Drug Distribution Services for Long Term Care Facilities

Susan L. Lakey, PharmD
1/11/06

Drug distribution

★ The process:
★ Receipt / transcription of order
★ Interpretation / evaluation of order
★ Filling and packaging order and checking it
★ Delivery
★ Administration

New orders

★ Can be verbal or written, electronic, fax, or via phone
★ Involves communication between
  ★ Physicians
  ★ Nursing staff
  ★ Pharmacists
  ★ Patient
Evaluation of orders
- Prospective review
- Ensure appropriate:
  - Indication
  - Dosage and dosage form
  - Route of administration
  - Dosing interval
- Check allergy profile, concomitant disease states, other medications
- Assess interactions – drug, disease, food

Filling and packaging
- Manual and semi manual systems
  - Vials
  - Unit dose and cassettes
  - Modified unit dose
  - Medisets
- Automated systems

Traditional vials
- Advantages
  - Time effective for pharmacy
  - Less costly
- Disadvantages
  - Time consuming for facility
  - Increased chances for errors
  - More medication waste
Unit Dose Systems
- First used in the 1960s in the hospital setting
- Used to decrease errors, support nursing in medication administration, and reduce medication waste
- Standard of practice in hospital settings today

Unit Dose and Modified Unit Dose Systems
- Advantages
  - Less waste
  - Easy to track usage
  - Decreased errors of commission and omission
  - Decreased nursing time
- Disadvantages
  - Increased pharmacy time
  - More storage space
  - Increased cost

Unit Dose / Modified Unit Dose examples
- Manufacturer unit dose
- Blister packs / bingo cards
- Medication cassettes
Manufacturer unit dose

Medication cassettes

Blister / Bingo cards
Medisets

- Advantages
  - Less waste
  - Flexibility
  - Less nursing time
  - Ease of use for patients
- Disadvantages
  - Cost of medisets
  - Increased pharmacy time
  - Difficult for nursing to check for accuracy
  - Increased errors

Mediset examples

![Images of medisets]

Automation

- Advantages:
  - Decreased pharmacy assimilation time
  - Reduce medication errors by decreasing dispensing errors
  - Authorized access only enhances security
  - Availability of medications where needed
  - Improved pharmacy inventory
- Disadvantages:
  - Does not effect decrease nurse administration time
  - Training considerations
  - System downtime
  - Expensive!
**Automation considerations**
- Dispensing rate
- Flexibility and dose capabilities
- Labeling capabilities
- Accuracy and quality assurance safeguards
- Reporting and documentation capabilities
- Training requirements
- Cost

**Automation examples**
- Small systems
  - Baxter ATC
  - Script-pro 200
  - Pyxis medstation
- Larger systems
  - Baker cells
  - Baxter international bottle filler

**Baxter ATC**
- Usually installed in the pharmacy
- Medications stored in calibrated canisters.
- An order is sent to the system and the medication is dispensed from the correct canister.
- Packages unit dose tablets and capsules into labeled and sealed strip packs
Baxter ATC

Script-pro 200
- Usually installed in the pharmacy
- Fills vials directly from dispensing cells
- Can print prescription and auxiliary labels

Pyxis medstation
- Kept on nursing unit
- Nurses can access medications out of drawers
- Pharmacy responsible filling unit with medications
Baker cells
- In pharmacy system
- Counts a 30 count vial in 3-5 seconds
- Option to use software that dispenses medication after prescription is scanned

Drug delivery and administration
- Drug delivery
  - On time delivery to correct facility
  - Correct nursing area / staff
  - Ensure emergency back-up
- Medication administration
  - Correct:
    - Patient, Dose, Dosage form, Route, and Time

Documentation of drug administration
- The medication administration record (MAR)
  - Monthly record of dispensed medications for each patient
  - List of medications and administration times
  - List of PRNs to chart usage
  - Nursing/facility staff sign/initial when med dispensed
  - Tracks missed doses and changes in medications
**Emergency Kit**
- Supply of short term emergency meds tailored to specific nursing facility needs
- Gives dispensing services to facility to be used when pharmacy services not available
- Contents determined by nursing facility and pharmacy. Guided by state regulations.
- Box is sealed and locked when delivered to NF
- Broken seal indicates usage
- Nurse documents usage and returns records inside emergency kit to pharmacy for refill

**Medication distribution errors**
- **Human Error**
  - Medication orders
    - Omissions, incorrect transcription
  - Interpretation/evaluation
    - Dose appropriateness, concurrent meds and diseases, drug interactions
  - Filling and checking
  - Medication administration
    - Wrong person, dose, dosage form, route, frequency
    - Missed doses or missed documentation
- **System errors**
  - Inadequate staffing or untrained staff
  - Poor communication between providers, facility, pharmacy
  - Poor coordination between pharmacy and nursing facility for drug ordering and delivery
Consultant pharmacist role

**Order processing**
- Review patient health and medication profile
- Perform prospective review
- Consider economic issues
- Communicate with prescribers and other health care workers

**Dispensing and delivery**
- Ensure accurate packaging, labeling, and timely delivery
- Track usage and monitor medication returns
- Ensure accuracy of MAR
- Monitor reconciliation of controlled substances

**Other**
- Determine contents of emergency kits
- Ensure proper documentation and refills for emergency kits
- Determine house supply stock
- Provide drug information to staff, residents, and family members
- Ensure compliance with applicable laws and regulations governing drug distribution