

BIOTHREAT PREPAREDNESS TRAINING FOR SENTINEL LABORATORIES - *Brucella* spp.

Course Number

P.A.C.E.® Course Number: 288-012-17

FL Course Number: 20-515740

Description

This module has been developed to provide clinical laboratory scientists with information about the laboratory identification of *Brucella* species.

The goal is to assist clinical laboratory scientists in better recognizing potential biothreat agents they might encounter during routine laboratory work-ups of sputum, blood and aspirate/biopsy specimens.

Laboratory managers may consider using this course:

- To assess staff competency in performing laboratory procedures accurately, and
- To determine if staff are referring specimens for test confirmations correctly.

Objectives

At the conclusion of this program, the participant will be able to:

- Describe laboratory tests for identification of *Brucella* spp.
- Describe how to rule out or refer isolates for *Brucella* spp. using standardized laboratory protocols.
- Discuss the role of the sentinel laboratory in bioterrorism response.

Registration - Free Registration

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

Continuing Education

The Centers for Disease Control and Prevention Laboratory Training Team is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for **1.5** contact hour.

This course has been approved for **1.5** contact hour in the category Microbiology/Mycology/Parasitology, for Florida Laboratory Licensees.

Special Needs

Course content is closed captioned where applicable and optimized for a screen reader.

For a complete list of courses, visit www.cdc.gov/labtraining

BIOTHREAT PREPAREDNESS TRAINING FOR SENTINEL LABORATORIES - *Burkholderia* spp.

Course Number

P.A.C.E.® Course Number: 288-013-17

FL Course Number: 20-515742

Description

This module has been developed to provide clinical laboratory scientists with information about the laboratory identification of *Burkholderia* spp.

The goal is to assist clinical laboratory scientists in better recognizing potential bioterror agents they might encounter during routine laboratory work-ups of sputum, blood and aspirate/biopsy specimens.

Laboratory managers may consider using this course:

- To assess staff competency in performing laboratory procedures accurately, and
- To determine if staff are referring specimens for test confirmations correctly.

Objectives

At the conclusion of this program, the participant will be able to:

- Summarize the basic epidemiology and ecology of *Burkholderia* spp.
- List important aspects of biosafety in working with *Burkholderia* spp. in the laboratory.
- Outline the role of the LRN sentinel laboratory in the detection of *Burkholderia* spp.
- Apply various laboratory tests that are used to presumptively identify *Burkholderia* spp.
- Use sentinel laboratory protocols to Rule Out or Refer isolates for the identification of *Burkholderia* spp.

Registration - Free Registration

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
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Continuing Education

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This course has been approved for **1.0** contact hour in the category Microbiology/Mycology/Parasitology, for Florida Laboratory Licensees.

Special Needs

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For a complete list of courses, visit www.cdc.gov/labtraining

BIOTHREAT PREPAREDNESS TRAINING FOR SENTINEL LABORATORIES - *Bacillus anthracis*

Course Number

P.A.C.E.® Course Number: 288-014-17

FL Course Number: 20-515744

Description

This module has been developed to provide clinical laboratory scientists with information about the laboratory identification of *Bacillus anthracis*.

The goal is to assist clinical laboratory scientists in better recognizing potential bioterror agents they might encounter during routine laboratory work-ups of sputum, blood and aspirate/biopsy specimens.

Laboratory managers may consider using this course:

- To assess staff competency in performing laboratory procedures accurately, and
- To determine if staff are referring specimens for test confirmations correctly.

Objectives

At the conclusion of this program, the participant will be able to:

- Describe laboratory tests for presumptive identification of *Bacillus anthracis*.
- Describe how to rule out or refer presumptive organisms for *B. anthracis*.
- Discuss the role of the LRN sentinel laboratory in detection of *B. anthracis*.

Registration - Free Registration

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
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- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

Continuing Education

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This course has been approved for **1.5** contact hour in the category Microbiology/Mycology/Parasitology, for Florida Laboratory Licensees.

Special Needs

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For a complete list of courses, visit www.cdc.gov/labtraining

BIOTHREAT PREPAREDNESS TRAINING FOR SENTINEL LABORATORIES - *Francisella tularensis*

Course Number

P.A.C.E.® Course Number: 288-016-17

FL Course Number: 20-515746

Description

This module has been developed to provide clinical laboratory scientists with information about the laboratory identification of *Francisella tularensis*.

The goal is to assist clinical laboratory scientists in better recognizing potential biothreat agents they might encounter during routine laboratory work-ups of sputum, blood and aspirate/biopsy specimens.

Laboratory managers may consider using this course:

- To assess staff competency in performing laboratory procedures accurately, and
- To determine if staff are referring specimens for test confirmations correctly.

