



Institution Name: Al Masarra Hospital					
Document Title: Policy and Procedure of Drug-Drug Interaction					
Approval Process					
	Name	Title	Institution	Date	Signature
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Acronyms:

DGMS	Directorate General of Medical Supplies
MoH	Ministry of Health
DDI	Drug-Drug interaction
FDA	Food and Drug Administration



Policy and Procedure of Drug-Drug Interaction

1. Introduction

Patients frequently use more than one medication at a time. Unanticipated, unrecognized, or mismanaged drug-drug interactions are an important cause of morbidity and mortality associated with prescription drug use and has occasionally caused the withdrawal of approved drugs from the market. In some instances, understanding how to safely manage a Drug-Drug Interaction (DDI) may allow the Pharmaceutical Affairs department/Food and Drug Administration (FDA) to approve a drug that would otherwise have an unacceptable level of risk. Drug-Drug Interactions can be pharmacokinetics or pharmacodynamics.

Al Masarra Hospital, the pharmacy department, developed this document to keep up an excellence and establish standards for improving the overall patient health outcomes and prevent further Drug-Drug interactions especially in the field of psychiatric care management.

2. Scope

This document is applicable to all the Doctors/Staff Nurses/Pharmacy professionals/other linked health care workers dealing with clinical area procedures in Al Masarra Hospital.

3. Purpose

- 3.1 To outline general guidelines for dealing with Drug-Drug Interactions.
- 3.2 To minimize Drug-Drug Interactions related to the use of psychiatric medications and other medications.
- 3.3 To ensure the availability of Drug-Drug Interaction manual and management for all healthcare workers.
- 3.4 To improve the overall health of the admitted and discharged psychiatric patient

4. Definitions

- 4.1 **Drug-Drug interactions:** A pharmacokinetics or pharmacodynamics influence of drugs on each other, which can result, beside desired effects, in reduced effectiveness or increased toxicity.



- 4.2 **Pharmacokinetics interaction:** is when one medication alters the absorption, distribution, metabolism and/or elimination of other medication.
- 4.3 **Pharmacodynamics interaction:** is when one medication changes the pharmacological response of another medication in an additive, synergistic or antagonistic way.

5. Policy

- 5.1 Each member of the multidisciplinary team should take responsibility for the prevention and resolution of Drug-Drug Interactions (DDIs).
- 5.2 Pharmacologic Basis of Drug interactions
- 5.2.1 Pharmacodynamics Drug Interactions: Occur as a result of combined effects of pharmacological activity of drugs on physiological body systems.
- 5.2.2 Pharmacokinetics Drug Interactions
- 5.2.2.1 Absorption: Gastric pH-Presence of chelators or binders
- 5.2.2.2 Distribution: Displacement from a carrier protein
- 5.2.2.3 Metabolism: Hepatic clearance
- 5.2.2.4 Elimination: Renal elimination
- 5.3 Physician must justify and review each drug regularly, screen for DDIs with each drug's addition or deletion.
- 5.4 Nurses must assess and monitor drug administration and document any adverse drug reaction or change in the patient status and report for the same.
- 5.5 Clinical Pharmacist/Pharmacist must review each medication order for DDIs, assist in drug selection or removal and monitor for any adverse drug reaction or interaction. DDIs determined by the Clinical Pharmacist/ Pharmacist must be categorized into three categories:
- 5.5.1 Contraindicated combination: The drug combination is clearly contraindicated in all cases, should not be dispensed or administered to the patient and documenting the intervention in the patient file and report for the same.
- 5.5.2 Major interaction: Action is required to reduce the risk of severe adverse interaction/reaction.
- 5.5.3 Moderate interaction: Assess risk to patient and take action as needed.



- 5.6 For Drug-Drug interactions, the approach must be the following:
- 5.6.1 Take the medication history.
 - 5.6.2 Keep in mind high risk patients.
 - 5.6.3 Evaluate therapeutic alternatives:
 - 5.6.3.1 Dose spacing
 - 5.6.3.2 Decreasing the dose
 - 5.6.3.3 Discontinue the drug
 - 5.6.3.4 Add another drug to counter the interaction
- 5.7 Reporting of DDI must be done in Adverse Drug Reaction form which is available in the local site of the hospital.
- 5.8 Additional consideration must be required when medication have a narrow therapeutic index are prescribed or involved (e.g. Clozapine).

6. Procedure

- 6.1 The updated list of common Drug-Drug Interactions (DDIs) should be readily available and utilized as quick source of information for identification before prescribing, dispensing and administering.
- 6.2 Drug-Drug Interaction (DDI) Identification:
- 6.2.1 Not all DDI are identified by every DDI detection tool.
Clinical/Specialist judgment is required when evaluating any particular DDI.
 - 6.2.2 A clinical pharmacist/pharmacist may assist in the detection and interpretation of DDI data and the development of an alternative treatment within the available medications in the hospital through daily prescription review and medicine reconciliation process.
 - 6.2.3 Several electronic databases such as **Micromedex** (Mobile Apps are also available), **Medscape** (Mobile Apps are also available) and **Drug.com** (Mobile Apps are also available) are useful.



6.2.4 Other resources can also help in identifying DDIs such as **Hansten and Horn's Drug Interaction Analysis and Management, Physician Desk Reference and Lexi-Comp's Drug Information Handbook.**

6.3 Action steps needed from the clinical/specialist when DDI is identified:

6.3.1 Assess the patient's total number of medications (include OTC, herbal and multivitamins).

6.3.2 Review the Drug interaction, patient condition, any adverse reaction and Benefit/Risk ratio of each medication by:

6.3.2.1 Using reliable resources

6.3.2.2 Determine the severity of the interaction

6.3.2.3 Considering when modify drug regimen.

6.3.3 Minimize non-essential medications (If possible).

6.3.4 Optimize: prevent duplication, adjust dosage or frequency in case of renal or hepatic impairment, child or elderly patients.

