Oral drug administration

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Introduction

Because oral administration is usually the safest, most convenient, and least expensive method of drug delivery, it's the most common administration route. Drugs for oral administration are available in many forms: tablets, enteric-coated tablets, capsules, syrups, elixirs, oils, liquids, suspensions, powders, and granules. Some require special preparation before administration, such as mixing them with juice, to make them more palatable. Oils, powders, and granules most commonly require such preparation.[1]

Sometimes oral drugs are prescribed in higher dosages than their parenteral equivalents because, after absorption through the GI system, they're broken down immediately by the liver before they reach the systemic circulation.

◆ ***Older adult alert:*** An oral dosage typically prescribed for an adult may be dangerous for an older patient *because of an older patient's decreased hepatic and renal clearance*.[2] [3] ◆

Oral drug administration is contraindicated in unconscious patients. It may also be contraindicated in patients with nausea and vomiting and in those who can't swallow.

Nurses are responsible for understanding the pharmacology behind the drugs they administer to prevent potential errors and patient harm.[4]

Equipment

- Appropriate vehicle or liquid for swallowing drug (water, other beverage, or food, such as pudding or applesauce)
- Medication cup
- Patient's medication administration record
- Prescribed drug
- Optional: personal protective equipment, pill-crushing device

Preparation of Equipment

Inspect all equipment and supplies. If a product is expired, is defective, or has compromised integrity, remove it from patient use, label it as expired or defective, and report the expiration or defect as directed by your facility.

Implementation

- Avoid distractions and interruptions when preparing and administering medication *to prevent medication errors.*[5] [6]

- Verify the order on the patient's medication administration record by checking it against the practitioner's order.[7][8][9][10]
- Reconcile the patient's medications at each care transition and when the practitioner prescribes a new medication *to reduce the risk of medication errors, including omissions, duplications, dosing errors, and drug interactions.*[11][12]
- Perform hand hygiene.[13][14][15][16][17][18]

◆ ***Clinical alert:*** If your facility's hazardous drug list contains the drug you're about to administer, put on personal protective equipment, as directed.[19] ◆

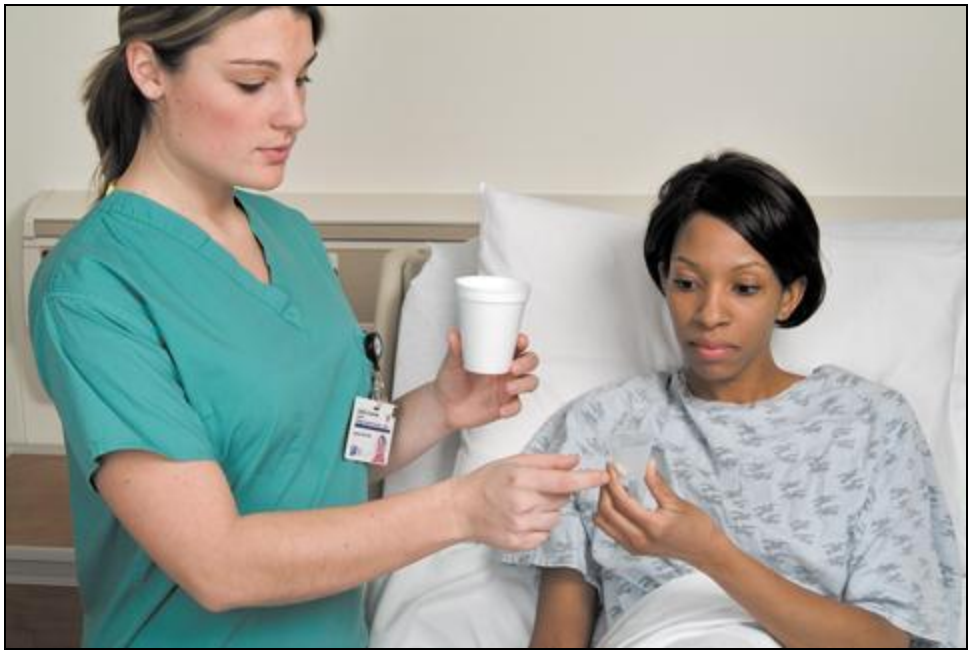
- Gather and prepare the necessary equipment and supplies.
- Compare the medication label to the order in the patient's medical record.[7][8][9][10]
- Check the patient's medical record for an allergy or contraindication to the prescribed medication. If an allergy or contraindication exists, don't administer the medication and notify the practitioner.[7][8][9][10]

