Complying with Pharmacy Standards: USP 797 & 800

CTOA May 2019

Willis Triplett

Comply797

Three Sections for Today's Presentation

- USP – What it is and why we'd better care
- USP Chapter <797> PHARMACEUTICAL COMPOUNDING—STERILE PREPARATIONS
- USP Chapter <800> HAZARDOUS DRUGS—HANDLING IN HEALTHCARE SETTINGS

* - <800> does not replace <797> - they overlap

* - In USP's language "should" means a suggestion; "shall" or "must" means a requirement

Connecticut landscape

Connecticut Pharmacy Links

- CT Commission of Pharmacy website (under the Dept of Consumer Protection) https://portal.ct.gov/DCP/Drug-Control-Division/Commission-of-Pharmacy/The-Commission-of-Pharmacy
- CT Pharmacy Statutes https://portal.ct.gov/DCP/Agency-Administration/AA-Legislation-and-Regulations/Laws-and-Regulations#drug
- Pharmacy Chapter 400j https://www.cga.ct.gov/current/pub/chap_400j.htm
- Medicine and Surgery Chapter 370 https://www.cga.ct.gov/current/PUB/chap_370.htm#TOC
- USP Frequently Asked Questions on USP <800> http://www.usp.org/frequently-asked-questions/hazardous-drugs-handling-healthcare-settings
- CT Dept of Consumer Protection Pharmacy Sterile Compounding <797> Inspection Checklist: https://portal.ct.gov/-/media/DCP/drug_control/pdf/Inspection-Forms/USP797Inspection-Form-version-2-Web-Version.pdf?la=en
- sHB 7299 line 652.
- https://www.cga.ct.gov/2019/lcoamd/pdf/2019LCO08790-R00-AMD.pdfFind your state senators and representatives https://www.cga.ct.gov/asp/menu/cgafindleg.asp

Dispensing Physician in CT – Chapter 370

- **Sec. 20-14e. Dispensing of drugs. Prescribing and dispensing of oral antibiotic drugs for chlamydia or gonorrhea. Dispensing of contact lenses containing a drug or ocular agents-T.** (a) A drug dispensed by a prescribing practitioner shall be personally dispensed by the prescribing practitioner and the dispensing of such drug shall not be delegated except that, in emergency departments of acute care hospitals licensed under chapter 368v, the tasks related to dispensing such drug may be carried out by a nurse licensed pursuant to chapter 378 under the supervision of the prescribing practitioner.
- (b) A patient's medical record shall include a complete record of any drug dispensed by the prescribing practitioner.
- (c) A prescribing practitioner dispensing a drug shall package the drug in containers approved by the federal Consumer Product Safety Commission, unless requested otherwise by the patient, and shall label the container with the following information: (1) The full name of the patient; (2) the prescribing practitioner's full name and address; (3) the date of dispensing; (4) instructions for use; and (5) any cautionary statements as may be required by law.

- **Sec. 20-14f. Report to commissioner of intent to continue to dispense drugs other than professional samples.** A prescribing practitioner who, as part of his practice, dispenses any drug other than professional samples shall notify the Commissioner of Consumer Protection that he is engaged in the dispensing of drugs and shall, biennially, upon the date of renewal of the controlled substance registration required by section 21a-317, inform the commissioner of
- **Sec. 20-14g. Regulations.** The Commissioner of Consumer Protection, with the advice and assistance of the Commission of Pharmacy, may adopt regulations, in accordance with chapter 54, to carry out the provisions of sections 20-14c to 20-14f, inclusive. his intent to continue to dispense drugs to his patients.

sSB 1006 2019 Senate calendar

AN ACT CONCERNING REVISIONS TO THE PHARMACY AND DRUG CONTROL STATUTES.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

- Section 1. Section 20-633b of the general statutes is repealed and the following is substituted in lieu thereof (Effective January 1, 2020):
- Section 1 (4) "USP chapters" means chapters 797, 800 and 825 of the United States Pharmacopia that pertain to compounding sterile pharmaceuticals and their referenced companion documents, as amended from time to time.
- Section 1 (4)(c) A sterile compounding pharmacy shall comply with the [most recent version of the United States Pharmacopeia, Pharmaceutical Compounding - Sterile Preparations, as amended from time to time] USP chapters. A sterile compounding pharmacy shall also comply with all applicable federal and state statutes and regulations.
- Section 1 (4)(d) An institutional pharmacy within a facility licensed pursuant to section 19a-490 that compounds sterile pharmaceuticals shall comply with the [most recent United States Pharmacopeia, Chapter 797, Pharmaceutical Compounding - Sterile Preparations, as amended from time to time] USP chapters,

Who Oversees Physician Compounding?

- "State boards of medicine regulate the practice of medicine, but whether that regulation includes physicians' compounding activities can vary, and state compounding laws often do not specifically address nonpharmacist compounders" Newsletter of the National Association of Boards of Pharmacy, Innovations, March 2017

- https://nabp.pharmacy/wp-content/uploads/2016/07/Innovations_March__2017_Final.pdf

Who Oversees Physician Compounding? Are you Sure?

