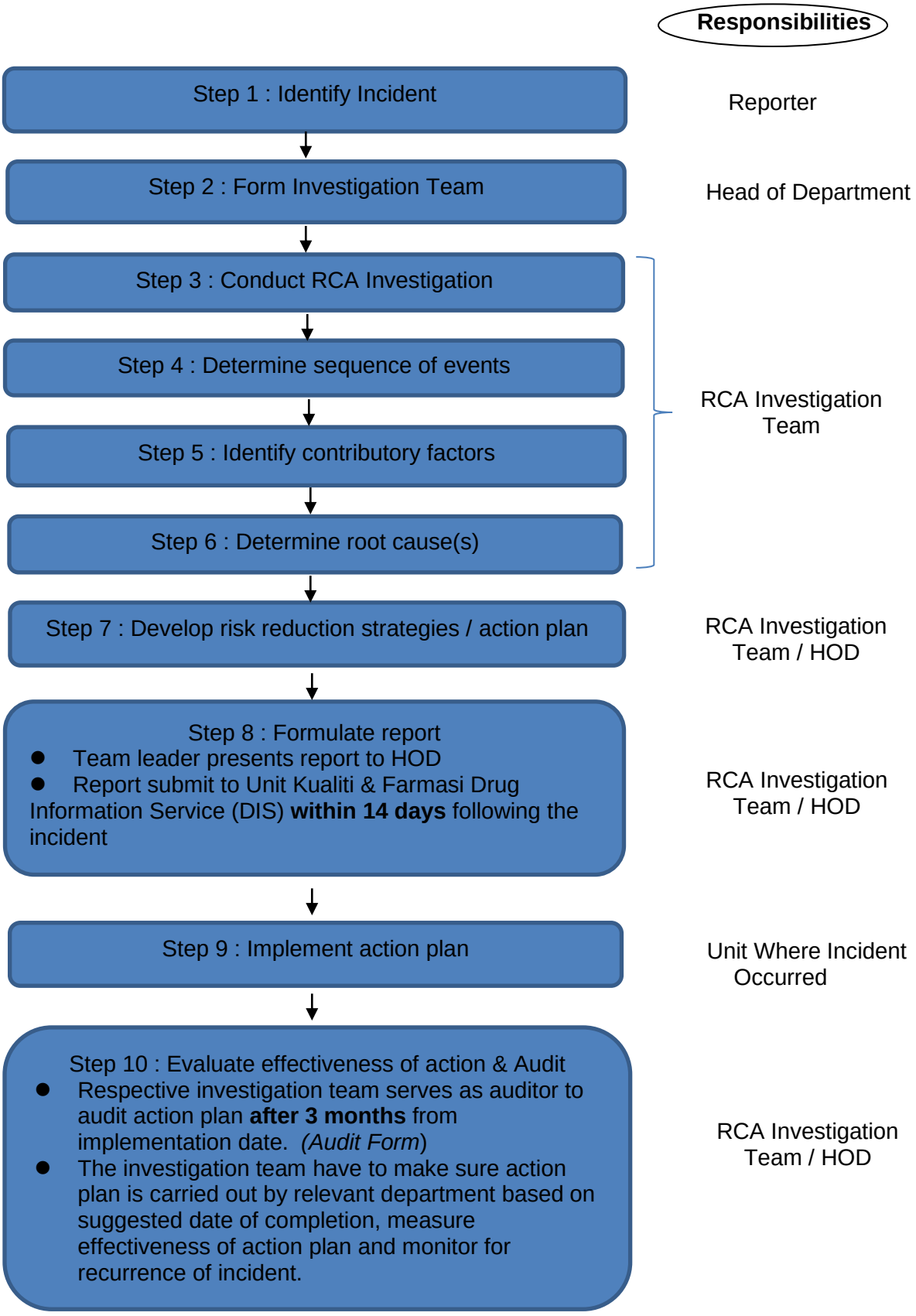
APPENDIX D

RCA2 - Root Cause Analysis Investigation Flow Chart

ROOT CAUSE ANALYSIS (RCA) INVESTIGATION FLOW CHART
JABATAN FARMASI,
HOSPITAL SULTANAH AMINAH JOHOR BAHRU



ROOT CAUSE ANALYSIS (RCA) INVESTIGATION FLOW CHART
HOSPITAL SULTANAH AMINAH, JOHOR BAHRU



APPENDIX E

Report on Suspected Adverse Drug Reactions

REPORT ON SUSPECTED ADVERSE DRUG REACTIONS

NATIONAL CENTRE FOR ADVERSE DRUG REACTIONS MONITORING

Email: fv@npra.gov.my Website: www.npra.gov.my

(Please report **all** suspected adverse drug reactions including those for vaccines, health supplements and traditional products. Do not hesitate to report if some details are not known. **Mandatory fields** are marked with *, but please give as much other information as you can. Identities of Reporter, Patient and Institution will remain **Confidential**.)