◆ ***Clinical alert:*** Cardiovascular agents, antibiotics, antifungals, antiretrovirals, diuretics, anticoagulants, antidiabetics, steroids, opioids, anticholinergics, benzodiazepines, and nonsteroidal anti-inflammatory drugs are the most common drugs that cause drug interactions. *To avoid drug interactions*, review with the patient all current prescribed and over-the-counter drugs, dietary supplements, and herbal preparations. Notify the patient's practitioner and your facility's pharmacy of any potential interactions.[2][4][20][21][22] ◆

- Check the expiration date on the medication (as shown below). If the medication is expired, return it to the pharmacy and obtain new medication.[7][8][9][10]

- Visually inspect the medication for particles, discoloration, or other loss of integrity. Don't administer the medication if integrity is compromised.[7][8][9][10]

- Discuss any unresolved concerns about the medication with the patient's practitioner.[7][8][9][10]
- Perform hand hygiene.[13][14][15][16][17][18]
- Confirm the patient's identity using at least two patient identifiers.[23]
- Provide privacy.[24][25][26][27]
- Explain the procedure to the patient and family (if appropriate) according to their individual communication and learning needs *to increase their understanding, allay their fears, and enhance cooperation.*[28]
- If the patient is receiving the medication for the first time, teach the patient and family (if appropriate) about potential adverse reactions or other concerns related to the medication.[7][8][9][10]
- Assess the patient's condition *to determine the need for the medication and the effectiveness of previous therapy.*
- Observe the patient carefully for a rash, pruritus, cough, or other signs of an adverse reaction to a previously administered drug.
- Verify that you're administering the medication at the proper time, in the prescribed dose, and by the correct route *to reduce the risk of medication errors.*[7][8][9][10][29]
- If your facility uses barcode technology, use it as directed by your facility.
- Administer the medication to the patient (as shown below) along with an appropriate vehicle or liquid, as needed, *to aid in swallowing, minimize adverse effects, and promote absorption.* For example, give cyclophosphamide with adequate amounts of fluid *to force diuresis, reducing the risk of urinary tract toxicity.*[30] Administer antitussive cough syrup without fluid *to avoid diluting its soothing effect on the throat.*



- If the patient can't swallow a whole tablet or capsule, ask the pharmacist whether the medication is available in liquid form or can be administered by another route. If not, request a crushed tablet (if appropriate) or discuss whether you can crush the tablet yourself or open the capsule and mix it with food. *To prevent possible adverse effects,* keep in mind that

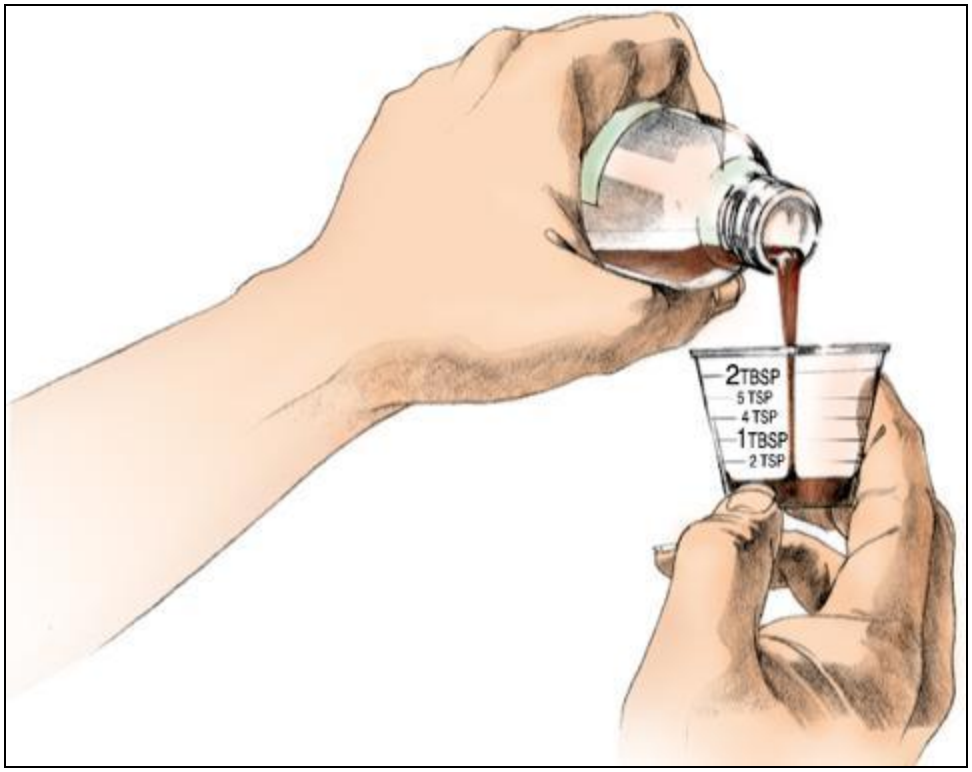
many enteric-coated and timed-release drugs and gelatin capsules shouldn't be crushed.[31] If necessary, contact the practitioner for an order to change the administration route.
- Stay with the patient until the patient has swallowed the drug. If the patient seems confused or disoriented, check the patient's mouth *to be sure that the patient has swallowed the drug.*
- Monitor the patient for adverse reactions and respond appropriately.[32]
- Discard used supplies in appropriate receptacles.[33]
- Perform hand hygiene.[13] [14] [15] [16] [17] [18]
- Document the procedure.[34] [35] [36] [37]