Objectives

At the conclusion of this program, the participant will be able to:

- Describe laboratory tests for presumptive identification of *Francisella tularensis*.
- Describe how to rule out or refer presumptive organisms for *F. tularensis*.
- Discuss the role of the sentinel laboratory in detection of *F. tularensis*.
- Describe the basic epidemiology and ecology of *F. tularensis* in the U.S. including animal reservoirs, vectors, and transmission cycles.

Registration - Free Registration

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
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- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

Continuing Education

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This course has been approved for **1.5** contact hour in the category Microbiology/Mycology/Parasitology, for Florida Laboratory Licensees.

Special Needs

Course content is closed captioned where applicable and optimized for a screen reader.

For a complete list of courses, visit www.cdc.gov/labtraining

BIOTHREAT PREPAREDNESS TRAINING FOR SENTINEL LABORATORIES - *Yersinia pestis*

Course Number

P.A.C.E.® Course Number: 288-015-17

FL Course Number: 20-515736

Description

This module has been developed to provide clinical laboratory scientists with information about the laboratory identification of *Yersinia pestis*.

The goal is to assist clinical laboratory scientists in better recognizing potential biothreat agents they might encounter during routine laboratory work-ups of sputum, blood and aspirate/biopsy specimens.

Laboratory managers may consider using this course:

- To assess staff competency in performing laboratory procedures accurately, and
- To determine if staff are referring specimens for test confirmations correctly.

Objectives

At the conclusion of this program, the participant will be able to:

- Summarize the basic epidemiology and ecology of *Yersinia pestis*.
- List important aspects of biosafety in working with *Y. pestis* in the laboratory.
- Outline the role of the LRN sentinel laboratory in the detection of *Y. pestis*.
- Apply various laboratory tests that are used to presumptively identify *Y. pestis*.
- Use sentinel laboratory protocols to Rule Out or Refer isolates for the identification of *Y. pestis*.

Registration - Free Registration

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

Continuing Education

The Centers for Disease Control and Prevention Laboratory Training Team is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for **1.0** contact hour.

This course has been approved for **1.0** contact hour in the category Microbiology/Mycology/Parasitology, for Florida Laboratory Licensees.

Special Needs

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For a complete list of courses, visit www.cdc.gov/labtraining



Basic Culture Media

Basic Microbiology Curriculum

Online Course

Sponsored by the Centers for Disease Control and Prevention Laboratory Training Team

DESCRIPTION

This eLearning course is designed to familiarize laboratorians with basic culture media used in the microbiology laboratory. Laboratorians will review and contrast the various culture medias, describe the process of streaking a plate, identify types of colonial morphology and explain commonly encountered problems that occur with culture media.

AUDIENCE

New or existing public health laboratorians, who have a science background, are entering or reentering the microbiology field and who need training in routine basic culture media essential for performing job requirements.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

- Distinguish enrichment, differential, and selective media.
- Review the principles of the most commonly used media.
- Contrast various culture media.
- Describe the steps of streaking a plate.
- Interpret results on various culture media.
- Recognize the different types of colonial morphology.
- Identify commonly encountered problems with basic culture media.

REGISTRATION

FREE REGISTRATION

- Register online at www.cdc.gov/labtraining
- If you have difficulty with the online registration process, please email labtraining@cdc.gov

CONTINUING EDUCATION

The Centers for Disease Control and Prevention Laboratory Training Branch is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for **1.0** contact hours.

This course has been approved for **1.0** contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

SPECIAL NEEDS

Course content is closed captioned where applicable and optimized for a screen reader.

P.A.C.E. Course Number: 288-008-18

FL Course Number: 20-435308

BASIC MICROSCOPY

BASIC MICROBIOLOGY CURRICULUM

PROVIDED BY: CDC LABORATORY TRAINING AND SERVICES

AN ONLINE LEARNING/ELEARNING COURSE
AVAILABLE AT WWW.CDC.TRAIN.ORG



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

DESCRIPTION

To function effectively in a microbiology laboratory, laboratorians must have a basic knowledge and understanding of the components, setup, procedures, and care and maintenance of a bright field (compound) microscope. This eLearning course will instruct participants on the importance of a correctly setup bright field microscope for the identification of microorganisms.

AUDIENCE

This basic level course is designed for new or existing public health laboratorians, who have a science background, are entering or reentering the microbiology field and who need training in basic microscopy principles and techniques essential for performing job requirements.

SPECIAL NEEDS

Course content is closed captioned where applicable and optimized for a screen reader.

FREE REGISTRATION

- Register online at www.cdc.gov/labtraining
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.org or call (404) 498-6022

CONTINUING EDUCATION

The Centers for Disease Control and Prevention Laboratory Training and Services Branch is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. Each course module is approved for 1.0 contact hours.