Week of April 22, 2019 – Proposal goes out from Board of Pharmacy to both Board of Medicine and Board of Nursing, for a Memorandum of Understanding the there is a compelling need for oversight and inspection of the touching and compounding of drugs, and having the Board of Pharmacy be that arm for these other two boards.

Letter from state nurse association to state board of nursing 3 days ago

It is our understanding that the New Hampshire Board of Nursing will be considering a proposal by Mike Bullek, with the New Hampshire Board of Pharmacy, to enter into a memorandum of understanding where the Board of Medicine and Board of Nursing delegates to the Board of Pharmacy and staff the authority to inspect licensees workplaces to ensure compliance with aseptic technique when preparing compounded medications. This proposal is similar to that considered and opposed last year. The New Hampshire Nurses Association is again concerned regarding this possibility. We feel that entering into a memorandum of understanding with the Board of Pharmacy to inspect licensees' workplaces would set a concerning precedent of ceding Board of Nursing authority to another organization. The Board of Nursing is fully capable of providing any requisite oversight and does not need to seek outside assistance. Further, is it even lawful for the Board of Nursing to delegate any of its statutory duties?

The New Hampshire Nurses Association respectfully encourages the Board of Nursing to stand with the Board of Medicine and reject any proposal that delegates its statutory responsibilities to another Board. Nurses are fully capable of governing themselves.

Part 1 – USP Chapters – A Threat Patients' Access to Oncology Care

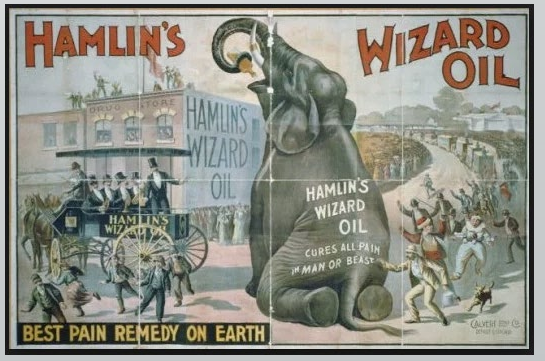
What <797> and <800> are - and why we need to learn all about them

USP

The **United States Pharmacopeial Convention** (USP) is the official compendium of drug facts for the USA

It was formed in 1820 by the nation's most prominent physicians, invited from each state, who wrote down the identification methods, formulas, and quality attributes for the drugs that the medical world believed to work at that time

The motive was to eliminate "medicine shows" and "snake oil salesmen" who traveled from town to town peddling ineffective and often toxic remedies, often called "Patent Medicines"



USP

- As USA's compendium, USP drug data are recognized in federal law (Food Drug & Cosmetic Act or FDCA) as the scientific authority on identity, strength, quality, and purity of drug substances in the USA
- USP data regarding scientific drug characteristics of identity, strength, quality, and purity have served as the basis of federal prosecutions for charges of adulteration
- USP is a private, voluntary, not-for-profit, and purportedly scientific organization and **cannot write laws or regulations**
- USP drug standards do have legal implications **IF *enforced*** by FDA or state professional authorities, but USP has no enforcement powers

USP's "Compounding Committee"

- In modern times, USP decided to create a "Compounding Committee."
- Purpose was to assemble world experts from the professional compounding practice community to compile "best practices" for the activity.
- Compounding practices are professional customs, habits, and behaviors, NOT drug facts
- Pharmacy professional practices are governed by the state pharmacy boards, NOT THE USP

USP's "Compounding Committee"

- In the late 1990s, USP administrative leadership began to press for a chapter about non-sterile compounding.
- In 2000, this chapter was finalized by the Compounding Committee and named, "<795> PHARMACEUTICAL COMPOUNDING—NONSTERILE PREPARATIONS"
- Inexplicably and inappropriately, USP administrators determined to assign the chapter a 3-digit number
- 3-digit numbers had always been reserved for "Official," ***compendial*** scientific drug data
- Suggestions, recommendations, and best practices had previously been assigned 4-digit chapter numbers

USP's "Compounding Committee"

- <795> was well received by pharmacists and pharmacy boards
- USP Administration pressed for a sterile compounding chapter and, in 2004, the Compounding Committee published <797>.
- <797> caused an uproar among pharmacy administrators who were overwhelmingly non-compliant with its "best practices" but pharmacy boards valued it for providing insights most BoP members sorely lacked.
- <797> was revised for the first and only time in 2008.
- The 2008 revision caused a second round of angst among Pharmacist-in-Charge, but continued improving pharmacy habits as it became incorporated into the paradigm of practice.