REPORT No. (*for official use only*): .....

PATIENT INFORMATION

I.C. No. / R/N / Initials	*Age	*Gender *(please tick)*	Wt (kg)	*Ethnic Group	*Please tick (if applicable):*
		Male ☐ Female ☐			☐ Initial Report ☐ Follow-up Report

***ADVERSE REACTION DESCRIPTION** (inc. sequence of adverse events, details of rechallenge, interactions)*

Time to onset of reaction :	mins/ hours/ days/ months/ years *(please circle)*	Date start of reaction : DD / MM / YYYY	Date end of reaction : DD / MM / YYYY	
Reaction subsided after stopping drug / reducing dose : Yes ☐	No ☐	Unknown ☐	◆N/A (drug continued) ☐	
Reaction reappeared after reintroducing drug : Yes ☐	No ☐	Unknown ☐	◆N/A (not reintroduced) ☐	
Extent of reaction : Mild ☐	Moderate ☐	Severe ☐		
Seriousness of reaction : Life threatening ☐	Caused or prolonged hospitalisation ☐	Caused disability or incapacity ☐	Caused birth defect ☐	◆N/A (not serious) ☐
Treatment of adverse reaction & action taken :				
Outcome : Recovered fully ☐	Recovering ☐	Not recovered ☐	Unknown ☐	Fatal: ☐ Date & Cause of death:.....
Drug-reaction relationship : Certain ☐	Probable ☐	Possible ☐	Unlikely ☐	Unclassifiable ☐

***Suspected Drug(s) :** ◆N/A: Not applicable*

Product / Generic Name	Dose & Frequency Given	MAL No.	Batch / Lot No.	Therapy Dates		Indication
				Start	Stop	

For Vaccines Only: Vaccine dose (*please circle*) : 1st/ 2nd/ 3rd/ booster/ others _____ Diluent Batch / Lot No. :

Concomitant Drug(s) / Other Vaccine(s) given just prior to AEFI [adverse events following immunisation] *(please state 'NIL' if none)* **:**

Product / Generic Name	Dose & Frequency Given	MAL No.	Batch / Lot No.	Therapy Dates		Indication
				Start	Stop	

(Please attach additional sheets if necessary)

Relevant Investigations / Laboratory Data	Relevant Medical History (e.g.: hepatic / renal dysfunction, allergies, pregnancy status, etc)

Reporter Details

*Name :	*Institution Name & Address :	
Designation :	*Tel No :	
*Email Address :	Date of Report :	Signature :

revision-01

Submission of a report does not constitute an admission that medical personnel or the products caused or contributed to the reaction. *Thank you for reporting.*

ADR Reporting Guide

Before submitting your ADR report, do check if you have inserted the following information.
Please try to fill every section in the ADR form overleaf, stating **'none / nil' if applicable. A complete report is a useful report.*

NO.	IMPORTANT POINTS TO NOTE
1	**Definitions:** **(i) Time to onset of reaction**: time interval between first dose (initiation) of the drug until first sign of the ADR. **(ii) Initial report:** First submission of report to NPRA of a particular patient involving a particular ADR. **(iii) Follow-up report:** Submission of further reports related to the same case to inform of additional information not mentioned previously or which occurred after the initial report. Please mention the date of initial report for reference.
2	Please specify any previous history of **allergy** (including drugs, food, etc.).
3	Include information on any **concomitant medications** or **underlying illnesses**? *(Please state 'nil' if none)* • Date started and stopped for each medication • Please state 'cont' for any medication still continued after the ADR
4	Please state the specific **indication** of the suspected drug (e.g.: '*pneumonia due to S. Pneumoniae'* - not 'infection' or 'antibiotic').
5	If the ADR reappeared after reintroducing drug (**rechallenge**), please describe the rechallenge fully (dose given, timing, brand used, etc.) under section 'Adverse Reaction Description'.
6	Please specify if any **treatment** was given for the ADR, or if the suspected drug was stopped, what **alternative drug** was started and how the patient responded.
7	Please include the latest / current **outcome** of the patient *(e.g. recovered fully, not recovered)*. • If possible, follow-up the patient periodically until the final outcome is known. • A follow-up report may be sent in to update on the final outcome of the patient.
8	**Skin reactions**: Please describe the specific type and location of the skin reaction. *(Use the Cutaneous ADR form and guide available on **www.npra.gov.my**)*
9	Do keep your own record of details enabling you to **contact** the patient or trace the case notes later on if necessary *(e.g. IC number, patient name and phone number)*.

