

Medication Management and Safety Program

Document Information

Document Name:	PROG-PSSD-002-Medication Management and Safety Program
Issue Date:	01.09.2015
Revision Date	01.02.2024
Next Revision Date	31.01.2025
Version No.:	10
No. of Pages:	10
No. of Copies	01 of 01 – (DMS & Department)

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1.0 Introduction

1.1 Program Description: Medication use in the hospital is organized to meet patient needs, complies with applicable laws and regulations, and is under the direction and supervision of a licensed pharmacist or other qualified professional.

1.2 The **MMUP** gives an overview and organizes the process used to assure the rational, safe and effective use of medication in a cost-effective way, targeting the improvement of the patient care outcomes.

The Department of Pharmaceutical services and science is serving as an integral part of the clinical decision making and as a source for any information about drugs and drug therapy to all healthcare professionals. This includes all aspects of the proper use of medications, including preparation, storage, control, distribution, administration procedures, safe handling, therapeutic monitoring and any therapeutic applications.

2.0 Purpose

2.1 To ensure patient and medication safety through developing and monitoring a comprehensive medication management program.

3.0 Goals

3.1 The **MMUP** will plan, develop, organize and control a comprehensive medication management program to:

- 3.1.1 Provide tools for implementation and follow up of medication use policies and procedures.
- 3.1.2 Optimize medication use for improved patient outcomes
- 3.1.3 Improve collaboration among pharmacists, physicians, and other healthcare professionals;
- 3.1.4 Enhance communication between patients and their healthcare team
- 3.1.5 Ensure the rational use of medication
- 3.1.6 Ensure safe and effective use of medication
- 3.1.7 Ensure cost effective use of medication
- 3.1.8 Maintain a lean medication management process
- 3.1.9 Ensure compliance Egyptian laws and regulations and with JCI standards
- 3.1.10 Improve the patient compliance
- 3.1.11 Improve the patient satisfaction.
- 3.1.12 Prevent and reduce of medication error
- 3.1.13 Reduce the rate of preventable ADEs

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4.0 Roles & Responsibilities

- 4.1 Ultimate responsibility of ensuring safe medication management in CCHE is holding on the top management
- 4.2 Top management promotes the quality use of medicines and recognizes that medication management requires consultation and collaboration to ensure safe therapeutic outcomes.
It is the responsibility of the pharmaceutical department to manage and ensure medication safety all over the hospital and report any violation occurred at any stage in the medication management process.
- 4.3 The pharmaceutical department under the supervision of the hospital medical director has the responsibility to set medication policies and procedures that comply with legislative requirements and ensure medication safety.

5.0 MMUP Components

- 5.1 The term 'medication', in this context, collectively refers to medications, medicines, drugs, diagnostic or therapeutic agents administered by any route.
- 5.2 **The MMUP will provide direction on the Following:**
 - 5.2.1 Formulary Management and maintenance
 - 5.2.2 Selection and procurement
 - 5.2.3 Storage (supply chain Management)
 - 5.2.4 Drug Information sources
 - 5.2.5 Collaborative clinical Decision Making (Clinical Rounds)
 - 5.2.6 Prescription /CPOE ordering
 - 5.2.7 Clinical review
 - 5.2.8 Product assign
 - 5.2.9 Medication preparation
 - 5.2.10 Safe Handling of hazardous material (including Medication Disposal)
 - 5.2.11 Rational Use (stewardship Program, restricted drug forms)
 - 5.2.12 Final Product Checking
 - 5.2.13 Delivery and Handover
 - 5.2.14 Patient & Family Education
 - 5.2.15 Monitoring of patient outcomes (including Therapeutic Drug Monitoring)
 - 5.2.16 Monitoring and reporting of Medication error and Adverse drug reactions
 - 5.2.17 Documentation of pharmacy activity (medication reconciliation, Patient education and clinical interventions)
 - 5.2.18 Evaluation/Review of medication management process and Internal audit
 - 5.2.19 Staff Training and continuous education
 - 5.2.20 Performance Improvement

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6.0 Medication Management Processes

