MERCURY

Public Health Strategies for Communicable Disease Prevention and Control

22 – 26 November 2026
Cairo (Egypt)



Dubai - UAE: +971 4 450 5697
Istanbul - Türkiye: +90 539 599 1206
Amman - Jordan: +962 79 712 3347

Public Health Strategies for Communicable Disease Prevention and Control

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Introduction

Public health systems are central to protecting populations from the spread and impact of infectious diseases. The Public Health Strategies for Communicable Disease Prevention and Control course provides a theoretical foundation for understanding how to manage communicable diseases effectively, from their emergence and spread to their population-level management. It explores structured public health disease-control strategies that support prevention, early detection, and coordinated responses across health systems.

This Public Health Strategies for Communicable Disease Prevention and Control program emphasizes the integration of epidemiology, disease surveillance and control, policy development, and public health preparedness and disease prevention. Participants examine global and national approaches to communicable disease prevention, including routine control programs and emergency disease response.

The Public Health Strategies for Communicable Disease Prevention and Control training addresses public health risk assessment for communicable diseases in diverse settings. Through structured learning, participants gain insight into the challenges and solutions of global communicable disease control. It strengthens professional capacity in infectious disease prevention and control within complex public health environments.

Targeted Groups

This Public Health Strategies for Communicable Disease Prevention and Control training targets professionals seeking knowledge and skills:

- Public health officers are involved in disease prevention planning.
- Epidemiologists working in surveillance and outbreak analysis.
- Infection prevention and public health professionals in healthcare systems.
- Physicians engaged in community and primary healthcare services.
- Health policy makers are responsible for public health disease control strategies.
- Environmental health specialists focus on sanitation and hygiene.
- Community health workers supporting communicable disease mitigation strategies.
- Emergency preparedness and response coordinators.
- Professionals working in global and regional health organizations.
- Public health educators and disease prevention professionals.

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Course Objectives

Participants will achieve the following objectives by completing the Public Health Strategies for Communicable Disease Prevention and Control course:

- Understand the principles of communicable disease prevention and control.
- Identify determinants influencing infectious disease transmission patterns.
- Analyze public health epidemiology and disease control frameworks.
- Apply disease surveillance and control methods for early detection.
- Interpret surveillance data to support timely public health interventions.
- Design population-based communicable disease control strategies.
- Evaluate infection prevention and public health measures.
- Develop public health risk assessment approaches for communicable diseases.
- Examine vaccination and immunization strategies for disease prevention.
- Assess public health emergency disease response mechanisms.
- Integrate behavioral and social interventions into prevention programs.
- Formulate public health policy for communicable disease control.
- Strengthen preparedness planning for disease outbreak prevention and control.
- Analyze global communicable disease control initiatives and coordination.
- Enhance decision-making for sustainable public health disease prevention.

Targeted Competencies

Participants will gain the following competencies during the Public Health Strategies for Communicable Disease Prevention and Control program:

- Application of communicable disease prevention frameworks.
- Interpretation of disease surveillance and control indicators.
- Strategic planning for public health communicable disease management.
- Risk assessment for infectious disease prevention and control.
- Policy analysis related to public health disease control strategies.
- Design of population-level prevention and mitigation strategies.
- Coordination of public health emergency disease response activities.
- Evaluation of infection prevention and public health programs.
- Communication of public health risks to diverse populations.
- Integration of global standards into local disease control planning.

Studying Scenarios

In this Public Health Strategies for Communicable Disease Prevention and Control training, participants develop skills through the following scenarios:

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- Analysis of communicable disease outbreaks using surveillance data.
- Evaluation of early warning systems for disease outbreak prevention and control.
- Assessment of vaccination strategies during public health emergencies.
- Simulation of public health emergency disease response coordination.
- Review of infection prevention failures in healthcare and community settings.
- Policy decision-making during emerging infectious disease threats.
- Planning public health preparedness and disease prevention initiatives.
- Managing cross-border disease transmission risks.
- Addressing misinformation during infectious disease emergencies.

Course Content

Unit 1: Foundations of Communicable Disease Prevention and Control

- Define communicable diseases and infectious disease transmission mechanisms.
- Differentiate between endemic, epidemic, and pandemic disease patterns.
- Examine the global burden of communicable diseases across regions.
- Analyze social, economic, and environmental determinants of disease spread.
- Explain the host, agent, and environment interaction in disease transmission.
- Describe primary prevention strategies for communicable disease prevention.
- Outline secondary prevention through screening and early detection.
- Explain how tertiary prevention reduces disease complications.
- Examine the role of public health systems in disease prevention and control.
- Introduce global frameworks guiding infectious disease prevention and control.

Unit 2: Disease Surveillance and Control Systems

- Define disease surveillance and its role in public health epidemiology and disease control.
- Identify passive, active, sentinel, and syndromic surveillance systems.
- Explain standardized case definitions and reporting mechanisms.
- Analyze surveillance indicators used for early outbreak detection.
- Examine laboratory-based surveillance for disease confirmation.
- Understand data quality, accuracy, and reporting timeliness.
- Assess digital surveillance tools and electronic reporting systems.
- Explore community-based disease surveillance models.
- Address challenges in surveillance during public health emergencies.
- Interpret surveillance findings to guide communicable disease control strategies.

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Unit 3: Communicable Disease Prevention Interventions

- Identify population-level communicable disease prevention approaches.
- Examine vaccination programs and immunization coverage strategies.
- Analyze infection prevention and public health measures in communities.
- Evaluate hygiene, sanitation, and environmental health interventions.
- Assess vector control strategies for disease mitigation.
- Design health promotion campaigns for behavior change.
- Integrate surveillance findings into prevention planning.
- Examine targeted interventions for high-risk populations.
- Review monitoring tools for prevention program effectiveness.
- Strengthen the sustainability of public health disease prevention initiatives.

Unit 4: Disease Outbreak Prevention and Control

- Define the principles of disease outbreak prevention and control.
- Explain the steps in outbreak investigation and confirmation.
- Analyze contact tracing and case management strategies.
- Plan isolation, quarantine, and containment measures.
- Coordinate multi-sectoral response to infectious disease outbreaks.
- Examine public health emergency disease response structures.
- Assess resource mobilization during outbreak situations.
- Evaluate communication strategies during outbreaks.
- Document lessons learned from outbreak response activities.
- Improve preparedness planning for future public health threats.

Unit 5: Public Health Policy, Preparedness, and Global Perspectives

- Examine public health policy for communicable disease control.
- Analyze national preparedness and response planning frameworks.
- Review the International Health Regulations and compliance requirements.
- Assess global mechanisms for coordinating communicable disease control.
- Examine ethical and legal considerations in disease control.
- Evaluate risk communication strategies and public trust building.
- Explore innovation in infectious disease prevention and control.
- Assess the impacts of climate change on communicable disease patterns.
- Promote equity in global disease prevention strategies.
- Strengthen leadership in public health disease prevention professional roles.

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Final Insights & Key Takeaways

Effective prevention of communicable diseases depends on structured public health strategies, strong surveillance systems, and coordinated response mechanisms. The Public Health Strategies for Communicable Disease Prevention and Control course provides participants with an advanced theoretical understanding aligned with global best practices. It strengthens professional capacity in infectious disease prevention and control across diverse public health settings. These competencies contribute to resilient health systems and improved population health outcomes.