*Please refer to our website for additional guidance on ADR Reporting, or contact us at **fv@npra.gov.my** if you have any queries.*

Lipat di sini

Lipat di sini

Laporan Kesan Advers Ubat
Bahagian Regulatori Farmasi Negara (NPRA)
Kementerian Kesihatan Malaysia

PUSAT PEMONITORAN KESAN ADVERS UBAT KEBANGSAAN

BAHAGIAN REGULATORI FARMASI NEGARA

LOT 36, JALAN UNIVERSITI

46200 PETALING JAYA

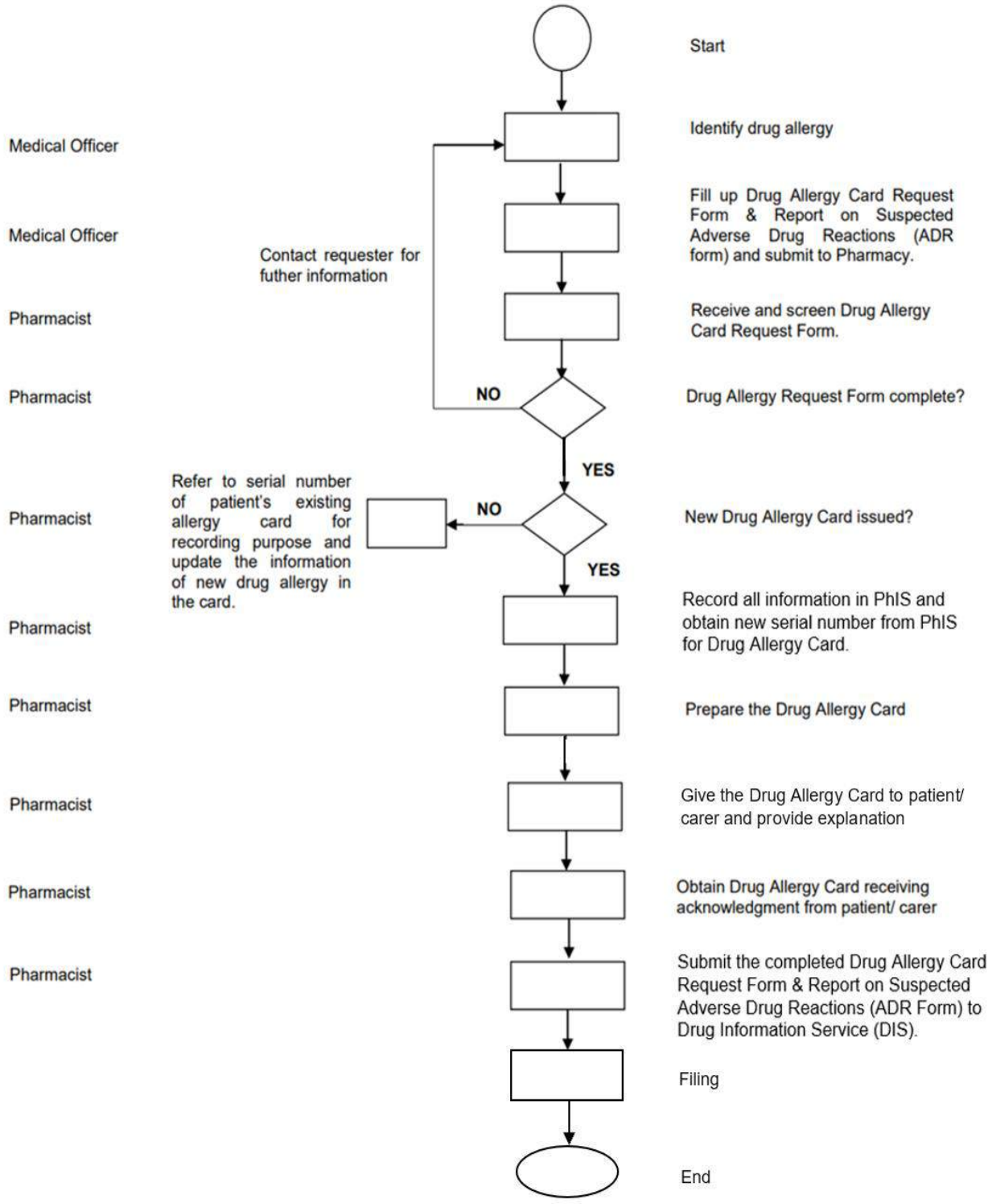
SELANGOR

- Sila lipat dua, lekat, dan hantar. Tekan beberapa saat dan pastikan pelekatan adalah memuaskan -