6.1 Planning

- 6.1.1 Medication use in the hospital is organized to meet patient needs, complies with Egyptian laws, and regulations, and is under the direction and supervision of qualified and a licensed pharmacist.
- 6.1.2 All pharmacy staff is trained through a comprehensive training program with appropriate sources of drug information which are readily available to those involved in medication use.
- 6.1.3 The hospital has a PNT committee with clear term of reference.
- 6.1.4 Update drug related information sources are available.
- 6.1.5 To ensure efficient and effective medication management and use, CCHE Pharmaceutical department conducts medication management systems review which done annually.
- 6.1.6 This annual review pulls together all information and experience related to medication management. **That information and experience includes at least the following:**
 - 6.1.6.1 Formulary Review.
 - 6.1.6.2 Internal audit data, MMU, MMS review with appropriated action plan
 - 6.1.6.3 Medication errors and near misses with appropriated action plan.
 - 6.1.6.4 Clinical intervention data analysis.
 - 6.1.6.5 Adverse drug reactions, toxicity and allergy report.
 - 6.1.6.6 New evidence-based guidelines, drug use evaluation and DIC communication reports.
 - 6.1.6.7 Key performance indicators in the pharmacy dashboard
- 6.1.7 The review allows hospitals to understand the need and priority of continued system improvements in quality and safety of medication use.

6.2 Selection and Procurement

- 6.2.1 Medications available for dispensing or administration are selected, listed, and procured based on criteria set by the Pharmacy, Nutrition and Therapeutic Committee (PNT). The pharmacy together with the Pharmacy, Nutrition and Therapeutic Committee established a medication formulary. The list of medications was suggested by physicians to meet patients pharmaceutical care needs.
- 6.2.2 Decisions to add or to remove medications from the list are guided by criteria that include the indication for use, effectiveness, risks, and costs.
- 6.2.3 CCHE adopts a process to monitor patient response to newly added medications for 3 months (or more as required) to assure its effectiveness

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and report any new adverse events. (Refer to formulary management policy)

- 6.2.4 The hospital has a list of all formulary and non-formulary medications, which is annually reviewed.

6.3 Storage

- 6.3.1 Medications are stored under conditions suitable for product stability, including medications stored on individual patient care units.
- 6.3.2 The pharmacy has the overall responsible for proper storage of all medication within the organization and assures the appropriate storage of medication. When medications are stored outside the pharmacy, the pharmacy provides guidelines for appropriate medication storage conditions and conducts regular internal audits to assure that storage conditions are met.
- 6.3.3 Emergency medications are available in the units where they will be needed or are readily accessible within the hospital to meet emergency needs and are monitored and replaced in a timely manner after use or when expired or damaged.
- 6.3.4 The hospital establishes and implements a process for the destruction of medications known to be expired or outdated.
- 6.3.5 Storage of pharmaceutical stock in all areas should occur in a manner that minimizes medication error. Substances that may be dangerous if administered in error due to mix-up with other products must not be stored with those products.
- 6.3.6 In all inpatient areas that have Pyxis pharmacy will review (Quantities, labeling, expire date) and refill the medication stock on daily basis.
- 6.3.7 In outpatient areas hospital has automated dispensing machine (ROWA).
- 6.3.8 **In all locations that medications are stored, the following is evident:**
- 6.3.8.1 Controlled Medicines must be stored in a locked vault or safe affixed to a solid wall as per the Act. All other medications must be stored in a secure place away from public access.
- 6.3.8.2 Storage temperature must be consistent with the specification on the label of the manufacturer's container.
- 6.3.8.3 Medications that require cold chain storage must be kept within manufacturer designated limits at all times during any storage or transportation. A system of continuous monitoring of refrigeration function must be in place where this is required.
- 6.3.8.4 All medication must be stored in an area which is not accessible to the public or clients. Refrigerators used to store medication which

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requires refrigeration do not have to be locked unless they are in a public access area.

- 6.3.9 The hospital safely controls medications brought into the hospital by patients or their families through reviewing it and pharmacy will be the responsible for dispensing it when the patient admitted to inpatients units.