Cynicism by USP Administrative Leaders regarding the "Compounding Standards"

- USP has misled the healthcare public, using its esteemed compendial status by actively misconstruing the "best practice" suggestions written by its Compounding Committee as "Official" and therefore, COMPENDIAL. They are NOT!
- The compounding standards (<795>, <797>, <800>, et al) are not compendial because they address *professional practices*, not the *scientific drug characteristics* that are the underpinning of identity, strength, quality, and purity
- USP has abetted in peddling the myth to state pharmacy authorities that the compounding standards are the "law of the land" and implied to the pharmacy boards that they a duty to incorporate them into state rules

USP Compounding Standards

- The lucky truth is that USP compounding standards are not enforced by FDA although many prominent pharmacy speakers either imply or blatantly claim that they are
- The UNLUCKY truth is that if a **state** professional authority incorporates a USP Chapter into its rules/regulations *by reference* it CAN BE ENFORCED and STATE PENALTIES ASSESSED!
- Watch out for lawyers and competitors who might try to use the existence of these chapters as public issues against medical providers

Not Going Away

- States Boards of Medicine and Pharmacy negotiating authority
  - Some states are switching authority over physician dispensing and mixing from Board of Medicine to Board of Pharmacy
  - Some states have Boards of Pharmacy inspectors getting involved in medical practice inspections
  - Lawyers instigating employee lawsuits for illness (miscarriages) in practice mixing staff
  - States could be quiet, fermenting, or active at any point in time.

Part 2 – ⟨797⟩ PHARMACEUTICAL COMPOUNDING — STERILE PREPARATIONS

What <797> is:

Best practice considerations for compounding STERILE PREPARATIONS

USP Chapter <797> is currently "live"

- Given the current state of oncology sterile compounding procedures, vast any audit/inspection based on <797> would be a challenge
- We practice safe medicine, but not in concordance to Pharmacy World standards
- Even the current (2008) version of <797> covers fine details of:
  - Physical facilities and fixtures;
  - Garbing/Gowning/Gloving;
  - Training and Competency;
  - Tracking, and Trending of Environmental Monitoring;
  - Cleaning and Disinfection – materials and practices;
  - Written Standard Operating Procedures that are strictly followed;
  - Faithfully executed Aseptic Technique;
  - Thoughtful and validated Beyond Use Dates;
  - Rigorous and thoroughly documented Quality Assurance Program; and
  - Many other explicit requirements.

Should we study <797> and comply?

- The Oncology community should study and thoroughly understand <797>.
- Although its concepts of “best practices” are purely theoretical, its overarching thrust is safer patient care and better outcomes.
- The suggested practices in <797> are complex and expensive and cannot all be implemented at once.
- We should probably assess which parts to implement and adopt, then set priorities regarding which we will do in what order.

Since USP has NO Enforcement Powers, Is this Threat Real?

- Where might enforcement/compliance pressure come from?
  - State Boards of Health
  - State Occupational Safety/Health/Workforce Agencies
  - State Boards of Medicine
  - State Boards of Pharmacy
  - State Legislatures
  - U.S. OSHA
  - U.S. FDA
  - CMS
  - Private Payers
  - Joint Commission and other accreditors
  - Consumer Lobbies (Pew, Public Citizen, etc.)
  - Personal Injury/Class Action Law Firms

Importance of ⟨797⟩

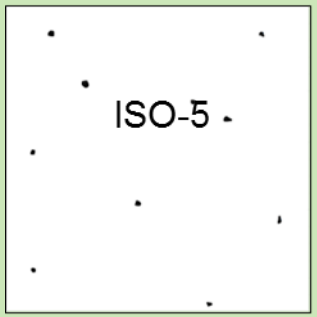
- The compounding of sterile doses is a critical risk factor for our patients – bad aseptic practices threaten their health and lives
- Patients with competent immune defenses can usually overcome small microbial contaminations, however:
  - Oncology patients are often immunosuppressed
  - Injections, infusions, irrigations and other common routes bypass the immunological protection of the gut
  - Some parenteral routes place drugs in exotic body spaces (e.g. CSF, hepatic artery, urinary bladder, etc.). This will become much more common as newer drugs are approved.
- Drug preparations given by any non-oral route ***ought to be sterile***. You wouldn't settle for less for yourself or your family member.

⟨797⟩ - Sterility Threats = Touch and Particles

- The keys to preventing microbial contamination of sterile drugs are:
  - Human Touch (most important by FAR)
    - Only a sterile surface must ever touch a sterile surface
    - Only sterile gloves should be worn and they should be sanitized with sterile alcohol
    - If any sterile surface is touched by the operator the item is deemed contaminated
    - Human touch contamination is far more likely than airborne particles
  - Airborne Particles (important but much less important than touch)
    - The air surrounding the sterile surfaces in drug mixing must be nearly particle free
    - The "hood" must provide an ISO Class 5 work area (Direct Compounding Area or DCA)
    - The ("buffer") room surrounding the "hood" must be very low in particles (ISO Class 7)
    - The room through which the buffer room is entered must also be low in particles (ISO Class 7 if the buffer room is negative pressure; Class 8 if buffer room is positive pressure)

⟨797⟩ - ISO Class ratings are LOGARTHMIC

- Both <797> and <800> have requirements for Qualified Air
- It is critical to understand that ISO Class levels are LOGARTHMIC.
- ISO Class 5 has 100 (10^2) times fewer particles than ISO-7 and 1000 times (10^3) fewer particles than ISO-8.
- There IS no ISO Class 7.5. That would be non-sensical because the jumps are exponential