APPENDIX F

Drug Allergy Card Request Flowchart

Drug Allergy Card Request Flowchart



APPENDIX G

Drug Allergy Card Request Form

HSAJB/FAR-46/VER1.0/2018

No. Rujukan : _____

BORANG PERMOHONAN KAD ALAHAN UBAT
(DRUG ALLERGY CARD REQUEST FORM)
JABATAN FARMASI HOSPITAL SULTANAH AMINAH JOHOR BAHRU

A. MAKLUMAT PESAKIT

Nama : R/N :

Jantina : Lelaki / Perempuan Bangsa : _____

No. Kad Pengenalan : - -

Alamat : _____ No. Telefon (Rumah):_____
_____ - (Bimbit) :_____
_____
_____ Alamat e-mel : _____

Jika warganegara asing, sila isi maklumat berikut:

No. Passport: _____ Warganegara : _____ Umur : tahun

B. MAKLUMAT PERMOHONAN

☐ **PERMOHONAN KAD BARU**

a) Ubat

Bil.	Nama ubat yang terlibat	Reaksi Alahan
1		
2		
3		

☐ **PERMOHONAN TAMBAHAN MAKLUMAT PADA KAD**

No. Siri Kad Alahan Ubat Terdahulu (jika ada) : DAC - ___ – ____ - _____
Tarikh kad dikeluarkan : _____

a) Ubat

Bil.	Nama ubat yang terlibat	Reaksi Alahan
1		
2		
3		

C. MAKLUMAT PEMOHON

Nama dan tandatangan :
Pegawai Perubatan / Pegawai Farmasi

Cop Jawatan :
Wad / Unit :
Tarikh :

D. UNTUK KEGUNAAN FARMASI

No. Siri Kad : DAC – 01 – H01 - _____
Tarikh Kad dikeluarkan : _____

Nama dan tandatangan :
Pegawai Farmasi

Cop Jawatan :
Tarikh :

E. PENGESAHAN PENERIMAAN OLEH PESAKIT

Saya [ ] pesakit / penjaga nombor kad pengenalan [| | | | | | - | | | - | | | |] dengan ini telah menerima kad alahan dan telah diberi penerangan sewajarnya berkaitan keperluan memaklumkan atau menunjukkan kad alahan tersebut apabila berjumpa pegawai perubatan / pegawai farmasi / pegawai pergigian / anggota kesihatan. Saya juga sedia maklum bahawa kad ini adalah sebagai makluman dan panduan sahaja dan ianya tidak boleh digunakan untuk sebarang tujuan penyalahgunaan yang lain.

Tandatangan Pesakit / Penjaga : Tarikh :	Tandatangan dan cop Pegawai Farmasi : Tarikh :

APPENDIX H

Medication Safety Self Assessment Form

Medication Safety Self Assessment Form (Hospital)
Borang Penilaian Audit Kendiri Amalan Keselamatan Pengubatan (Hospital)

Part	Question	Score
A	**PATIENT AND DRUG INFORMATION** Essential patient and drug information is obtained, accessible readily when prescribing, dispensing and administering medications.	
1	At least two identifiers for a patient are verified at point of providing care, treatment or health services (e.g. patient's name, patient's tag registration number (RN), NRIC and date of birth)	
2	Basic patient's information is complete, clear and easily visible on patient's record (e.g. medication administration records)	
3	All weights are measured and documented in written in metric units (e.g. grams or kilograms for weight) for weight-based medications / paediatric patients (e.g. patient-specific dose in mg/kg or mcg/kg)	
4	Patient medication history is obtained upon admission, upon transfer within the facility and upon discharge to identify and resolve discrepancies (e.g. omissions, duplications, contraindications, polypharmacy).	
5	Pharmacists are available to assist with medication choices, answer drug enquiries, and participate in patient education.	
B	**MEDICATION STANDARDIZATION, MANAGEMENT AND STORAGE** i) Drug dilution and administration times are standardized whenever possible. ii) Medications are provided to patient care units in safe, secure manner and with clear label. iii) Safe storage of medications.	
6	A standard dilution/ extemporaneous preparation guideline/protocol has been established and used throughout the facility.	
7	Standard times for scheduled medication administration have been established and are consistently used on each unit throughout the facility.	
8	All medication containers at the bedside or interventional areas are labeled with at least the drug name and strength/ concentration (e.g. syringes, vials and ampoules used to prepare medications on patient care units) .	
9	A defined procedure should be available to monitor the expiry date of the products (e.g. colour coding, form KEW.PS-6 Senarai Stok Bertarikh Luput, PHIS)	
10	Vials of concentrated electrolytes with look alike packaging [e.g. Potassium Chloride, Hypertonic Sodium Chloride for Injection , Magnesium Sulphate] are segregated from other medicines in secure storage areas and clearly labeled.	NA
C	**LOOK ALIKE SOUND ALIKE (LASA)** Safe handling of Look Alike and Sound Alike (LASA) Medications.	
11	All staff involved in medication use process are made aware of the facility's list of look alike sound alike (LASA) products and interventions required to reduce mix-ups.	
12	The identified products with look alike drug names / packaging are segregated and stored separately. Relocation of the products shall be well informed to all of the staff.	
13	Look alike drug names are clearly distinguished in a way that differentiates them (e.g. use of TALL MAN LETTERING)	
14	Cautionary label/label enhancement is used on packages and storage bins of identified look alike sound alike products.	