6.4 Ordering and Prescribing

- 6.4.1 Prescribing, ordering, and transcribing are guided by policies and procedures lead to have a clear and accurate medication orders. (Refer to safe prescribing policy)
- 6.4.2 Primary responsibility for prescribing/ordering medications rests with the physician.
- 6.4.3 All medication orders should be written in Cerner CPOE or power chart a legible and completed way according to hospital policy (Ordering policy) to prevent and reduce medication errors.
- 6.4.4 If the medication order is in a hand written paper, it should be legible and have at least the basic patient information and the elements of the medication order as well as include the name and signature of the physician.
- 6.4.5 All drugs must be written in generic names (NO TRADE NAMES).
- 6.4.6 All medications prescribed and administered are written in the patient's MAR.
- 6.4.7 For any illegible medication order the pharmacy stop processing the order and ask the physician for clarification.
- 6.4.8 Pharmacy team tracks all illegible and incomplete orders and counted it as near misses that monthly aggregated and presented to the patient safety committee.
- 6.4.9 Medication reconciliation, including an accurate medication history, is to be conducted during the patient's admission, transfer and discharge.
- 6.4.10 No drug name abbreviations used when prescribing medications.
- 6.4.11 The hospital has established verbal order policy to control and assure the accuracy of verbal and telephonic orders. (Refer to verbal and telephone policy)

6.5 Prescription Reviewing

- 6.5.1 An accurate and complete medication history should be obtained and documented at the time of presentation or admission, or as early as possible in the episode of care.

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- 6.5.2 A pharmacist will review and evaluate patient medication regimens for each inpatient admission, transfer to/from intensive care and at discharge to the ambulatory care unit.
- 6.5.3 During medication reconciliation process the pharmacist will identify appropriate indication, Drug selection, Dosage Regimen, Allergies and etc.
- 6.5.4 **Any prescribed order must be reviewed by a qualified pharmacist This reviewing should include:**
- 6.5.4.1 The appropriateness of the drug, dose, frequency, and route of administration;
 - 6.5.4.2 Therapeutic duplication;
 - 6.5.4.3 Real or potential allergies or sensitivities;
 - 6.5.4.4 Real or potential interactions between the medication and other medications or food;
 - 6.5.4.5 Variation from hospital criteria for use;
 - 6.5.4.6 Patient's weight and other physiological information
 - 6.5.4.7 contraindications
(Refer to Prescription review policy)
- 6.5.5 The second review (Verification) is to assure the completeness, legibility and appropriateness of the medication order to be valid to be dispensed.

6.6 Medication preparation and dispensing

- 6.6.1 Primary responsibility for the preparation/dispensing of medications rests with the pharmaceutical service department.
- 6.6.2 Processing of the medication orders is done through Cerner where the pharmacist dispensed the medications and scheduled the time of administration as prescribed.
- 6.6.3 All medications should be prepared under aseptic technique but for areas that are not covered by aseptic technique the preparation will be processed by the nurse under supervision of the pharmacist and according to the standards of practice of the preparation outside the pharmacy.
- 6.6.4 All medications should be clearly labeled with a medication label generated by the system and if the medication is prepared out the pharmacy contains at least patient name, MRN, medication name, conc., route of administration, expire date and rate of infusion for intravenous medications.
- 6.6.5 Pharmacy defined a process to retrieve recalled or discontinued medications.
(Refer to medication recall policy)

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6.7 Administration

- 6.7.1 The hospital provides a highly trained, authorized staff for the administration of medications.
- 6.7.2 Medication administration includes a process to verify the medication is correct based on the medication prescription or order.
- 6.7.3 Medications are administered on a timely basis according to the physician order.
- 6.7.4 The hospital establishes and implements a process to govern patient self-administration of medications by inhibit self-administration as all medications are administered by the hospital staff (nurses or physicians) except mouth care and skin care and this will be done under supervision of nurse and after educate the patient father or mother then documented in the patient medical record.
- 6.7.5 The hospital educates patients and families about medication name, reason for use, how to administrate, dose, potential side effects, how to monitor the effects of the medication.
- 6.7.6 No person is permitted to administer any medication to a patient other than the medication prescribed by the physician on the medication chart or physician order, with the exception of those situations where the procedure for telephone/verbal orders is followed.
- 6.7.7 Double check method should be done for any medication before administering it where the nurse checks on at least the five rights of medication and then document it by using barcoding system on MAR on Cerner.