⟨797⟩ - Keeping Particles Out

- Humans are the primary source of particles in our qualified air spaces
- Humans can shed up to a 1 million particles per hour
- The reason why sterile compounding operators wear gowns is to prevent the particles they're shedding from reaching the air and the floors
- Paper sheds almost as fast as people
- Opening a cardboard box creates a "particle explosion"
- Every item that enters a cleanroom must be sanitized *just before transfer* – this doesn't mean a squirt of alcohol – this requires sterile alcohol plus **wiping** with sterile, non-shedding wipe(s)
- Floors should be thoroughly cleaned and disinfected at least daily

⟨797⟩ is a rigorous examination of aseptic compounding practices, including:

- Attempts to set definitions of terms for a universal nomenclature
- Purports to define its own scope (applies to whom? when?)
- Attempts to articulate the responsibilities of various roles
- Recommendations for training staff and demonstrating competency
- Addresses design and features of compounding areas and monitoring their environmental quality and control
- Discusses how accuracy and sterility of compounds should be verified

Lays out traditional sterilization methods

⟨797⟩ is a rigorous examination of aseptic compounding practices, including:

- Cleaning and disinfection of the compounding areas
- Personnel cleansing and their donning of garb
- Suggested Standard Operating Procedures (SOPs)
- "Elements of Quality Control" and the need for a formal, effective Quality Assurance Program (QA)
- Checks and tests for the release of finished preparations
- Storage and assignment of Beyond-Use Dating (BUDs)
- Maintenance of Sterility and Stability of finished sterile preparations
- Adverse Event monitoring, tracking, and reporting

⟨797⟩ - Compliance Norms

- Pharmacy World lacks full compliance with <797>, but is much more structured and rigorous in approach than Oncology World
- We have observed several oncology practices and most fail compliance with <797> within the opening minutes off the audit
- "We Re-spect what they In-spect." Without outside eyes, will oncology sterile compounding processes improve?
- Has <797> non-compliance ever mattered in oncology? Yes. An outbreak of bloodstream infections has been directly tied to poor compounding practices in a medical oncology practice.

⟨797⟩ - Setting Priorities - Environment

- Maintaining the compounding environment:
  - Examples of adequate design features include seamless and rounded floor to wall junctions as well as readily accessible corners. (Why? – for easy cleaning)
  - Floors, walls, and ceilings should be constructed of smooth, hard surfaces that can be easily cleaned and which will stand up to harsh disinfectants
  - Ceilings and associated HEPA filter banks should be designed to protect sterile materials from contamination.
  - Cleanrooms should not contain unnecessary equipment, fixtures, or materials and personnel traffic should be minimized
  - Sinks and drains in aseptic processing areas should be avoided (biofilm)
  - Paper, cardboard, and packing materials should never be present in aseptic processing areas

⟨797⟩ - Setting Priorities - Training

- Staff Training:
  - Most oncology practices lack formal training for sterile compounding operators; training is generally on-the-job, modeled on "W1-D1-T1"
  - Formal training should include at least:
    - Handwashing process
    - Gowning/Garbing/Gloving
    - Glove sanitization methods and frequency
    - Cleaning and disinfection (including sporicidal agent)
    - Aseptic manipulations (critical site, blocking first air, unidirectional air flow, etc.)
    - Measurement and pharmaceutical calculations
    - BUD determination
    - Checking and release inspection
    - Sterilization techniques (if applicable)

⟨797⟩ - Setting Priorities - Competency

- Staff Competency Demonstrations:
  - Most oncology practices do not require competency demonstrations by their sterile compounding operators
  - Formal competency demonstrations should include at least:
    - Gowning without contamination (proven by lack of microbial growth)
    - Growth Media volume transfers, incubated without growth
      - The media transfers should mimic the most challenging and difficult compounding task the operator performs
      - The media transfers should be performed under operational (dynamic) conditions
    - Glove Fingertip Sampling – This tests the operator's ability to don sterile gloves without contaminating them. <797> suggests three uncontaminated glove donning demonstrations prior to mixing for patients

⟨797⟩ - Setting Priorities – C & D

- Cleaning and Disinfection
  - Most oncology practices do not have explicit, detailed processes for cleaning of the "hood" and the room in which it's situated
  - Fewer still have solid protocols for appropriate disinfection, which should include application of appropriate sporicidal agent
  - Effectiveness of cleaning and disinfection should be demonstrated with bioburden monitoring
- Outside Certification
  - Most oncology practices pay outside vendors to measure airflows, pressure differentials, total particle counts and perform viable air sampling to confirm that HEPA filters are working effectively
  - However, most lack the insights to evaluate the data and do not track and trend it

⟨797⟩ - Setting Priorities – SOPs

- Do you have a Procedure Manual for sterile compounding ops?
- If so, is it dusty? Or is it a "Living Document?"
- Outside inspectors (state or FDA) will observe processes in use watching closely for variances from WRITTEN procedures.
- Whenever a process is changed:
  - the Quality Governance Body should sign off on the change
  - the governing SOP should be edited and publicized to all staff
  - all affected staff should be retrained for the change
- At FDA the joke is, "Healthcare professionals write SOP manual on Post-it Notes."