D	**HIGH ALERT MEDICATIONS (HAMs)** Safe handling of High Alert Medications.	
15	High alert medications used within the facility have been identified.	
16	List of high alert medications has been disseminated to all healthcare personnel in the facility.	
17	Cautionary label/label enhancement is used on packages and storage bins of identified high alert medications.	
18	Both the drug and the dose of high alert medications must be INDEPENDENTLY COUNTER CHECKED by another healthcare personnel and documented before administration.	
E	**COMMUNICATION OF DRUG ORDERS AND OTHER DRUG INFORMATION** Methods of communicating medication orders are standardized in the facility.	
19	Compliance with safe methods of communicating the drug name, dose, route, frequency and duration (e.g. prescription, medication administration record) is monitored to minimize the risk of error.	
20	Verbal orders from prescriber are limited to emergencies or urgent situations only.	
21	When verbal orders must be taken, the personnel receiving the order must immediately document and verbally repeat the order back to the prescribers for verification.	
22	A structured and well informed process/ work flow on handling changes in medication orders are clearly communicated between units in the facility (e.g. switching from injection to oral dosage form, off medication).	
23	Changes in brand / colour/ packaging of products will be alerted to all the staffs.	
F	**MANAGEMENT OF MEDICATION ERROR** i) Healthcare personnel are encouraged to detect and report medication errors. Ii) Medication error reports are regularly analyzed and the findings were shared with all the staff.	
24	A clear DEFINITION and examples of medication errors have been established and disseminated to all healthcare personnel.	
25	A defined PROCESS / WORK FLOW should be available for reporting and managing medication error that was encountered in the facilities.	
26	Reportable events include both actual errors and the errors that have been detected and corrected before reach the patient.	
27	All medication error reported has been analyzed and monitored.	
28	Root cause analysis (RCA) has been carried out to prevent errors in future.	
29	Medication errors and strategies to reduce the errors are shared among the staff through continuous education/learning sessions.	
G	**MANAGEMENT OF PATIENT DRUG ALLERGY** i) Identification of patient with drug allergy. ii) Proper documentation to alert all healthcare personnel.	
30	A defined PROCESS /WORK FLOW should be available for identifying and managing patient with drug allergy.	
31	All documented patient allergy information was verified by prescriber.	
32	Precautionary drug allergy labelling is clearly visible on all patients' records (e.g. medication administration records /computer order entry system).	
33	All the patient with drug allergy was given drug allergy card for identification purpose.	
34	Database of the patients' allergy information were recorded systematically for document retrieval and future reference.	

H	**QUALITY PROCESSES AND RISK MANAGEMENT**	
	i) Quality assurance was carried out to monitor and evaluate medication management process.Ii) Corrective/ Preventive strategies are established/ implemented.	
35	Drug selection, preparation, labelling and filling errors identified during routine checking processes are collected and used for quality improvement activities in the facility (e.g. establishing policies/protocols/guidelines, staff awareness and education).	
36	Patient/ Medication Safety committee has been established to discuss all patient safety related issues.	
37	Error prevention strategies focus on system design/ safe behavioural practices have been established/ implemented and monitored continuously.	
38	Medication safety elements were included in the ward check list/ pharmacy visit list/ audit.	
I	**STAFF COMPETENCY AND EDUCATION**	
	Healthcare personnel involved in the medication use process are provided with ongoing education about medication error prevention and the safe use of medication.	
39	All new staff undergo orientation before they can work independently.	
40	Facility carried out continuous education to all healtchcare staff (e.g. CME/CPE, workshop, talks).	
J	**PATIENT SAFETY CULTURE**	
	Adopt **JUST CULTURE** model of shared accountability for safe system design and behavioural changes supported by the high level managements. Just culture encourages individuals to speak up and to report a medication error, allows for proper judgement of the medication error and provides learning opportunities to all healthcare professionals.	
41	There is a visible commitment on patient safety goals within the organization (e.g. specific medication safety indicators/ objectives are included in the facility's plan).	
42	Facility adopt no-blame culture in managing medication error.	
43	There is a good cooperation among hospital/facility units in order to work together and provide best care for patients.	
	TOTAL	

