

# SOP Template: Medication Preparation and Dosage Calculation Steps

This SOP details the essential **medication preparation and dosage calculation steps** to ensure accurate and safe administration of pharmaceuticals. It covers guidelines for verifying prescriptions, calculating correct dosages based on patient-specific factors, preparing medications under sterile conditions, double-checking measurements, and documenting all procedures to prevent errors and enhance patient safety.

## 1. Purpose

To establish standardized procedures for the preparation and dosage calculation of medications, ensuring accuracy and patient safety.

## 2. Scope

This SOP applies to all healthcare professionals involved in prescribing, preparing, and administering medications.

## 3. Responsibilities

- Ensure all steps are followed as outlined in this SOP.
- Maintain current knowledge of medication guidelines and dosage calculations.
- Report any discrepancies, errors, or adverse drug events immediately.

## 4. Procedure

### 1. Prescription Verification

- Verify the authenticity and clarity of the medication order/prescription.
- Confirm patient identity using at least two identifiers (e.g., name and date of birth).
- Check for allergies, contraindications, and medication history.

### 2. Dosage Calculation

- Review the prescribed dosage and required units.
- Calculate the correct dose based on patient-specific factors (weight, age, renal/hepatic function).
- Use standard calculation formulas as appropriate.

Example:  $\text{Desired Dose} \div \text{Stock Strength} \times \text{Volume} = \text{Amount to Administer}$

- Double-check calculations independently or with a second qualified staff member.

### 3. Medication Preparation

- Wash hands and don gloves; ensure aseptic technique throughout the process.
- Gather and verify all necessary equipment and medication vials/ampoules.
- Prepare medication in a clean, well-lit, and sterile environment as applicable.
- Draw or measure the precise amount calculated. Use calibrated devices (e.g., syringes, cups).

### 4. Double-Check and Verification

- Verify the prepared medication matches the calculated dose and prescription.
- Recheck patient identifiers before administration.
- If possible, have a second qualified personnel verify the preparation and calculation.

### 5. Documentation

- Document the medication name, dose, route, time, patient details, and any calculations performed.
- Record any adverse reactions, errors, or exceptions in the patient record.
- Sign and date all entries as per institutional policy.

## 5. References

- Hospital medication administration policies
- Relevant pharmacology guidelines
- Institutional protocols for error reporting

## 6. Review and Revision

This SOP should be reviewed annually or as needed to reflect changes in guidelines or practice standards.