⟨797⟩ - Setting Priorities – QA

- The most important words in <797> come just before the Appendices:

A provider of CSPs shall have in place a formal QA program intended to provide a mechanism for monitoring, evaluating, correcting, and improving the activities and processes described in this chapter. Emphasis in the QA program is placed on maintaining and improving the quality of systems and the provision of patient care. In addition, the QA program ensures that any plan aimed at correcting identified problems also includes appropriate follow-up to make certain that effective corrective actions were performed.

⟨797⟩ - What do we do?

- Learn what <797> says so you're ready to make your case
- Join your peers in ensuring state regulators do not enforce <797>
  - Make frequent contact with medical authority (members & admins)
  - Lobby state legislators and executives face-to-face in groups
  - Energize your state medical association/society
- While fighting back to ensure that we don't want it imposed upon us, keep in mind that following parts of it would be best for our patients
  - Gaining compliance with <797> will be a process, not an event
  - Routinely reevaluate the aseptic technique in use by staff
  - Formalize and improve your training
  - Take ownership of the quality – Form a "Quality Oversight Body" to actively examine and improve aseptic compounding quality

Part 3 – <800> HAZARDOUS DRUGS—HANDLING IN HEALTHCARE SETTINGS

What it is:

Bank-breaking, unscientific, overreaching rules for how you must ensure no humans are exposed to the drugs you buy, unpack, store, mix, administer and discard

Purpose for <800> and categorization of HD

- The stated purpose of USP <800> is eliminate or minimize exposure to healthcare workers whose duties require handling "hazardous drugs."
- Although the USP Compounding Committee states the scope of the chapter to be all hazardous drugs its central lynchpin is oncology workers mixing antineoplastics
- USP not only appointed itself to speak for all hazardous drugs, it also anointed the "NIOSH List of Hazardous Drugs" as the list healthcare "must" look to
- The NIOSH List first appeared as an appendix to the 2004 NIOSH Alert, *"Preventing Occupational Exposures to Antineoplastic and Other Hazardous Drugs in Health Care Settings"* (The Alert was written by Edward Burroughs, Thomas Connor, Melissa McDiarmid, Kenneth Mead, Luci Power, and Laurence Reed. Among the contributors was Martha Polovich.)

NIOSH HD Groupings

- The NIOSH List is divided into three tables/groups:
  - Table 1. Group 1: Antineoplastic drugs, including those with the manufacturer's safe-handling guidance (MSHG)
  - Table 2. Group 2: Non-antineoplastic drugs that meet one or more of the NIOSH criteria for a hazardous drug, including those with the manufacturer's safe-handling guidance (MSHG)
  - Table 3. Group 3: Non-antineoplastic drugs that primarily have adverse reproductive effects

<800> - Drug Handling by "Table/Group"

- Drugs on the NIOSH list that ***must*** follow the requirements in this chapter include:
  - Any HD API
  - Any antineoplastic requiring HD manipulation
- Drugs on the NIOSH list that do ***not*** have to follow ***all*** the containment requirements of this chapter if an assessment of risk is performed and implemented include:
  - Final dosage forms of compounded HD preparations and conventionally manufactured HD products, including antineoplastic dosage forms that do not require any further manipulation other than counting or repackaging (unless required by the manufacturer)
  - For dosage forms of other HDs on the NIOSH list, the entity may perform an assessment of risk to determine alternative containment strategies and/work practices

<800> Much Broader Than <797>

- <800>:
  - "…applies to all healthcare personnel who handle HD preparations and all entities that store, prepare, transport, or administer HDs."
  - (e.g., pharmacies, hospitals, and other healthcare institutions, patient treatment clinics, physicians' practice facilities, or veterinarians' offices.)
  - "…pharmacists, pharmacy technicians, nurses, physicians, PAs, home healthcare workers, veterinarians and veterinary technicians."
  - Scope includes:
    - Receipt, Handling, Storage, Disposal, Humans Physically Present in the facility
    - **Everyone** in the vicinity (nurses, receptionists, billing staff, executives, patients, waiting room, couriers, cleaning crew, and even staff who **receive** and **unpack** drugs)
    - Not just sterile, but non-sterile drug forms such as topicals and orals

<800> Crushing Unfunded Mandate

Main Impact Areas:

- Physical Facilities and Equipment (& electrical energy)
  - requires single-pass air (summer air – chill it, adjust humidity – one pass - expel it)
  - requires negative-pressure PECs vented to the outside
  - negative-pressure SEC, hard walls, door, 12 or 30 ACPH (12 for C-SCA, 30 for Ante+Buffer)
- SOPs + HD Quality Assurance Program + "Designated Person"
- Training - required for all staff members
- Huge overhead increases from doubling the required disposable supplies – gowns, garb, gloves, etc. HD overhead items must be HD-ready thus cost more
- Surveillance
  - HDs in the Office Environment
  - Medical Conditions of your Personnel (including future)

Typical Current State in Chemotherapy Compounding Areas

- Wooden counters, drawers, shelves (wood->particles and cannot disinfect)
- Contains paper, cardboard, carpet, drapes, holes in walls, etc.
- The C-PEC is a usually BSC resting on a wooden counter
- Contains compressor-style refrigerator(s) (usually dust bunnies if you check)
- Open to unrestricted foot traffic
- Walls, flooring, ceilings are of inappropriate surface for cleaning/disinfection and not maintained by protocol
- Compounding performed by seasoned R.N. – main focus is on clinical aspects of the drug-patient combination – NOT on sterility/stability of CSP (Is an RN mixing drugs like a racehorse pulling a plow?)