This course has been approved for 1.0 contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

- Identify the major components of the microscope and their function.
- Identify how to maintain a microscope.
- Discuss the role of Kohler illumination in microscopy.
- Describe the process to correctly focus on the appropriate field of view.
- Use the ocular micrometer to measure an object under the microscope.
- Demonstrate the ability to troubleshoot encountered problems with the microscope.

CE INFORMATION

P.A.C.E.™ Course Number: 288-019-17

FL Course Number: 20-434651

For a complete list of courses, visit www.cdc.gov/labtraining.

Routine Microscopy Procedures

Basic Microbiology Curriculum

SPONSORED BY THE CENTERS FOR DISEASE CONTROL AND
PREVENTION LABORATORY TRAINING BRANCH

AN ONLINE LEARNING/ELEARNING COURSE
AVAILABLE AT WWW.CDC.TRAIN.ORG



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

DESCRIPTION

This eLearning course is designed to familiarize laboratorians with routine microscopy procedures used in the microbiology laboratory. Laboratorians will explore the required steps for a smear preparation as well as the requirements for preparing and interpreting the results of Gram stains, wet mounts, potassium hydroxide (KOH), and India Ink procedures.

AUDIENCE

New or existing public health laboratorians, who have a science background, are entering or reentering the microbiology field and who need training in routine microscopy techniques essential for performing job requirements.

SPECIAL NEEDS

Course content is closed captioned where applicable and optimized for a screen reader.

FREE REGISTRATION

- Register online at www.cdc.gov/labtraining
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.org or call (404) 498-6022

CE INFORMATION

P.A.C.E.™ Course Number: 288-020-17

FL Course Number: 20-434648

CONTINUING EDUCATION

The Centers for Disease Control and Prevention Laboratory Training Branch is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for 1.5 contact hours.

This course has been approved for 1.5 contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

At the conclusion of this program, the participant will be able to:

- Outline the steps of preparing a smear.
- Express the purpose of the Gram stain procedure.
- Identify the types of reagents used in the Gram stain procedure.
- Sequence the steps in the Gram stain procedure.
- Interpret the results seen in the bacterial cells, with the effects of the various reagents during the Gram stain procedure.
- Outline the potassium hydroxide (KOH) procedure and its uses.
- Identify how to prepare and interpret a wet mount.
- Identify the steps and results obtained in the India ink procedure.
- Identify and resolve commonly encountered problems during routine microscopy procedures.

For a complete list of courses, visit www.cdc.gov/labtraining.



Biochemicals and Gram Positive Organism ID

Basic Microbiology Curriculum

Sponsored by the Centers for Disease Control and Prevention, Division of Laboratory Systems, Laboratory Training and Services Branch

| DESCRIPTION |

This eLearning course is designed to familiarize laboratorians with how to read a Gram stain, the colonial characteristics and biochemical tests used to identify Gram positive microorganisms as well as commonly used testing algorithms. The course will only cover aerobic microorganisms, those that grow in the presence of oxygen.

| AUDIENCE |

New or existing public health and clinical laboratorians who have a science background, are entering or reentering the microbiology field and who need training in biochemical test methods and Gram positive microorganism identification essential for performing job requirements.

| OBJECTIVES |

At the conclusion of this program, the participant will be able to:

- Identify different types of bacterial morphology seen on a Gram stain
- Identify different types of colonial characteristics
- Use flowcharts and identification charts to identify some common aerobic Gram positive microorganisms
- Associate various biochemical tests with their correct applications
- Interpret the results of biochemical methods

| REGISTRATION |

FREE REGISTRATION

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

| CONTINUING EDUCATION |

The Centers for Disease Control and Prevention Laboratory Training Branch is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for **1.5** contact hours.

This course has been approved for **1.5** contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

| SPECIAL NEEDS |

Course content is closed captioned where applicable and optimized for a screen reader.

P.A.C.E.® Course Number: 288-020-18

FL Course Number: 20-541331



Biochemicals and Gram Negative Organism ID

Basic Microbiology Curriculum

Sponsored by Centers for Disease Control and Prevention Laboratory Training and Services

Branch, Division of Laboratory Systems

| DESCRIPTION |

This eLearning course is designed to familiarize laboratorians with how to read a Gram stain, colonial characteristics, and biochemical tests used to identify Gram negative microorganisms as well as commonly used testing algorithms. The course will only cover aerobic microorganisms, those that grow in the presence of oxygen.

| AUDIENCE |

New or existing public health and clinical laboratorians, who have a science background, are entering or reentering the microbiology field and who need training in biochemical test methods and Gram negative microorganism identification essential for performing job requirements.

| OBJECTIVES |

At the conclusion of this program, the participant will be able to:

- Identify different types of bacterial morphology seen on a Gram stain
- Identify different types of colonial characteristics
- Use flowcharts and identification charts to identify some common aerobic Gram negative microorganisms
- Associate various biochemical tests with their correct applications
- Interpret the results of biochemical methods

| REGISTRATION |

FREE REGISTRATION

- Locate the course online at www.cdc.gov/labtraining
- Follow the link to register for the course in TRAIN
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

| CONTINUING EDUCATION |

The Centers for Disease Control and Prevention Laboratory Training Branch is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for **1.0** contact hours.

