

Laboratory-based Surveillance of Communicable Diseases

This report examines a wide range of important bacterial and viral diseases, paying particular attention to the laboratory procedures commonly practiced for identifying and reporting on their respective causative microbial agents. Our findings provides a comprehensive collection of information related to the standardization of laboratory testing protocols and methods as well as disease-specific laboratory-based reporting requirements. The information gathered will be useful in the creation of a laboratory companion to the newly revised Control of Communicable Diseases Manual. (Published by the American Public Health Association) Our research was extracted from numerous sources including the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), and the Mayo Clinic as well as other resources within the microbiology field. Standard protocols for reporting and referring cases of communicable disease have been inconsistent among states in comparison to the guidelines from CDC. We found a variety of testing requirements and different "gold standards" for testing among the majority of etiological agents studied. Some major pathogens such as *Escherichia coli* and the influenza virus had well established procedures for laboratory confirmation; however, less common agents did not have as well-defined laboratory protocols. This research encompassed an in-depth analysis of 33 viral and 47 bacterial diseases and their respective causative agents. The challenges in gathering information from multiple sources has confirmed the need for a comprehensive document for use by labaortorians and others involved in communicable disease prevention and control. We found that we were able to organize this information in a way that would be beneficial for public health. Establishing standardized protocols for the laboratory-based surveillance of communicable diseases is an essential component of any comprehensive infectious disease surveillance system, whether at the state, national or international level.