Integrating Packaging, Storage, and Disposal Options into the Medication Use System

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Objectives

• Walk through the medication-use system, identifying key stakeholders and technologies
• Identify how packaging, storage, and disposal options may integrate into the medication-use system
Example products to be used throughout the presentation:

**OUTPATIENT ORDER:**
Oxycodone tablets in a calendar blister pack

**INPATIENT ORDER:**
Tamper-resistant hydromorphone syringes
Medication-use system

Selection & Procuring

Prescribing & Transcribing

Preparing & Dispensing

Monitoring & Follow-up

Administering

Storage

Example Stakeholders

- Patients/consumers
- Providers/prescribers
- Pharmacist
- Payers
- Regulators
- Manufacturers
- Distributors

- Policy makers
- Accrediting bodies
- Patient safety organizations
- Quality improvement organizations

How might health care providers learn about new options?

• Education platforms:
  – Continuing education (CE) provider systems
  – Learning Management Systems (LMS)
  – Clinical Decision Support Systems (CDSS)
  – Drug sponsor Risk Mitigation and Evaluation Strategies (REMS) portal

Medication-use system

1. Prescribing & Transcribing
2. Preparing & Dispensing
3. Administering
4. Monitoring & Follow-up

Selection & Procuring
Storage


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Medication-use system

Selection & Procuring

Prescribing & Transcribing

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Administering

Monitoring & Follow-up

Storage

Selection & Procuring

• Formulary: preferred drug list
• Example Stakeholders
  – Private practice clinicians
  – Pharmacy & Therapeutics (P&T) Committees
    • Interdisciplinary team of clinicians and administrators
  – Wholesalers/distributors/manufacturers
  – Pharmacy Benefits Managers (PBMs)
  – Third Party Payers
    • Veterans Health Administration
    • Private-sector health maintenance organizations (HMOs)
    • Private-sector payers
    • Centers for Medicare and Medicaid (CMS)

AMCP. Formulary Management. 2009
Storage

• Requirements
  1. Security of the medication
  2. Protect against accidental exposure
  3. Maintain integrity of product (quality considerations)

• Example Stakeholders
  – Wholesalers/distributors/manufacturers
  – Policy makers
  – Clinics and pharmacies (inpatient, outpatient, specialty, mail order, etc)

Medication-use system

1. Prescribing & Transcribing
2. Preparing & Dispensing
3. Administering
4. Monitoring & Follow-up

The Joint Commission. 2012. CAMH.
(1) Prescribing

Clinical decision making → Drug choice/ regimens determination → Medical record documentation → Order (written, verbal, electronic)

EXAMPLE USER(S):

Prescriber

EXAMPLE TECHNOLOGIES/SYSTEMS:

• Electronic Medical Record (EMR)
• Computerized Physician Order Entry (CPOE)

OUTPATIENT ORDER:
Oxycodone tablets in a calendar blister pack


Transcribing

Receive order ➔ Check if correct

**EXAMPLE USER(S):**
- Pharmacist
- Nurse
- Unit Clerk

**EXAMPLE TECHNOLOGIES/SYSTEMS:**
- Order Management Systems
- Pharmacy Information Systems

OUTPATIENT ORDER:
Oxycodone tablets in a calendar blister pack

Medication-use system

Selection & Procuring

Prescribing & Transcribing

Preventing Medication Errors. IOM. 2007.

Preparing & Dispensing

Administering

Monitoring & Follow-up

The Joint Commission. 2012.

CAMH. California HealthCare Foundation. 2001.
Medication-use system

Selection & Procuring

Prescribing & Transcribing

Preparing & Dispensing

Administering

Monitoring & Follow-up

Storage

(2) Preparing & Dispensing

Data entry and screening → Preparing → Double-check → Dispensing

EXAMPLE USER(S):
- Pharmacist
- Pharmacy Technician
- Buyer

EXAMPLE TECHNOLOGIES/SYSTEMS:
- Drug purchasing and supply chain management systems
- Automated Dispensing Cabinets (ADCs)

INPATIENT ORDER: Tamper-resistant hydromorphone syringes

www.fda.gov
https://transform-healthcare.com/2015/05/05/options-for-managing-insulin-with-automated-dispensing-cabinets/

(2) Preparing & Dispensing

Data entry and screening → Preparing → Double-check → Dispensing

**EXAMPLE USER(S):**
- Pharmacist
- Pharmacy Technician
- Buyer

**EXAMPLE TECHNOLOGIES/SYSTEMS:**
- Payer Prior Authorization (PA)
- Payer Medication Therapy Management (MTM)
- State Prescription Drug Monitoring Program (PMP/PDMP) databases

**OUTPATIENT ORDER:**
Oxycodone tablets in a calendar blister pack

The Joint Commission. 2012. CAMH.
Medication-use system

(1) Prescribing & Transcribing

(2) Preparing & Dispensing

(3) Administering

(4) Monitoring & Follow-up

Selection & Procuring

Storage

Medication-use system

1. Prescribing & Transcribing
2. Preparing & Dispensing
3. Administering
4. Monitoring & Follow-up

Selection & Procuring
Storage

(3) Administering

Verify instructions → Prepare or measure dose → Administer → Documentation

EXAMPLE USER(S):
- Nurse/Caregiver
- Patient

EXAMPLE TECHNOLOGIES/SYSTEMS:
- Medication Administration Record (MAR)
- Infusion Devices
- Bar Coded Medication Administration (BCMA)

INPATIENT ORDER:
Tamper-resistant hydromorphone syringes

The Joint Commission. 2012. CAMH.
(3) Administering

Verify instructions → Prepare or measure dose → Administer → Documentation

**EXAMPLE USER(S):**
- Nurse/ Caregiver
- Patient

**EXAMPLE TECHNOLOGIES/SYSTEMS:**
- Mobile medical applications
- Desktop software

**OUTPATIENT ORDER:**
Oxycodone tablets in a calendar blister pack

The Joint Commission. 2012. CAMH.
Medication-use system

1. Prescribing & Transcribing
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3. Administering
4. Monitoring & Follow-up

Selection & Procuring
Storage

(4) Monitoring & Follow-Up

- Assess for therapeutic effect & adverse effects
- Review lab results if necessary
- Adjust therapy
- Document in EMR

EXAMPLE USER(S):
- Providers
- Patient

EXAMPLE TECHNOLOGIES/SYSTEMS:
- Medication Administration Record (MAR)
- Patient Portals
  - Risk Mitigation Evaluation Strategies (REMS)
  - Health-Systems Patient Portal
- Telemedicine

OUTPATIENT ORDER:
Oxycodone tablets in a calendar blister pack

The Joint Commission. 2012. CAMH. 27
Medication-use system

(1) Prescribing & Transcribing
(2) Preparing & Dispensing
(3) Administering
(4) Monitoring & Follow-up

Selection & Procuring
Storage

The Joint Commission. 2012. CAMH. 28
Medication-use system

Selection & Procuring

Prescribing & Transcribing

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Preparing & Dispensing

Preparing & Dispensing

Administering

Monitoring & Follow-up

The Joint Commission. 2012. CAMH.
Self-care (OTC)

Decision making → OTC choice

EXAMPLE USER(S):
- Patient
- Caregivers

EXAMPLE TECHNOLOGY:
- Mobile medical applications

Summary

• The medication-use system is a complex process involving many stakeholders and technologies

• Inpatient vs. outpatient pharmacies can feature differing processes and technologies