Special Considerations

- Notify the practitioner about any medication that the patient refuses or that you withhold.
- Assess parameters, such as blood pressure and pulse, as needed, before administering a medication with dose-holding parameters.
- Evaluate current appropriate laboratory test results (including potassium and digoxin levels), as needed and ordered, before administering a medication affected by these values.
- Have the pharmacy prepare and dispense an oral solution in a single-dose oral syringe whenever possible.[38] If not available, use care when measuring a prescribed dose of liquid oral medication. (See *Measuring liquid medications*.)

MEASURING LIQUID MEDICATIONS

To pour liquid medications, hold the medication cup at eye level. Use your thumb to mark off the correct level on the cup (as shown below).



Then put down the medication cup and read the bottom of the meniscus, which is the curved surface of the liquid, at eye level *to ensure accuracy.* If you've poured too much medication into the cup, discard the excess. Don't return it to the bottle. Follow these tips as well:

- Hold the medication container so that the medication flows from the side opposite the label, *preventing the medication from running down the container and staining or obscuring the label.* Remove drips from the lip of the container first and then from the sides using a clean, damp paper towel.
- For a liquid measured in drops, use only the dropper supplied with the medication.

- Don't administer a medication from a poorly labeled or unlabeled container. Don't attempt to label or reinforce medication labels yourself. *A pharmacist must perform this action.*[39] [40]
- Never administer a medication poured by someone else.
- Never return unwrapped or prepared medications to stock containers. Instead, dispose of them or return them to the pharmacy. Keep in mind that another nurse must witness and cosign the disposal of a controlled substance as mandated by law.
- If the patient questions you about a medication or dosage, check the medication administration record again. If the drug is correct, reassure the patient. Explain any changes in the drug or dosage. Teach the patient and family (if appropriate) about possible adverse effects. Ask the patient to report anything perceived as a possible adverse effect.
- Administer iron preparations through a straw *to avoid damaging or staining the patient's teeth*.
- Administer unpleasant-tasting liquids through a straw, if possible, *to minimize their contact with the taste buds, making them more palatable.*
- When tablets must be split, request that the pharmacy split and repackage them before dispensing the medication *to prevent medication errors.*

Patient Teaching

Teach the patient about the prescribed oral drugs, including their indications; dosages; potential interactions with other drugs, foods, and herbal and dietary supplements; potential adverse effects; and special administration guidelines. At discharge, give the patient a completely reconciled list of medications and written information about those medications.[11] [12] Be sure to meet the patient's and caregiver's (if appropriate) communication and health literacy needs when providing discharge instructions.[41] To assist a patient with functional, cognitive, or memory deficits, provide detailed medication templates or pictorial aids and assist the patient and caregiver with memory aids and dispensing devices, as needed.[42]

Take special care when teaching older adults who are at risk for polypharmacy. (See *Reducing medication risk in an older adult*.)