6.8 Monitoring

- 6.8.1 Pharmacy plays an important role in monitoring medication effects.
- 6.8.2 The hospital responds to actual or potential adverse drug events, significant adverse drug reactions, and medication errors according to the severity of the event.
- 6.8.3 The hospital documents any progress or adverse event appears on any patient in his/her medical record file.
- 6.8.4 Responsibility for monitoring the patient's response to medication is shared by the physician, nurse and pharmacist. Documentation and communication between disciplines is accomplished through the progress notes and the multidisciplinary care plan.
- 6.8.5 The hospital implements a follow up system to follow up the patient even after the cure is achieved.
- 6.8.6 During overseeing the medication process if there is a medication error occurred, a report should be written and send to the pharmacy manager to investigate and take the appropriate action.

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- 6.8.7 All medication errors, clinical interventions and adverse drug reactions are collected and reported to the top management through the pharmacy nutrition and therapeutic committee to take the appropriate actions and to identify the opportunities for improvement the medication management system throughout the hospital.

7.0 Medication safety strategies

- 7.1 Cerner
- 7.2 Unit dose system
- 7.3 CPOE
- 7.4 Chemotherapy power chart
- 7.5 Barcoding system
- 7.6 Compounding oral preparation
- 7.7 Pyxis (Med-station)
- 7.8 ROWA
- 7.9 Key performance indicators and data analysis
- 7.10 Aseptic technique preparation
- 7.11 Continuous pharmacy education program
- 7.12 Drug information services
- 7.13 Patient and family education
- 7.14 Performance improvement (six-sigma, FMEA)
- 7.15 Internal audit
- 7.16 Specialty in nutrition, Radiotherapy, nuclearetc.

8.0 Annual Evaluation of Medication Management and Use Program

- 8.1 Medication Use Evaluation (MUE): is a quality improvement system that focuses on evaluating and improving medication–use and/or medication use processes with the goal of optimal patient outcomes.
- 8.2 Medication use evaluation should be proactive, criteria based, designed and managed by multidisciplinary team and systematically carried out.
- 8.3 The Medication Management Plan will be assessed and measured annually by the Pharmacy and Therapeutic Committee for its effectiveness and consistency within the hospital mission and vision and the scope of services.
- 8.4 Annually Medication Use Evaluations will be considered for review by the Pharmacy and Therapeutics Committee.
- 8.5 Data and information related to medication management, pharmacy and therapeutic committee minutes of meetings, adverse drug reaction reports, medication error reporting, regular check and audit reports will be used to evaluate the medication management program within the hospital.

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- 8.6** The list of medication (formulary) approved for use within the hospital will be reviewed for new additions deletions over the year together with statistics of request of medication outside the list, changes on the list will be done as appropriate.
- 8.7** Updating of other lists such as high alert medication list, sound alike look alike drug list and concentrated electrolyte annually.

9.0 Key performance indicators

- 9.1** Compliance to Audit Schedule/Plan include medication scanning process
- 9.2** Timely Delivery of Monthly Analysis of medication errors/interventions
- 9.3** % of evaluation reports for newly added (to formulary) medication according to request from PNT
- 9.4** Percent of compliance to Medication Use Guidelines or protocols (information) reviewed
- 9.5** Percent of Compliance to TAT for Emergency Medication
- 9.6** Percent of medication waste cost from total medication cost in inpatient "reversed"
- 9.7** Percent of Pharmacist patient Education form Completion in Inpatient
- 9.8** Percent of Compliance to TAT for Emergency Medication
- 9.9** Percent of medication waste cost from total medication cost in Outpatient "reversed"
- 9.10** Percent of Pharmacist patient Education form Completion in Outpatient
- 9.11** average patient satisfaction score
- 9.12** Oracle- actual balance Supply Gap
- 9.13** TAT from sample delivery to results

10.0 Reference

- 10.1** JCI Standards 7th edition. (MMU.7)
- 10.2** GAHAR standard. MMS .01
- 10.3** Australian guidelines for medication management and use.

11.0 Attachments

- 11.1** N/A

12.0 Abbreviation/Definitions

- 12.1 MMUP:** Medication Management & Use Program
- 12.2 CCHE:** Children Cancer Hospital 57357 – Egypt
- 12.3 CPOE:** Computerized Physician Order Entry
- 12.4 MMS:** Medication Management & safety