6.3.5 Reassess: Monitor patient, vital signs, mental status and medication compliance.

7. Responsibility

7.1 All Healthcare professionals (Doctors, Nurses and Pharmacy professionals) Shall:

7.1.1 Be involved in the admission, prescribing, dispensing, monitoring, transfer and discharge of patients requiring medicines.



8. Document History and Version Control Table

Document History and Version Control			
Version	Description of Amendment	Author	Review Date
1	Initial Release	Policy and Procedure team (P&MS)	March 2021
2	Update and Review	Policy and Procedure team (P&MS)	July 2025
Written by	Reviewed by	Approved by	
Policy and Procedure team (P&MS)	Najla Al Zadjali	Dr. Bader Al Habsi	

9. Related Documents

- 9.1 Hospital Manual of Drug-Drug Interactions
- 9.2 Policy and Procedure of Medication Ordering and Review, Al Masarra Hospital
- 9.3 Policy and Procedure of Preparation and Dispensing of Medications, Al Masarra Hospital
- 9.4 Policy and Procedure of Adverse Drug Reaction Policy, Al Masarra Hospital
- 9.5 Policy and Procedure of Adverse Drug Reactions, Al Masarra Hospital



10. References

Title of book/ journal/	Author	Year of publication	Pages
Pharmacokinetics and pharmacodynamics of drug interactions involving rifampicin, rifabutin and antimalarial drugs.	Marta Sousa, Anton Pozniak, Marta Boffito	2008	872-878
Common drug interactions leading to adverse drug events in the intensive care unit: management and pharmacokinetic considerations.	Papadopoulos J1, Smithburger PL	2010	
Drug Risks and Benefits	Chris J.vanBoxtel, Budiono Santoso,	2008	
Drug Interaction Pairs Associated with an increased likelihood of Hospitalization: A New Look at the Evidence.	I.Ralph Edwards Roger Cheng	2012	

**Appendices****Appendix 1. Drug-Drug Interaction Audit Tool**

Pharmacy and Medical Stores, Al Masarra Hospital, MoH							
Drug - Drug Interaction (DDI) Audit Tool							
S.N.	Audit Process	Standard / Criteria	Yes	Partial	No	N/A	Comment
1	Observation Document Review	Is the policy written according to an international standard of DDI-policies?					
2	Observation Document Review	Is the Hospital DDI manual easy to reach/read?					
3	Observation Document Review	Are the DDIs documented in Al-Shifa 3+ computer system or in the ADR forms?					
4	Observation Interview	Is all the pharmacy staff aware about the DDI manual?					
5	Observation Interview Document Review	Are all the documented forms placed in one file in the pharmacy department or with one focal point?					
Checked by (<i>Name and Signature</i>):			Date:				



Appendix 2. Document Request Form

Document Request Form			
Section A: Completed by Document Requester			
1. Requester Details			
Name	Najla Al Zadlaji	Date of Request	July 2022
Institute	Al Masarra Hospital	Mobile	9588 5771
Department	QMPSD	Email	
The Purpose of Request			
<input type="checkbox"/> Develop New Document	<input checked="" type="checkbox"/> Modification of Document	<input type="checkbox"/> Cancelling of Document	
2. Document Information			
Document Title	Policy and Procedure of Drug-Drug Interaction		
Document Code	AMRH/PHARM/P&P/015/Vers.02		
Section B: Completed by Document Controller			
<input checked="" type="checkbox"/> Approved	<input type="checkbox"/> Cancelled	<input type="checkbox"/> Forward To:.....	
Comment and Recommendation:			
Name	Kunooz Al Balushi	Date	July 2022
Signature		Stamp	





Appendix 3. Document Validation Checklist

Document Validation Checklist					
Document Title: Policy and Procedure of Drug-Drug Interaction			Document Code: AMRH/PHARM/P&P/015/Vers.02		
No	Criteria	Meets the Criteria			Comments
		Yes	No	N/A	
1.	Approved format used				
1.1	Clear title – Clear Applicability	✓			
1.2	Index number stated	✓			
1.3	Header/ Footer complete	✓			
1.4	Accurate page numbering	✓			
1.5	Involved departments contributed	✓			
1.6	Involved personnel signature /approval	✓			
1.7	Clear Stamp	✓			
2.	Document Content				
2.1	Clear purpose and scope	✓			
2.2	Clear definitions	✓			
2.3	Clear policy statements (if any)	✓			
3.	Well defined procedures and steps				
3.1	Procedures in orderly manner	✓			
3.2	Procedure define personnel to carry out step	✓			
3.3	Procedures define the use of relevant forms	✓			
3.4	Procedures to define flowchart		✓		
3.5	Responsibilities are clearly defined	✓			
3.6	Necessary forms and equipment are listed	✓			
3.7	Forms are numbered	✓			
3.8	References are clearly stated	✓			
4.	General Criteria				
4.1	Policy is adherent to MOH rules and regulations	✓			
4.2	Policy within hospital/department scope	✓			
4.3	Relevant policies are reviewed	✓			
4.4	Items numbering is well outlined	✓			
4.5	Used of approved font type and size	✓			
4.6	Language is clear, understood and well structured	✓			
Recommendations For implementation More revision To be cancelled					
Reviewed by: Kunooz Al Balushi			Reviewed by: Irwin S. Rio 		