	Scoring Key	Explanation
A	No activity to implement	There has been no activity to implement this item.
B	Considered, but not implemented	This item has been formally discussed and considered but it has not been implemented.
C	Partially implemented in some/ all areas	This item has been partially implemented in some or all areas of the organization
D	Fully implemented in some areas	This item is fully implemented in some areas of the organization.
E	Fully implemented throughout	This item is fully implemented throughout the organization.

Prepared by,

Name:
Position(Gred):
Date:

Verified by,

Name:
Position(Gred):
Date:

*References :
1. ISMP Medication Safety Self Assessments® For Hospital
2. Medication Safety Self Assessments® For Australian Hospital

APPENDIX I

List of Look Alike Sound Alike in Hospital Sultanah Aminah Johor Bahru

SENARAI UBAT-UBATAN TABLET
LOOK ALIKE SOUND ALIKE HOSPITAL SULTANAH AMINAH

MEDICATION	CONFUSED WITH
ALPRAzolam	**CLONA**zepam
	LORAzepam
AMLOdipine	**FELO**dipine
ARIPIprazole	**PANTO**prazole
	ESOMEprazole
ATORvastatin	**SIM**vastatin
calcium **LACTATE**	calcium **CARBONATE**
carbamazepine **CR**	carbamazepine **IR**
car**BIM**azole	Co**TRIM**oxazole (Trimethoprim/Sulfamethoxazole)
CARVEDIlol	**BISOPRO**lol
CELEcoxib	**ETORI**coxib
clorpro**MAZINE**	carba**MAZEPINE**
	chlorpheni**RAMINE**
CLOXAcillin	**PENI**cillin V
	AMOXIcillin
cyclo**SERINE**	cyclo**SPORINE**
DESloratadine	loratadine
DOXAzosin	**ALFU**zosin
	PRAzosin
DULoxetine	**FLU**oxetine
DUTAsteride	**FINA**steride
DYDROgesterone	**MEDROXY**progesterone
ENALApril	**PERIN**dopril
enta**CAPONE**	ente**CAVIR**
ERYTHROmycin	**AZITHRO**mycin

	CLARITHROmycin
	CLINDAmycin
FRUsemide	**ACETAZO**lamide
IMAtinib	**NILO**tinib
Isosorbide **MONO**nitrate	Isosorbide **DI**nitrate
ITRAconazole	**FLU**conazole
LEVETIRAcetam	**PIRA**cetam
LORAzepam	**DIA**zepam
LOsartan	**VAL**sartan **TELMI**sartan
MADOpar	**METHYL**dopa
METOprolol	**ATENO**lol
	LABETAlol
	met**FORMIN**
	PROPRAnolol
Neuro**BION**	Neuron**TIN** (Gabapentin)
Progy**LUTON**	Progy**NOVA**
Sodium **CHLORIDE** powder	Sodium **BICAR**bonate powder
TENOfovir	TENOfovir / Emtricitabine (Tenvir **EM**)

SENARAI UBAT-UBATAN INJEKSI *LOOK ALIKE SOUND ALIKE*
HOSPITAL SULTANAH AMINAH

MEDICATION	CONFUSED WITH
Caffeine Citrate Oral Solution 10mg/ml	Chloral Hydrate Mixture 100mg/ml
Factor VIIa (Recombinant) eptacog alfa (activated) **50 KIU (1 mg)** Injection (Novoseven **1mg**)	Factor VIIa (Recombinant) eptacog alfa (activated) **100 KIU (2 mg)** Injection (Novoseven **2mg**)
Factor VIII and Von Willebrand factor **250 IU** Injection (Alphanate)	Factor VIII and Von Willebrand factor **500 IU** Injection (Alphanate)
	Factor VIII and Von Willebrand factor **1000 IU** Injection (Alphanate)
	Factor **IX 500 IU** Injection (Anti-Haemophilic
	Factor **IX Conc** (Human) Inj (Alphanine)
High Purity Factor VIII **250 IU** Injection (Octanate)	High Purity Factor VIII **500 IU** Injection (Octanate)
	Factor IX, II, VII, X in Combination Inj (Octaplex)
Inj Amikacin **500mg/2ml**	Inj Amikacin **250mg/2ml**
Inj Anti Tetanus Toxoid	Inj Tetanus Human Immunoglobulin 250iu
Inj ATRAcurium 10mg/ml	Inj Cisatracurium Besylate 10mg/5ml
	Inj ROCUronium 10mg/ml
Inj Benzathine Penicillin 2.4MU	Inj Benzylpenicillin **1MU**
	Inj Benzylpenicillin **5MU**
Inj BUPIvacaine 0.5	Inj BUPIvacaine **0.5% Heavy**
	Inj BUPIvacaine **0.5% with Adrenaline 1:200,000**
	Inj ROPIvacaine HCl 2 mg/ml
Inj CEFOPErazone 1g	Inj CEFUROxime 750mg

