Beyond Use Dating: In More Detail

TXCH Global HOPE

Texas Children's Hospital
CANCER AND HEMATOLOGY CENTERS

1

Objectives

By the end of this presentation, the participant should be able to:

- Differentiate between expiration dates and beyond use dates
- Define low, medium, high risk level for compounded sterile products
- Apply beyond use dating to products in your pharmacy

2

Beyond Use Date *vs* Expiration Date

- **Beyond Use Date (BUD)**
  - The time and date beyond which a compounded preparation must not be used
- **Expiration date**
  - The date which the original conventionally manufactured product can be expected to maintain quality, provided it is kept under the specified storage conditions

3

Beyond Use Date (BUD)

- Concept that recognizes the probability that a product may become contaminated, even under ideal storage and handling conditions
  - BUD target is <0.1% (1 contaminated dose per 1,000 prepared)
- Determined by 2 factors:
  - Compounded sterile product risk level, typically obtained from recognized guidance, such as United States Pharmacopoeia (USP) <797>
  - Expiration date of all included products (if shorter)
- All products should be clearly labeled with the BUD following final preparation

4

Compounded Sterile Product Risk Levels

- Risk level is based on the potential for the compounded sterile product (CSP) to become contaminated during compounding
- USP<797> identified 3 levels of risk:
  1. Low risk
  2. Medium risk
  3. High risk

5

Low Risk CSP

- Medication prepared as a single dose which does not contain more than 3 sterile ingredients (including diluent)
- Examples:
  - Stat doses and clinical doses
  - Reconstitution of single dose antibiotic vial

6

Low Risk BUD: 2 Groups

Low Risk
- Room temperature (20°C to 25°C): **48 hours**
- Refrigerated (2°C to 8°C): **14 days**
- Freezer (-25°C to -10°C): **45 days**

Modified Low Risk*
- Room temperature (20°C to 25°C): **12 hours**
- Refrigerated (2°C to 8°C): **12 hours**
- Freezer (-25°C to -10°C): ***not applicable***

**Modified Low* = a risk level for a setting without ideal environmental controls for aseptic preparation; e.g., a contained segregated compounding area (ventilated hood, but no cleanroom) instead of ideal engineering controls. Unique SOPs for cleaning and environmental sampling this specific setting are required*

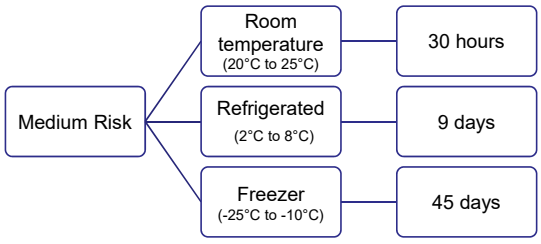
7

Medium Risk CSP

- Medications prepared by a "batch"
  - Multiple doses prepared serially for multiple patients and/or several doses for a single patient
- Single dose formulations with more than 3 ingredients
- Must be prepared under ideal aseptic conditions
  - ISO5 biosafety cabinet and ISO7 room
- Examples:
  - Batch prepped IV ondansetron for multiple patients
  - Parenteral nutrition

8

Medium Risk BUD



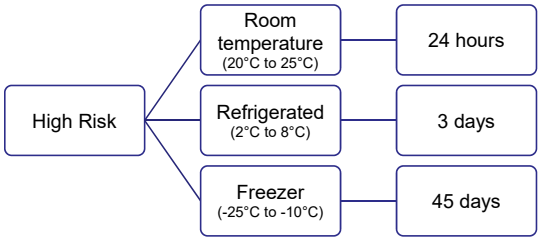
9

High Risk CSPs

- Products which are:
  - Prepared from non sterile ingredients which are then sterilized by filtration
  - Sterile CSPs prepared in air quality worse than ISO Class 5
- Examples:
  - Injectable sodium bicarbonate prepared by powder, then subsequently sterilized
  - Antibiotics in multi-dose vials prepared outside the pharmacy (i.e., by nursing)

10

High Risk BUD



11

Summary of BUDs by CSP Risk Level

May shorten based on the type of clean room and implementation of USP<800>

Risk Level	Room Temp (20 to 25ºC)	Refrigeration (2 to 8ºC)	Frozen Storage (-25 to -10ºC)
Immediate	1 hour	N/A	N/A
Modified Low*	12 hours	12 hours	N/A
Low	48 hours	14 days	45 days
Medium	30 hours	9 days	45 days
High	24 hours	3 days	45 days

**Modified Low* = a risk level for a setting without ideal environmental controls for aseptic preparation; e.g., a contained segregated compounding area (ventilated hood, but no cleanroom) instead of ideal engineering controls*

Once the storage conditions are changed, the BUD must also be changed (e.g., removing a product from a freezer to room temperature requires an updated BUD)

12

Intravenous Bag BUD

- IV solution bags are labeled with an expiration date from the manufacturer
- However, once an IV bag is removed from the wrapper (unspiked) a new BUD must be applied due to the change in storage conditions
  - *Due to the potential risk of loss of product through the plastic bag when exposed to room air*
  - *If additives are introduced into the bag, a revised BUD must be applied based on the BUD guidance for the CSP risk level*

Volume	Beyond Use Date
50 mL or less	15 days
100 mL to 1000 mL	30 days

13

Additional In-Pharmacy BUD

Some products kept and maintained under proper storage conditions in the pharmacy may be provided alternate BUD (prior to further manipulation/dispensing)

Product	BUD
Injectable given as an oral liquid (e.g., etoposide)	14 days
Multi-dose vials (e.g., regular insulin)	28 days
Irrigation solution (e.g., 0.9% sodium chloride for irrigation)	30 days
Distilled water	30 days
Isopropyl alcohol	Manufacturers expiration

14

Chemotherapy BUD Specifics

- Global HOPE Pharmacy Division has a guidance chart of BUD for commonly used chemotherapy
  - Package labeling of product on hand should be referenced to ensure storage conditions are correct, as products may vary by manufacturer
  - Pharmacy preparation conditions may necessitate further changes to the BUD (i.e., shortening of the BUD)
- Institutional, local, and regional guidance and regulations must also be followed

15

What's Next?

- Complete practice questions
- Review answer file

16

Global HOPE Pharmacy Education

17