<800> Conforming Physical Rooms

- For compliant ***rooms***, we can choose between two strategies:

ISO-7 Clean Room Complex (Ante + Buffer-Both ISO-7)

Versus

Containment Segregated Compounding Area (C-SCA – no air qualification)

- Choice depends on the BUD times we can afford to operate with:
  - If we can live with 12 Hour BUDs, we can use C-SCA approach (more affordable)
  - If we must give full BUDs, we must use a qualified air Anteroom* plus ISO-7 Buffer Room

(*If anteroom connects to HD buffer room it must be ISO-7. If it leads to a Non-HD buffer, it can be ISO-8)

<800> C-SCA Alternative

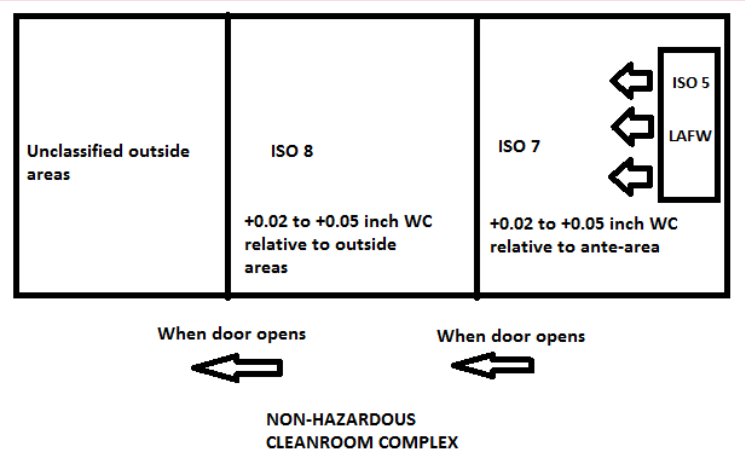
- C-SCA is a "Containment Segregated Compounding Area"
  - Less costly to build and operate than Ante + Buffer configuration
  - Acceptable for CSPs with BUDs ≤ 12 hours
  - C-SCA requires:
    - C-PEC ("Hood") vented to the outside
    - The air of the C-SCA must also vent to the outside
    - Solid walls and door must enclose the C-PEC
    - Negative pressure vs. adjacent spaces maintained in the range -0.01 to -0.03 inch WC
    - Minimum of 12 ACPH
    - No compounding of Medium- or High-Risk CSPs (Medium Risk means complex multistep compounding; High Risk means starting with non-sterile drug powders and then sterilizing them during or after compounding)

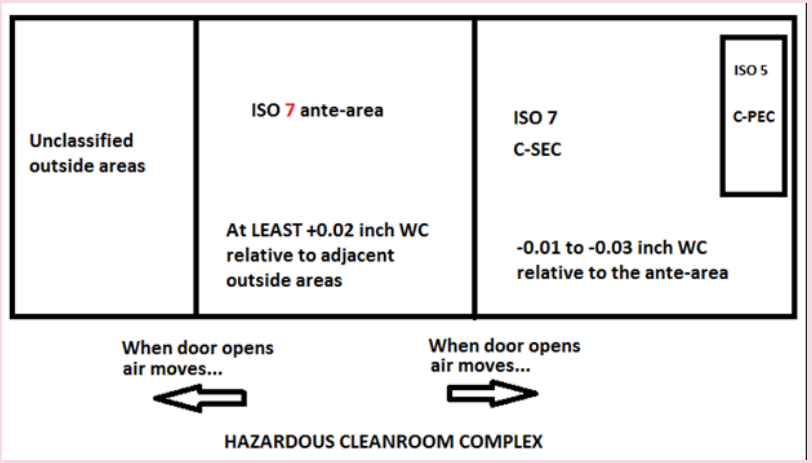
<800> - “Deactivation & Decontamination”

- For any aseptic compounding room, all surfaces (walls, ceilings, floors, equipment) must be smooth, hard, impermeable, and free of any cracks or crevices
- This is to (1) deny any places for particles to collect and (2) make for easy cleaning and disinfection
- For HD aseptic compounding rooms, the floors, walls, and ceilings must be:
  - Cleaned
  - Disinfected
  - Possible HDs DEACTIVATED
  - Possible HDs DECONTAMINATED

<800> - Construction Costs

- Many hospitals have paid > $1,000,000 for <800> compliance
- The room design and construction typically $80,000 to $250,000
- HVAC costs
  - Air Handler - at least 30 Air Changes per Hour (ACPH) for an Ante + Buffer setup (every 2 min) 60 ACPH resource is a good idea – might need spare capacity to hit minimum of 30
  - Air BALANCING is key and must be monitored regularly to ensure airflow directions are right