Inj CefTAZIDime 1g	Inj CefTRIAXone 1g
	Inj CefOTAXime 1g
Inj Ciprofloxacin 200mg/100ml	Inj Fluconazole 2mg/ml
	Inj Metronidazole 500mg/100ml
Inj Dexamethasone 4mg/ml	Inj Dexmedetomidine 100mcg/ml
Inj Digoxin 250mcg/ml	Inj Digoxin Immune Fab 40mg
Inj DOBUTamine 12.5mg/ml in 20ml	Inj DOPamine 40mg/ml in 5ml
Inj Enoxaparin Sodium **20mg**	Inj Enoxaparin Sodium **40mg**
	Inj Enoxaparin Sodium **60mg**
Inj Epoeitin **Beta 2000 IU** (Recormon)	Inj Epoeitin **Alfa 2000 IU** (Eryssa)
	Inj Epoeitin **Beta 4000 IU** (Recormon)
Inj FRUsemide 10mg/ml	Inj Fluphenazine Deconoate 25mg/ml
Inj HALOperidol 5mg/ml	Inj HYOScine Butylbromide 20mg/ml
	Inj Prochlorperazine Mesylate 12.5mg/ml
Inj Human Normal Immunoglobulin 2500mg/50ml (5%)	Inj Human Albumin 20% 50ml
	Inj Human Immunoglobulin 3g
Inj HYDROcortisone Sodium Succinate 100mg	Inj STREPTOmycin Sulfate 1g
Inj Iron Sucrose 100 mg/5ml	Inj Iron Dextran 50mg/ml Injection (2ml Amp)
Inj Imipenem 500mg and Cilastin 500mg	Inj MEROpenem **500mg**
	Inj MEROpenem **1g**
Inj Midazolam **15mg/3ml**	Inj Midazolam **5mg/ml**
Inj Octreotide **0.1mg/ml**	Inj Octreotide **30mg** Depot
Inj PANTOprazole 40mg	Inj OMEprazole 40mg
	Inj ESOMEprazole 40mg

Inj Pethidine **100mg/2ml**	Inj Pethidine **50mg/ml**
Inj Phytomenadione **10mg/ml** (Vitamin K)	Inj Phytomenadione **1mg/ml** (Vitamin K)
Inj Pneumococcal Vaccine Polyvalent- **13** serotypes	Inj Pneumococcal Vaccine Polyvalent- **23** serotypes
Inj Zuclopenthixol Acetate **50mg/ml** (Clopixol Accuphase)	Inj Zuclopenthixol Decanoate **200mg/ml** (Clopixol Depot)
Ipratropium Br **0.0125%** Nebulising Solution UDV	Ipratropium Br **0.025%** Nebulising Solution UDV
	Ipratropium Br **0.5mg**, Salbutamol 2.5mg Neb UDV (Combivent)
Oxymetazoline HCL **0.05%** (Adult) Nasal Spray	Oxymetazoline HCL **0.025%** (Paeds) Nasal Spray

Tarikh kemaskini: 23/4/2024

APPENDIX J

List of High Alert Medication in Hospital Sultanah Aminah Johor Bahru

SENARAI HIGH ALERT MEDICATION
HOSPITAL SULTANAH AMINAH

CLASS / CATEGORY	MEDICATIONS
Adrenagic agonists, IV	Adrenaline Acid Tartrate 1mg/ml Inj
	Ephedrine 30mg/ml Inj
	Noradrenaline Acid Tartrate 4mg/ml Inj
	Phenylephrine 10mg/10ml Inj
Adrenagic antagonists,IV	Esmolol 10mg/ml Inj
	Isoprenaline HCl 0.2mg/ml Inj
	Labetalol 25mg/5ml Inj
	Propranolol 1mg/ml Inj
Anaesthetic agents, general, inhaled and IV	Bupivacaine 0.5% (heavy) 4ml
	Bupivacaine 0.5% (plain) 20mL
	Bupivacaine 0.5% with adrenaline 1:200000 (20ml) Inj
	Desflurane Liquid
	Etomidate 20mg/10ml Inj
	Isoflurane Liquid
	Ketamine 200mg/20ml Inj
	Levobupivacaine 5mg/ml Inj
	Lignocaine 2% Inj
	Mepivacaine with adrenaline 2% (2.2ml) Inj
	Propofol 1% (10mg/ml) in 20ml Inj
	Ropivacaine 2mg/ml (20ml)

