Vaccine Epidemiology Training Course

Professional Development Training Course Outline

Category	Public Health	**Duration**	5 Days
Base Fee	$1,500 USD	**Delivery Mode**	Online / On-site Hybrid

Course Introduction

Vaccine Epidemiology Training Course is designed to equip public health professionals, healthcare workers, researchers, epidemiologists, immunization officers, and policy leaders with advanced knowledge and practical skills in vaccine surveillance, immunization data analytics, outbreak investigation, vaccine safety monitoring, disease modeling, and global vaccination strategies. With the rapid emergence of infectious diseases, evolving vaccination technologies, and increasing global health threats, this course focuses on modern epidemiological tools, digital health systems, artificial intelligence in public health, pandemic preparedness, vaccine effectiveness studies, real-world evidence generation, and immunization impact evaluation. Participants will gain hands-on expertise in analyzing vaccine-preventable diseases, interpreting epidemiological trends, and implementing evidence-based vaccination interventions aligned with international public health standards.

This intensive training program integrates global health security, precision public health, data-driven immunization strategies, predictive analytics, genomic surveillance, vaccine confidence communication, and One Health approaches to strengthen national and international immunization systems. Through practical case studies, simulations, field-based learning, and applied epidemiological methods, participants will learn how to design and evaluate vaccination programs, monitor adverse events following immunization (AEFI), respond to outbreaks, and enhance vaccine uptake in diverse populations. The course aligns with emerging priorities in pandemic response, digital epidemiology, health informatics, antimicrobial resistance prevention, and sustainable healthcare systems, making it highly relevant for professionals seeking leadership roles in modern public health and vaccine program management.

Programme Curriculum

Vaccine Epidemiology Training Course

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Course Duration

5 days

Course Objectives

By the end of the training, participants will be able to:

1. Understand advanced concepts in vaccine epidemiology and immunization intelligence.
2. Apply data analytics and digital surveillance systems for vaccine-preventable diseases.
3. Conduct vaccine effectiveness and impact assessments using real-world evidence.
4. Strengthen pandemic preparedness and outbreak response strategies.
5. Analyze AI-powered epidemiological forecasting and predictive modeling.
6. Implement global immunization strategies and vaccination campaign planning.
7. Monitor and investigate Adverse Events Following Immunization (AEFI).
8. Utilize GIS mapping and geospatial epidemiology in immunization programs.
9. Improve risk communication and vaccine confidence management.
10. Integrate One Health and global health security frameworks into vaccination systems.
11. Develop skills in public health data visualization and dashboard reporting.
12. Evaluate equity-focused immunization policies and universal vaccine coverage.
13. Design evidence-based community engagement and behavioral health interventions.

Target Audience

1. Epidemiologists and Field Epidemiology Officers
2. Public Health Specialists and Researchers
3. Immunization Program Managers
4. Medical Doctors and Healthcare Professionals
5. NGO and Humanitarian Health Workers
6. Health Data Analysts and Biostatisticians
7. Ministry of Health Officials and Policymakers

8. Graduate Students in Public Health, Medicine, and Epidemiology

Course Modules

Module 1: Fundamentals of Vaccine Epidemiology

- Principles of epidemiology and immunization science
- Vaccine-preventable diseases and transmission dynamics
- Herd immunity and population protection
- Vaccination schedules and coverage indicators
- Epidemiological measures in immunization programs
- Case Study: Measles outbreak surveillance and vaccination response in low-coverage communities

Module 2: Immunization Surveillance Systems

- Integrated disease surveillance systems
- Digital health reporting platforms
- Real-time outbreak monitoring
- Vaccine coverage assessment methods
- Data quality assurance and validation
- Case Study: Polio surveillance and eradication initiatives using digital tracking systems

Module 3: Vaccine Safety and AEFI Monitoring

- Vaccine pharmacovigilance systems
- Adverse Events Following Immunization (AEFI) investigation
- Causality assessment frameworks
- Vaccine risk-benefit communication
- Global vaccine safety standards
- Case Study: COVID-19 vaccine safety monitoring and public confidence management

Module 4: Vaccine Effectiveness and Impact Evaluation

- Vaccine effectiveness study designs
- Cohort and case-control methodologies
- Real-world evidence generation
- Statistical analysis in vaccine studies
- Immunization program impact evaluation
- Case Study: Evaluation of HPV vaccination impact on cervical cancer prevention

Module 5: Outbreak Investigation and Pandemic Preparedness

- Outbreak investigation protocols
- Contact tracing and response coordination
- Pandemic preparedness frameworks
- Emergency vaccination campaign management
- Global health emergency response systems
- Case Study: Ebola outbreak response and ring vaccination strategy implementation

Module 6: Data Analytics, AI, and Predictive Epidemiology

- Artificial intelligence in public health

- Predictive disease modeling
- GIS and geospatial mapping tools
- Data visualization dashboards
- Machine learning for outbreak forecasting
- Case Study: AI-driven forecasting models during influenza vaccination campaigns

Module 7: Vaccine Policy, Ethics, and Global Health Security

- Global immunization policies and frameworks
- Equity and access to vaccines
- Ethical considerations in vaccination programs
- International Health Regulations (IHR)
- One Health approach in immunization systems
- Case Study: Global vaccine equity challenges during the COVID-19 pandemic

Module 8: Community Engagement and Vaccine Communication

- Behavioral change communication strategies
- Addressing vaccine hesitancy and misinformation
- Social media and digital health communication
- Community mobilization approaches
- Stakeholder engagement and advocacy
- Case Study: Combating vaccine misinformation through digital public health campaigns

Training Methodology

This course employs a participatory and hands-on approach to ensure practical learning, including:

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

Register as a group from 3 participants for a Discount

Send us an email: info@fineskilltrainingcenter.org or call *+254769199797*

Certification

Upon successful completion of this training, participants will be issued with a globally- recognized certificate.

Tailor-Made Course

We also offer tailor-made courses based on your needs.

Key Notes

a. The participant must be conversant with English.

b. Upon completion of training the participant will be issued with an Authorized Training Certificate

c. Course duration is flexible and the contents can be modified to fit any number of days.

d. The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

e. One-year post-training support Consultation and Coaching provided after the course.

f. Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

Upcoming Scheduled Sessions

Start Date	End Date	Location	Price
23 Nov 2026	27 Nov 2026	Online	$1,000
23 Nov 2026	27 Nov 2026	Physical	$1,500
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$3,000
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$4,500
23 Nov 2026	27 Nov 2026	Physical	$6,000
23 Nov 2026	27 Nov 2026	Physical	$6,000

Ready to enroll or request a customized program? Book online or contact us:

Register Online Now

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com