<800> - Exhausted Outside

- Both the Biological Safety Cabinet (BSC or "hood") and the room it is in MUST be exhausted to the outdoors
- In existing multistory buildings (especially hospitals) it is very difficult to locate a pathway (called a "chase") for the ducts to reach directly to the outdoors
- State Building Codes and Local Ordinances often specify how much above the tallest roofline the exhaust duct has to reach (often as much as 10 feet)
- Although scientifically absurd, codes and ordinances often specify a minimum distance between the exhaust that expels air with potential trace HD and the air intakes for other internal spaces
- Although <800> did not specify this, BSC user manuals and HVAC experts will always insist on a perpetually running fan to prevent backflow of exhaust

<800> - SOPs, QA, Designated Person

- As with <797>, observed operational behaviors must reflect SOPs
- As with <797>, an effective Quality Assurance program must exist for monitoring and improving the processes that pertain to HD handling
- <800> has a requirement that a "Designated Person" be in assigned the responsibility for every person, place or process that might affect HD handling and exposure
- Features include:
  - Qualified and trained in all aspects of HD handling
  - Oversees legal and regulatory compliance of the entity
  - Must understand risk prevention and the risks of non-compliance
  - Must oversee monitoring, testing, sampling and act appropriately on these results

<800> - Staff Training

- Personnel who handle HD must be trained based on their job functions
- Training must occur before employee independently handles HDs
- Effectiveness of training must be demonstrated for each employee
- Competency reassessed every 12 months
- Each employee trained for every new HD and every new or altered SOP
- Not enough to train your staff, you must demonstrate that you did
- Must demonstrate that training was effective
- Not enough to train initially, we must demonstrate that training has been reiterated regularly and staff know what they need to know to protect themselves and others from HD exposure

<800> - Overhead - Garbing

- The garb/gloves – 2 layers
  - Layer next to human to prevent particles from shedding to the clean environment
  - Outer Layer – to prevent human from exposure to HDs being handled – repellant materials
- The HD facing garb and gloves must present a seamless, uninterrupted, impermeable barrier preventing human contact with HDs, such as:
  - Tyvek coated gowns that tie in back
  - Goggles or faceplates or both
  - Gloves that have been tested to prevent HD permeation (Standard ASTM 6973) that are worn over the first set of gloves
  - Double shoe covers
  - All garb/gloves/booties disposed of as potentially trace contaminated

<800> - Overhead - CSTDs

- Closed System Transfer Devices (CSTD)
  - Should be used in **compounding** HDs
  - MUST be used in **administering** HDs
- Purpose – to CONTAIN the HD within the infusion fluids and prevent HD escape to contaminate the healthcare operator
- CSTD examples include:
  - PhaSeal (BD)
  - Equashield Closed System (includes syringes and connections)
  - ChemoClave (ICU Medical)
  - OnGuard (B.Braun)

<800> - Overhead – Site Maintenance

- Cleaning, Disinfection, Deactivation, and Decontamination fluids are expensive and sterilized versions are ten-fold more. Cleaning personnel must be extensively trained
- HD containers, liners, pickup, destruction, tracking
- Certification of hoods and rooms ($4,000 to 8,000 per visit)
  - HEPA leak testing
  - Total particle counting
  - Viable particle sampling (active sampling, impelled onto agar plates)
    - Microbiological laboratory incubation costs
    - Recertify on failure
  - Smoke pattern demonstration (video recording)
- HD Surface Contamination Surveillance Testing ("Wipe Studies")
  - Cost #1 is doing them in the first place
  - Cost #2 is remediating and doing them again if you find traces

<800> - Hazard Communication

- There has been an OSHA (federal) regulation [29 CFR 1910.1200(g)] in place since 1994 that requires an effective program of Hazard Communication to all staff.
  - When new personnel hire on each must be presented with a list of all hazardous substances they might contact in the workplace.
  - How do you know it is a hazardous substance? It will have an Safety Data Sheet (SDS)
  - The regulation requires that the employer make the SDS (formerly MSDS) readily available to each employee (MSDS.com – a subscription service)
  - Most oncology practices seem aware of the federal regulatory requirement
  - OSHA does not appear to make routine inspections of physician offices or pharmacies, but do respond to "whistle-blower" complaints
  - OSHA has levied substantial fines against healthcare provider organizations in response to such complaints
  - This requirement is a shared responsibility of Human Resources and Operational Leadership

<800> & Drug Administration

- HDs must be administered using protective devices and techniques (needle-less, closed systems)
- Appropriate PPE must be worn when administering HDs
- Used PPE must be disposed of in a waste container approved for trace-contaminated HD
- Equipment and packaging materials disposed likewise
- CSTDs must be used to administer antineoplastic HDs whenever the dosage form allows
- Eye protection when working at or above eye level

<800> - Medical Surveillance

- <800> says
  - our workers who handle HD should be enrolled in a medical surveillance program
  - we should involve assessment and documentation of symptom complaints, physical findings and lab values to "determine whether there is deviation from the expected norms.
  - We should perform an "Initial Baseline Assessment" of workers' health status and medical history before they begin their duties
  - Methods used to assess exposure history should include a review of:
    - Records of HDs handled, with quantities and dosage forms
    - Estimated number of HDs handled per week
    - Estimates of hours spent handling HDs per week and/or per month
    - Performance of a physical assessment and laboratory studies linked to target organs of commonly used HDs, such as a baseline complete blood count. Biological monitoring to determine blood or urine levels of specific HDs is not currently recommended in surveillance protocols, but may have a role in the follow-up of acute spills with a specific agent.