	Ropivacaine 7.5mg/ml (20ml) Inj
	Sevoflurane Liquid
	Thiopental 0.5g Inj
Antiarrhymic agents	Adenosine 3mg/ml Inj
	Amiodarone 150mg/3ml Inj
	Lignocaine HCl 100mg/5ml Inj
	Verapamil 2.5mg/ml Inj
Antithrombotic agents	Alteplase 50mg/50ml Powder for Injection (rTPA)
	Apixaban 2.5mg/5mg Tablet
	Dabigatran 110mg/150mg Tablet
	Enoxaparin Sodium 20 mg Injection
	Enoxaparin Sodium 40 mg Injection
	Enoxaparin Sodium 60 mg Injection
	Fondaparinux 2.5 mg/0.5ml Injection
	Fondaparinux 7.5mg/0.6ml Injection
	Heparin 5000 unit/ml Inj
	Streptokinase 1.5MU Inj
	Tenecteplase 10,000 unit (50mg) Injection
	Tirofiban HCl 250 mcg/ml Injection (50ml Vial)
	Urokinase 60,000iu Inj
	Warfarin 1mg/2mg/3mg/5mg Tablet
	Rivaroxaban 10mg/15mg/20mg Tablet
Antivenom	Antivenene Cobra Injection
	Antivenene Serum Sea snake 1000 units Injection
	Green Pit Viper Antivenom
	Hematotoxic Polyvalent Snake Antivenom

	King Cobra Antivenom
	Neurotoxic Polyvalent Snake Antivenom
	Malayan Pit Viper Antivenom
Glyceryl Trinitrate Injection	Glyceryl Trinitrate 5mg/ml in 10ml Inj
Immunosuppresant agents	Aflibercept 40mg/ml Inj
	Infliximab 100mg Inj
	Mycophenolate Mofetil 500 mg Injection
Inotropic medications, IV	Digoxin 0.5mg/2ml Inj
	Dobutamine HCl 250mg/20ml Inj
	Dopamine HCl 40mg/ml Inj
	Milrinone Lactate 10mg/10ml Injection
Insulin	Insulin preparations, all
Magnesium sulfate injection	Magnesium Sulphate 50% Inj
Moderate and minimal sedation agents, oral for children	Chloral hydrate 100mg/ml
Moderate sedation agents, IV	Diazepam 10mg/2ml Inj
	Dexmedetomidine HCl 200mcg/2ml Inj
	Midazolam 5 mg/ml Injection
	Midazolam 15mg/3ml Injection
Neuromuscular blocking agents	Atracurium Besylate 25mg/2.5ml Inj
	Cisatracurium 2mg/ml Inj
	Rocuronium Bromide 10mg/ml (5ml) Inj
	Suxamethonium Chloride 50mg/ml Inj
Opioids, IV, oral, transdermal	Dihydrocodeine Tartrate 30mg Tablet
	Fentanyl 12 mcg/h Trandermal Patch
	Fentanyl Citrate 50mcg/ml Injection (2ml)

	Methadone 5mg/ml Syrup
	Morphine Sulphate 10 mg/ml Injection
	Morphine Sulphate 2mg/ml Syrup
	Morphine Sulphate 10mg/30mg CR Tablet
	Oxycodone HCl 10mg/ml Inj
	Oxycodone HCl 10mg/20mg PR Tablet
	Oxycodone HCl 5mg Immediate Release Capsules
	Pethidine HCl 100 mg/2 ml Injection
	Pethidine HCl 50 mg/ml Injection
	Remifentanyl 5mg Inj
Oxytocin, IV	Carbetocin 100mcg/ml Inj
	Oxytocin 10 IU/ml Inj
	Oxytocin 5U + Ergometrine 0.5mg/ml Inj
Potassium salt injections	Potassium Chloride 1g/10mL Inj
	Potassium Dihydrogen Phosphate 1.83g/10ml Inj
Sodium chloride for injection, hypertonic (greater than 0.9% concentration)	Sodium Chloride 3% 500mL IV
	Sodium Chloride 20% Inj
Dextrose, Hypertonic (20% or greater)	Dextrose 20% 500mL IV soln
	Dextrose 50% in 10ml Inj
	Dextrose 50% IV soln 500ml

Tarikh kemasikini: 27/6/2023