USP 797 Sterile Compounding Guidelines

Educational Briefing for Non-Pharmacy Leaders

What is USP 797?

United States Pharmacopeia (USP) is a scientific nonprofit which sets rules to ensure the quality of compounded medicines. The Food and Drug Administration (FDA) and State Boards of Pharmacy monitor compliance.

USP 797 is one of six chapters on compounding standards. It sets guidelines for compounded sterile preparations (CSPs) such as a dialysis solution or chemotherapy. The guidelines prevent microbial contaminations, excessive bacterial endotoxins, variability of intended strength, and use of ingredients of inappropriate quality.

USP 797 applies to all CSPs, anyone who prepares CSPs (including pharmacists, pharmacy technicians, physicians, and nurses), and all settings where CSPs are prepared (including hospitals, physician offices, infusion centers, and pharmacies).

Requirements

The most recent version of USP 797, published in 2016, has five major categories of requirements outlined below. USP is seeking public comments on the 797 rules and expects to publish a final rule in 2018.

Personnel Qualifications
- Quarterly gloved fingertip sampling, media fill testing and visual observation of garbing and hygiene for all personnel

Personal Protective Equipment
- Personal hygiene requirements
- Hand washing protocols
- Garb and glove requirements

Facilities
- Airborne contaminant protections
- Facility design requirements including guidance on creating easily cleanable facilities
- Biannual facility recertification

Environmental Monitoring
- Biannual nonviable airborne monitoring
- Viable air monitoring and surface sampling every month

Release Testing
- Physical inspection requirements
- Sterility testing for Category 2 CSPs based on BUD¹
- Endotoxin testing for CSPs prepared from nonsterile ingredients

Urgent Use Provision

CSPs can be prepared in less than ISO² Class 5 air quality—a facility requirement—only if preparation under complete USP 797 compliance would subject patient to risk due to delays. In those circumstances compounding must be a continuous process lasting under an hour and the CSP must be immediately administered to the patient.

What changes are proposed in the 2016 revision of USP 797?

- Renamed Microbial Risk Categories: Previously USP 797 categorized CSPs by risk level and had different requirements for different categories. The 2016 proposal collapses the previous categories into Category 1 and Category 2 CSPs. Category 1 CSPs have shorter beyond use dates (BUDs) and may be prepared in a segregated compounding area, while Category 2 CSPs have longer BUDs and must be prepared in a clean room. The change is designed to reflect the fact that no sterile compounding is “low risk.”
- Removed Hazardous Drug Handling Information: All references to handling hazardous drugs were replaced with direct references to USP 800 Hazardous Drugs-Handling in Healthcare Settings.
- New Requirements: The proposal introduces new requirements for maintaining master formulation and compounding records, use of isolators, and sterility testing of CSPs prepared in batches of less than 40.
- New Terminology: The proposal uses the term “in-use time” to refer to the period before conventionally manufactured products (used to make CSPs) expire.

¹) Beyond Use Date
²) International Standards Organization
**Timeline for Review of USP 797 Proposed Rule**

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<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>2004</td>
<td>USP 797 First Published</td>
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<tr>
<td>2008</td>
<td>First Revisions Published</td>
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<tr>
<td>2010</td>
<td>Revision Period Opens</td>
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<tr>
<td>2016</td>
<td>Public Review Process Ends</td>
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<tr>
<td>2018</td>
<td>Anticipated Publish Date</td>
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**How is USP 797 enforced?**

Enforcement of USP 797 falls mostly to state boards of pharmacy. The FDA can enforce USP guidelines, but usually only intervenes in cases of death or specific complaints. The costs of non-compliance range from citations and fines of up to $10,000 to revocation of an organization’s pharmaceutical license. Non-compliance also opens organizations up to civil litigation. As of early 2017, the Joint Commission is offering a Medication Compounding Certification for state boards of pharmacy. Any organization that compounds drugs is eligible to apply and the certificate lasts for two years.

**USP 797 Regulations by State**

- **Laws that directly reference USP 797**
- **Laws that regulate sterile compounding, but don’t specifically reference USP 797**
- **No current laws that reference USP 797 or sterile compounding**

**How does USP 797 impact provider organizations?**

**Clinical**
Guidelines apply to injections, ophthalmics, aqueous bronchial inhalations, baths and soaks for live organs and tissues, and internal body irrigations. Anyone who prepares CSPs is subject to USP 797 guidelines including pharmacists, pharmacy technicians, physicians, and nurses. It is essential to identify who in your organization is responsible for compounding.

**Financial**
In light of the above increase in required monthly testing, infusion centers should consider the cost benefit analysis of hiring an external environmental monitor or training someone internally. For organizations considering the Joint Commission's Medication Compounding Certification program, it is estimated to cost $10,000 for a two-year certification.

**Operational**
USP 797 guidelines apply to anyone who prepares CSPs. Providers must consider the staff time cost of increased employee testing and retesting. The biggest operational changes stem from USP 797 facility requirements. For future facility design, USP guidelines on laminar airflow systems, biological safety cabinets, isolators, segregated compounding area, and restricted access barrier systems should be taken into account.

**What do provider organizations need to do to prepare for USP 797?**
- Enlist pharmacy and compliance leaders to assess current level of compliance with the proposed rule
- Determine investments required to become compliant and work with health system leadership to secure resources
- Create protocols to ensure that any future facility planning incorporates and adheres to USP 797 guidelines

Source: Oncology Roundtable interviews and analysis, USP General Chapter <797> Pharmaceutical Compounding - Sterile Preparations.