Know the Sources

- USP Committee and Expert Panel
  - Not from oncology
  - Not from dispensing medical practices
  - May have business interests in related areas
  - May be or have colleagues consulting about USP chapters in medical and pharmacy community
  - Aligning with national and state boards of pharmacy

USP Hazardous Drug Expert Panel

- Patricia C. Kienle, B.S. Pharm, M.P.A.
- Eric Kastango, M.B.A., B.S.Pharm., FASHP
- James Wagner
- Thomas Connor, Ph.D.
- Kenneth Mead, Ph.D.
- Luci Power, B.S. Pharm, M.S. Pharm
- Melissa McDiarmid, M.D.
- Martha Polovich, R.N., Ph.D.

Where do we go from here?

This affects our patients

- Affects Patient Access by manipulating Site of Care
  - Costs patients and payers more
- Compliance and Adoption makes sense in many ways, but not where unfunded mandates create back breaking costs with little basis of evidence
- Compliance will be a journey, not a weekend solution
- Question consultants, question 6 figure quotes, plan a path but you don't have to jump into full USP <800> as written until the dust settles.
- Compliance is not just facilities or checklists. It is culture, mindset, consistent processes, continuous quality improvement, training, competency, awareness.
- Compliance should not also be mindless. The emperor has no clothes. Call for the evidence, call for transparency, call for guidance to not be considered as law.
- Look, watch, listen, and reach out together.

Motherhood and Apple Pie – which side represents Science and Truth?

- USP <800> folks and their allies have wrapped themselves up in "doing what's right."
  - What's right is designing and building new cleanrooms, certifying those new cleanrooms and the "hoods" inside them, selling you truckloads of single-use disposable supplies you never knew you needed, and selling you books and on-site training to teach you how to follow <800>
  - Why it's right is "making the workplace safe," against supposed cancers when the scientific evidence is extremely weak
- Our side needs to answer that "doing what's right" is making sure that patients have easy access to their cancer treatments in smaller, rural communities

This is a Journey, and Whack-A-Mole across the country

- Watch the process in just one state
  - Nov 2017 – surprise practice inspections, citations, fines, cease orders
  - Dec – Jan 2018 – Board hearings, ad hoc coalition (MDs, DGH Consulting, payers, home infusion, home nursing) not hospitals
  - February2018 – BOP hearing – USP <797> "law of land" NO, rescind citations and fines until June 2018
  - Mar – June – Compounding amendment in legislation
  - July sign of relief followed by BOP focus on aseptic technique
  - October – BOP meeting – decision to remove USP <797> as the state regulation, replaced by regulations developed by BOP (will not be signed by governor into law until June 2019, if successful) (Willis Triplett, PharmD added to committee to develop BOP regulations)
  - Feb 2019 – legislation proposed the adds "using aseptic technique" to responsibilities
  - March 2019 – "using aseptic technique" removed
  - April 2019 – BOP proposes memorandums to BOM and BON to become their pharmacy oversight and inspection arm.

Pharmacy Standards What can WE do?

- Read them (USP, CA BOP)
  - (purchase the USP Compounding Compendium $150)
  - http://www.usp.org/compounding/general-chapter-797
  - http://www.usp.org/compounding/general-chapter-hazardous-drugs-handling-healthcare
  - http://www.pharmacy.ca.gov/
- Understand the jargon, learn the acronyms
- Monitor state legislation – meet proactively with Legislators
- Call them Out – the emperor has no clothes!
- Attack their science (until they produce some)
- Collaborate across professions and stakeholders
- Activate the “green” groups over the energy & co2 load

BUT STILL PREPARE YOUR TEAM AND YOUR PRACTICE – STRATEGIZE FOR BEST AND WORST CASE SCENARIOS

Reality of Pharmacy Standards

- Delays do not make AB1202 or <800> go away. <797> is real now (despite pending revisions), as are lawyers on the prowl
- Review and Prepare now - Can plan implementation steps
  - Gaps
  - Processes and training
  - Any renovations need to have flexibility built in
  - Plan external ventilation and other more onerous <800> type requirements but hold until required
- Find good resources – limited supply
  - Consulting - Standards, SOPs, training, monitoring, implementation
  - Construction (clean room, oncology, and CA knowledgable)

Advocate for logic and <797> and <800> transformation

Tips

- Separate your non hazardous and hazardous mixing, as well as storage
  - Three rooms where one is often now used. Subdividing is possible.
- No cardboard, wood, shedding fibers, cleanable ceilings walls and floors
- No makeup, fake nails, outside clothing
- No walkins or travel into/out of the space without appropriate PPE handling
- SOPs and enforcement and tracking
- Training and competency
- Look around every corner – anticipate
- Start early, no matter what the deadlines are
- Get good help (Consider staff mix and roles!!!!!)

Thank You, and Good Luck

Willis Triplett, PharmD

Comply797

317-626-6973

Willis.triplett@comply797.com