This course has been approved for **1.0** contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

| SPECIAL NEEDS |

Course content is closed captioned where applicable and optimized for a screen reader.

P.A.C.E.® Course Number: 288-021-18

FL Course Number: 20-446817'

MASTER: Antimicrobial Susceptibility Testing Methods

SPONSORED BY THE CENTERS FOR DISEASE CONTROL AND PREVENTION OFFICE OF ANTIMICROBIAL RESISTANCE

AN ONLINE LEARNING/ELEARNING COURSE
AVAILABLE AT WWW.CDC.TRAIN.ORG



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

DESCRIPTION

This course provides a detailed overview of antimicrobial susceptibility testing methods including reference methods such as those described by the Clinical and Laboratory Standards Institute (CLSI) and commercial test systems. It focuses on technical and regulatory considerations for any method of medical laboratory antimicrobial susceptibility testing. The course provides essential information for those new to antimicrobial susceptibility testing and an important refresher for laboratory professionals with more experience.

AUDIENCE

Laboratory professionals who have knowledge of basic medical microbiology and who perform antimicrobial susceptibility testing or are considering adding it to the laboratory's testing menu.

SPECIAL NEEDS

Course content is closed captioned where applicable and optimized for a screen reader.

FREE REGISTRATION

- Register online at www.cdc.gov/labtraining
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.org or call (404) 498-6022

CONTINUING EDUCATION

The Centers for Disease Control and Prevention Laboratory Training Branch is approved as a provider of continuing education programs in the clinical laboratory sciences by the ASCLS P.A.C.E.® Program. This course is approved for 1.5 contact hours.

This course has been approved for 1.5 contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

- Identify the steps required to perform the clinical and Laboratory Standard Institute (CLSI) disk diffusion and Minimal Inhibitory Concentration (MIC) reference procedures.
- Identify the key steps that must be modified when performing disk diffusion or MIC procedures for fastidious organisms.
- Recognize CLSI's standards on commercial antimicrobial susceptibility test systems.
- Review the importance and limitations of commercial antimicrobial susceptibility test systems.

CE INFORMATION

P.A.C.E.™ Course Number: 288-023-17

FL Course Number: 20-413202

For a complete list of courses, visit www.cdc.gov/labtraining.



MASTER: Antimicrobial Susceptibility CLSI Standards

Sponsored by the Centers for Disease Control and Prevention Office of Antimicrobial Resistance

DESCRIPTION

This course provides a detailed overview of the Clinical and Laboratory Standards Institute (CLSI) standards for antimicrobial susceptibility testing of bacteria isolated from clinical specimens. It focuses on the supplemental tables that correlate with the standards and the interpretive criteria for antimicrobials recommended for testing a variety of bacteria. The course provides essential information for those new to antimicrobial susceptibility testing and serves as an important refresher for experienced laboratory professionals.

AUDIENCE

Laboratory professionals who have knowledge of basic medical microbiology and who perform antimicrobial susceptibility testing or are considering adding it to the laboratory's testing menu.

OBJECTIVES

At the conclusion of this program, the participant will be able to:

- Recognize the role of CLSI in developing standards for antimicrobial susceptibility testing of bacteria isolated from clinical specimens.
- Identify CLSI standards for antimicrobial susceptibility testing of bacteria isolated from clinical specimens.
- Given a particular organism, select antimicrobial agents appropriate for testing and reporting from the correct CLSI table.
- Outline a strategy for selective reporting of antimicrobial agents using CLSI tables.

REGISTRATION

FREE REGISTRATION

- Register online at www.cdc.gov/labtraining
- If you have difficulty with the online registration process, please email labtraining@cdc.gov
- For additional program information, email labtraining@cdc.gov or call (404) 498-6022

CONTINUING EDUCATION

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This course has been approved for **1.0** contact hours in the category of Microbiology/Mycology/Parasitology for Florida Laboratory Licensees.

SPECIAL NEEDS

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P.A.C.E.[®] Course Number: 288-025-17

FL Course Number: 20-454342