Select Agents and Toxins:
What is the Role of the Clinical Laboratory?

by Peter Iwen, PhD, Associate Director, NPHL

"For violation of 42CFR Part 73, the Office of Inspector General may impose a penalty of not more than $250,000 in case of an individual, and not more than $500,000 in the case of any other person."

Times certainly have changed for clinical microbiology! In the past, the laboratory focus was on specimen handling, organism identification, and antimicrobial susceptibility testing. Now in addition to these, other considerations have emerged as evident by the new terms now used by the microbiologist such as security risk assessment, bioterrorism, biosafety, select agents and toxins, civil money penalties, EA-101 form, and such. What does all this mean for the average clinical microbiologist? Is my laboratory in compliance with federal mandates? Presented is a brief overview to help answer these questions.

Select agents and toxins are defined as "biological agents or toxins deemed a threat to human, animal or plant health and to animal or plant products." Effective on February 7, 2003, a new federal law was established to regulate the possession, use, and transfer of these agents within the United States. This regulation, referred to as 42 CFR Part 73 (hereafter called Part 73), implements the provisions set forth in the Public Health Security and Bioterrorism Preparedness Act of 2002, which became a federal law on July 12, 2002.

The law affects academic institutions, biomedical centers, commercial manufacturing facilities, research facilities, and yes, clinical and diagnostic laboratories. The major focus of this law is the requirement for registration of a facility that possesses, uses, or transfers a select agent or toxin. Fortunately, for the most part clinical laboratories are exempt from many of the provisions of Part 73, including the need for registration. This exemption applies when the only activities conducted by the laboratory "concern select agents or toxins that are contained in specimens or in isolates from specimens presented for diagnosis, verification, or proficiency testing" (**Table 1**). Although exempt, all clinical laboratories must however, adhere to the reporting and disposal requirements as described in the Part 73 law. These requirements state that, (1) upon identification of a select agent or toxin as the result of diagnosis or verification the result must be reported immediately to the HHS Secretary and to the county and/or state health department, (2) the specimen and isolate containing a select agent or toxin must be transferred to a registered facility or destroyed on-site by a method sufficient to cause inactivation, and (3) a record of the identification and transfer or destruction must be prepared and filed. An abbreviated procedure for the reporting and transfer of a select agent or toxin is described in **Table 2**. To complete a transfer of a select agent or toxin, two CDC forms are required, the CDC form 0.1318 and the CDC form EA-101, copies of these forms are available on the CDC web site (http://www.cdc.gov/od/sap/). The 0.1318 form is used to record that the materials have been transferred or destroyed and the EA-101 form records the transfer to a registered facility. Prior to confirmation of a select agent or toxin such as when a sample (isolate or specimen) is sent to a reference laboratory for diagnosis or verification purposes only, neither an EA-101 form nor 0.1318 form is required. If the reference laboratory identifies a select agent or toxin, the submitting laboratory is immediately notified and it is at this point that the requirements for reporting and transferring the isolate and specimen are implemented.

The NPHL is a select agent and toxin registered facility and will act as the repository for all select agents and specimens on behalf of the state. The Nebraska Health and Human Services System requests that laboratories do not destroy these materials, but they submit these to the NPHL. For additional guidance and/or to request transfer information, contact Dr. Peter Iwen, Responsible Facility Official for the Select Agent Program, at 402-559-7774.

Table 1. Select agents and toxins that are most likely to be detected in the clinical microbiology laboratory.*

Bacillus anthracis	*Burkholderia pseudomallei*
Brucella abortus	*C. botulinum,* neurotoxin producing
Brucella melitensis	*Francisella tularensis*
Brucella suis	*Coccidioides immitis*
Burkholderia mallei	*Yersinia pestis*

*A complete list of select agents and toxins can be found on the CDC web site (http://www.cdc.gov/od/sap/).

Table 2. Laboratory procedure for the reporting and transfer of select agents and toxins identified in Nebraska laboratories as a result of diagnostic or verification testing.

1. **Report results** **(immediately)**

Douglas County Health Dept.	402-444-7214	(if in Douglas County)
Lincoln-Lancaster County Health Dept.	402-441-8053	(if in Lancaster County)
Nebraska Health and Humans Services	402-471-2937	(all other counties)
U.S. Health and Human Services (CDC)	404-498-2255	(all counties)

2. **Prepare a record of the identification on CDC Form 0.1318** **(within 7 days after ID)**
-to fill out Section 5 of the form contact the NPHL
-make two copies of the completed form (one for lab records and one for the NPHL)
-submit the original form to:
CDC, Select Agent Program, 1600 Clifton Road NE, Mailstop E-79, Atlanta, GA 30333

3. **Prepare a record of the transfer on CDC Form EA-101** **(within 7 days after ID)**
-to fill out Sections 1 and 2 of the form contact the NPHL
-submit the original form to the NPHL

4. **Complete the transfer of materials to the NPHL** **(as soon as possible)**
-follow protocols for the shipment of infectious substances
-include a copy of the CDC Form 0.1318 and the original EA-101 form with the shipment

5. **Filing of the EA-101 form** **(after receipt of materials)**
-personnel at the NPHL will send a copy of the completed EA-101 form to both the sender and the CDC