PATIENT TEACHING

REDUCING MEDICATION RISK IN AN OLDER ADULT

To prevent polypharmacy, help older adults manage and adhere to the medication regimen by instructing them and their caregivers (if appropriate) to follow these guidelines:[21]

- Maintain an accurate list of all medications, including over-the-counter and prescribed medications (generic and brand names), dietary supplements, and herbal remedies, with

dosages, dosing frequency, and reason for use.
- Maintain a complete list of practitioners, including their contact information.
- Take all current medications to each practitioner's appointment.
- Post the name and telephone number of the local pharmacy for easy access.
- Adhere to dietary restrictions.
- Understand potential medication-related problems that warrant emergency care.
- Take medications exactly as directed.
- Link dosing schedules to routine activities of daily living.
- Use only one pharmacy to obtain medications.
- Avoid sharing medications with others.
- Store medications in a secure, dry location away from sunlight.
- Refrigerate medications, as needed.
- Discard expired or unused medications appropriately.

Complications

Complications associated with oral drug administration may include:

- aspiration
- adverse effects of the prescribed drug
- medication administration errors.

Documentation

Documentation associated with oral drug administration includes:

- medication administered
  - medication name
  - medication strength
  - dose
  - route of administration
  - date and time of administration[43]
- adverse reactions to the prescribed medication
  - date and time of practitioner notification
  - prescribed interventions
  - response to those interventions[43]
- pertinent assessment data obtained before administration (such as heart rate or symptoms that warrant use of an as-needed medication)
- if the patient refused a medication
  - stated reason for refusal
  - date and time of practitioner notification
- whether a medication was omitted or withheld for other reasons (such as for radiology or laboratory tests or if the drug was judged to be contraindicated at the ordered time)
- controlled substance verification
  - necessary signatures (according to your facility's controlled substance documentation system)
- teaching provided to the patient and family (if applicable)
  - understanding of that teaching
  - follow-up teaching needed.

This procedure has been reviewed by the Academy of Medical-Surgical Nurses.

AMSN Academy of Medical-Surgical Nurses

Related Procedures

- Epoprostenol continuous administration through a mechanical ventilator
- Hazardous drug preparation and handling
- Long-acting injectable antipsychotic medication administration
- Magnesium sulfate administration, obstetric patient
- Medicated eye disk application
- Medication delivery acceptance, long-term care
- Mixing drugs in a syringe using a multidose vial and ampule
- Mixing drugs in a syringe using two ampules
- Mixing drugs in a syringe using two multidose vials
- Nasal drug administration, pediatric
- Nasal inhaler use
- Nebulized morphine administration, assisting
- Oral drug administration, infant
- Oral drug administration, older child
- Oral drug administration, psychiatric patient
- Oral drug administration, toddler
- Safe medication administration practices, ambulatory care
- Safe medication administration practices, general
- Safe medication administration practices, long-term care
- Safe medication administration practices, perioperative
- Transdermal patch application
- Translingual drug administration
- Tumor lysis syndrome, emergency patient care, oncology

Related UpToDate Patient Teaching Handouts

- Caregiver-Controlled Analgesia Discharge Instructions
- Tips for Swallowing Medicines
- Tips for taking oral medicines

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(Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions)

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Rating System for the Hierarchy of Evidence for Intervention/Treatment Questions

The following leveling system is adapted from *Evidence-Based practice in nursing & healthcare: A guide to best practice,* Fifth edition, by Bernadette Mazurek Melnyk and Ellen Fineout-Overholt (2023).

Level I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs)
Level II	Evidence from well-designed single RCTs (experimental)
Level III	Evidence from well-designed nonrandomized controlled trials (quasi-experimental), systematic reviews of a complete body of evidence, and intervention studies using mixed methods
Level IV	Evidence from well-designed case-control and cohort studies (observational)
Level V	Evidence from systematic reviews of qualitative and descriptive studies
Level VI	Evidence from single descriptive and qualitative studies, evidence-based practice implementation, and quality improvement projects
Level VII	Evidence from expert opinion, expert committee reports, and literature reviews

Data from Gyatt, G., & Rennie D. (2002). Users' guides to the medical literature. American Medical Association; Harris, R. P., et al. (2001). Current methods of the U.S. Preventative Services Task Force: A review of the process. American Journal of Preventative Medicine, 20, 21-35.