

Training Module: Continuity and Emergency Preparedness

Focus Area: QM Section 5.11 (ISO 15189:2022 Clause 7.8)

1. Scope

This module applies to all laboratory personnel. It covers the identification of laboratory-specific risks (e.g., autoclave failure, reagent stockouts) and the execution of the contingency plans required to maintain patient testing services.

2. Introduction and Objectives

Microbiology results are often time-critical (e.g., blood cultures, CSF Gram stains). An emergency should not stop the flow of life-saving information.

- **Objective 1:** Recognize the difference between a minor technical glitch and a "Continuity Event."
- **Objective 2:** Master the logistics of the "Referral Pathway" during service interruptions.
- **Objective 3:** Understand the maintenance and activation of backup resources (Power, Water, Gases).

3. Structural Content

- **The Risk Register:** Understanding what can go wrong in a microbiology setting.
- **Redundancy Systems:** Generators, UPS, water reserves, and buffer stocks.
- **External Support:** Memorandums of Understanding (MOUs) with referral labs.
- **Recovery:** How to transition safely from "Emergency Mode" back to "Routine Mode."

4. Actionable Procedures

1. **Activation:** The step-by-step protocol for notifying the Head of Lab when a critical utility (e.g., Water/Electricity) fails.
2. **Triage:** Identifying "Tier 1" tests (e.g., Stat Gram Stains) that must be moved to a referral lab immediately vs. "Tier 2" tests that can be delayed.
3. **Sample Outsourcing:** The procedure for triple-packaging and transporting clinical samples to an alternative accredited laboratory.
4. **The "Safety Stock" Audit:** Monthly checking of the emergency reagent/consumable buffer to ensure nothing is expired.

5. Visual Aids

- **The Emergency Escalation Tree:** A visual map of who to call, in what order, for different types of failures.
- **Referral Map:** A diagram showing the primary and secondary referral laboratories for the NIHS Microbiology Lab.

6. Methodologies for Teaching & Training

- **Tabletop Simulation (Group Work):**
 - *Scenario:* "A major flood has cut off the hospital's water supply, and the backup tank is only 20% full. The autoclave cannot run."
 - *Task:* Groups must use Section 5.11 to decide: (A) Which tests to stop, (B) Which lab to call for help, and (C) How to notify the clinical wards.
- **On-Site Demonstration:** A physical "scavenger hunt" to locate the backup generator, the emergency water valve, and the folder containing Referral MOUs.
- **Lecture:** Review of the ISO 15189 requirements for "Testing the Plan" (Drills).

7. Competencies to Develop and Achieve

- **Crisis Navigation:** Can successfully locate and follow the "Emergency Referral SOP."
- **Resource Management:** Demonstrates how to check the CO2 levels for incubators and identify when to switch to backup cylinders.
- **Communication:** Can draft a clear, concise "Service Interruption Notice" for clinical users.

8. Assessment Tools

- **The "Go-Bag" Audit:** Trainee must assemble the necessary items for an emergency referral (request forms, transport media, triple-packaging materials) within 10 minutes.
- **Drill Observation:** Evaluation of staff performance during a scheduled "Power Failure Drill."

9. Guidelines for the Trainer

- **Realistic Stress:** During simulations, introduce "complications" (e.g., "The referral lab isn't answering the phone") to test staff adaptability.

- **Safety First:** Emphasize that while continuity of testing is important, staff physical safety during disasters (fire/flood) always takes priority.

10. Pre-Test and Post-Test

1. Which of the following is considered a "Continuity Event" in the lab? a) A single pipette is out of calibration. b) A total failure of the LIMS for more than 4 hours. c) A staff member is 15 minutes late for a shift.

2. What is an MOU (Memorandum of Understanding) used for in Section 5.11? a) To buy cheaper reagents. b) To document a formal agreement with another lab to process samples during an emergency. c) To hire temporary staff.

3. True/False: If the autoclave fails, the lab can continue to process and discard infectious waste in the normal bin.

4. What must be done after a "Tabletop Drill" or a real emergency? a) Nothing, as long as it's over. b) A "Post-Action Review" to identify gaps and update the plan. c) File a complaint against the utility company.

5. How often must the Continuity and Emergency Preparedness Plan be tested? a) Every 5 years. b) Only when an emergency happens. c) At least annually.

Practical Training Scenario for Walk-Through:

"The Main Incubator has suffered a board failure. 150 blood culture bottles and 40 CSF plates are currently inside. The repair will take 48 hours."

- **Walk-Through:** Staff use **5.11.3** to activate the "Emergency Referral Protocol." They contact the pre-arranged referral lab, organize temperature-controlled transport, and issue a memo to the ICU and Emergency Department regarding the temporary change in testing location.