



Role of Clinical Microbiology Laboratory for Prevention of Infection in Hospital Settings: Bangladesh Perspective

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Clinical microbiology is an important medical sector that plays a key role in infection prevention and control practices in the premises of hospital settings. Different cumulative data from the clinical microbiology laboratory is very useful and these data are the most common method for identifying healthcare-associated infections. The basic role of the clinical microbiology laboratory is to deliver different reports in several clinical tests. Furthermore, it also plays a great role in the quick and accurate detection of pathogens with their antimicrobial susceptibility and resistance patterns. A basic understanding of microbiology will allow the medical microbiologist to recognize their role as an Infection prevention and control (IPC) person which can help break the cycle of transmission, prevent healthcare-associated infections and reduce antimicrobial resistance.

Clinical microbiology laboratories are available in different public and private hospitals in Bangladesh which are staffed by clinical microbiologists and they are clinically well-trained medical personnel. Bangladesh is a densely populated country. Several medical microbiologists are working in the country. The responsibilities of a clinical microbiology laboratory cover many different aspects of infection control which is very essential for the management of the patients on the hospital premises. They include the detection of outbreaks of hospital-acquired infections, screening for multi-resistant organisms, advice to clinicians about disinfection, sterilization and isolation procedures, and the rational use of antibiotics. Clinical microbiologists work closely with infection control nurses as well as other staff who are engaged in this

important work. Together they form the infection control team and this is the executive part of the local infection control committee. The infection control team is also the main body responsible for the development of guidelines, which are approved by the regional infection control committee.

The microbiology laboratories will also work in close contact with the National level for infection and prevention. This current concept of infection prevention and control has been established 25 years back. The main aim at that time was to decentralize infection control and establish facilities as close to clinicians and patients as practically possible. This has solved most basic problems related to infection control, and compliance by clinicians has been fairly good. However, the present organization will not meet future requirements for standardization and documentation of quality. Currently, a national standard for infection control has been instructed by the Communicable Disease Control of Directorate General of Health Services of The Ministry of Health and Family Welfare, Dhaka, Bangladesh. Infection control should be maintained as an integrated part of clinical microbiology.

The healthcare-associated infections create an immense health problem and a major cause of death worldwide with wide range of complications among healthcare workers, patients, and visitors. And these complications are very expensive from the humanitarian and economic aspects and cause increase in healthcare resources waste as increase medications and medical supplies consumption, intensive uses of diagnostic laboratory services, sharp rising hospital's admission rates and other harmful effects on patient's life. Microbiology laboratories are the first lines of defense for detection of new antibiotic resistance, outbreaks of foodborne infection, and a possible bioterrorism event. Maintaining high-quality clinical microbiology laboratories on the site of the institution is the best approach for managing today's problems of

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emerging infectious diseases and antimicrobial agent resistance by providing good patient care outcomes that actually save money.

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