

CLINICAL PATHOLOGY CONTENT SPECIFICATIONS MEDICAL MICROBIOLOGY

I. Specimen Collection and Evaluation for Adequacy

Quality control and quality assurance practices

importance of imposing screening criteria on sputum and tracheal aspirate specimens submitted for bacterial culture.

Specimen contamination

II. Techniques and Interpretation of Tests Used in Core Laboratory Practice

Strengths and limitations of rapid immunoassays (i.e. card-type lateral flow EIAs) for the detection of Influenza A, Influenza B, and Respiratory Syncytial viruses

Impact on the PPV of these tests when they are used when these respiratory viruses are not circulating in the community.

Methods and method interferences- Basic principles

PCR/RT-PCR

FISH

HPLC

ELISA

Spectrophotometric analysis

III. Infectious Disease Serology

HCV serology interpretation using strength of reactivity

Anti-C-9 peptide for *Borrelia burgdorferi*

Treponema-specific EIA screen

Western blot for *Borrelia burgdorferi*

Genetic sub classification of virus to predict drug responsiveness

(e.g. Hepatitis C virus genotyping to predict responsiveness of a patient to interferon therapy)

West Nile Virus serology a

IV. Laboratory Role in Use of Antimicrobial Agents

Antifungal susceptibility testing

Non-tuberculous Mycobacteria

New agents and their spectrum of activity

The detection and reporting of emerging types of antibiotic resistance in bacteria

V. Infection Control Practices (monitoring, surveillance, reporting)

MRSA screening

C. difficile

VI. Molecular Microbiology

Comprehensive viral screens by amplification techniques replacing viral cultures
Use of nucleic acid detection methods for infectious agents (e.g. chlamydia, GC, hepatitis C, HIV, etc.)

Cervical cancer as an infectious disease and primary screening for disease risk with papilloma virus detection methods

Strep testing in pregnancy

VII. New and Emerging Infectious Diseases

Diagnosis of tick-borne infections (e.g. Lyme, ehrlichiosis) using serology, blood smears, and histology

Diagnosis of mosquito-borne infections (malaria, west Nile, Dengue) using serology and blood smears

Hepatitis C serology, PCR, histology

Antimicrobial susceptibility/resistance testing

E. coli 0157:H7

Emerging respiratory pathogens -- avian influenza, including pandemic influenza plans

VIII. Bioterrorism

Laboratory preparedness

Referral mechanisms for suspect microbes

IX. Laboratory Operations and Administration

Updates to Clinical Laboratory Standards Institute guidelines

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