Vector Control Strategies 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

Vector-borne diseases remain a major global public health challenge, driven by climate change, rapid urbanization, poor sanitation, and increased human mobility. Diseases such as malaria, dengue fever, chikungunya, Zika virus, and yellow fever continue to strain health systems, particularly in tropical and subtropical regions. Vector Control Strategies Training Course is designed to equip public health professionals, environmental health officers, and disease surveillance teams with cutting-edge, evidence-based, and sustainable vector control techniques. The course integrates integrated vector management (IVM), GIS-based surveillance, entomological monitoring, insecticide resistance management, and climate-sensitive disease forecasting to strengthen outbreak prevention and response systems.

With increasing global emphasis on One Health approaches, climate resilience, and data-driven disease control, this training builds competencies in modern vector control innovations including biological control agents, larval source management, digital epidemiology, and community-based interventions. Participants will gain practical skills in planning, implementing, and evaluating vector control programs aligned with WHO standards and national public health frameworks. The course emphasizes real-world application through case studies, simulation exercises, and field-based learning to enhance operational readiness and impact at community and national levels.

Programme Curriculum

Vector Control Strategies Training Course

Introduction

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Course Duration

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Course Objectives

1. Understand Integrated Vector Management (IVM) frameworks and global best practices
2. Apply mosquito surveillance and entomological monitoring techniques
3. Analyze vector-borne disease transmission dynamics and epidemiology
4. Implement insecticide resistance management strategies
5. Design climate-smart vector control interventions
6. Utilize GIS mapping and spatial analysis for outbreak tracking
7. Strengthen community-based vector control programs
8. Apply larval source management (LSM) techniques effectively
9. Evaluate biological and chemical vector control methods
10. Integrate One Health approaches in vector management systems
11. Conduct risk assessment for vector-borne disease outbreaks
12. Improve data-driven decision-making in public health surveillance
13. Develop sustainable and eco-friendly vector control policies

Target Audience

- Public Health Officers
- Environmental Health Practitioners
- Epidemiologists and Disease Surveillance Officers
- Laboratory Technicians (Entomology focus)
- NGO and Humanitarian Health Workers
- Ministry of Health Program Managers
- Urban Planning and Sanitation Officers
- Researchers in Vector-Borne Disease Control

Course Modules

Module 1: Foundations of Vector Biology and Ecology

- Life cycle of mosquitoes, ticks, and flies
- Environmental determinants of vector breeding
- Disease transmission mechanisms

- Vector classification and behavior patterns
- Case Study: Malaria transmission ecology in Sub-Saharan Africa

Module 2: Integrated Vector Management (IVM)

- Principles of IVM strategy
- Multi-sectoral coordination approaches
- Policy and governance frameworks
- Sustainability in vector control programs
- Case Study: National IVM implementation in Sri Lanka

Module 3: Surveillance and Monitoring Systems

- Entomological surveillance techniques
- Disease outbreak early warning systems
- Digital reporting tools and mobile surveillance apps
- Data collection and interpretation
- Case Study: Dengue surveillance system in Singapore

Module 4: Chemical and Biological Control Methods

- Insecticide application techniques
- Larvicides and adulticides usage
- Biological agents (larvivorous fish, bacteria)
- Environmental safety considerations
- Case Study: Bacillus thuringiensis israelensis (Bti) program in India

Module 5: Insecticide Resistance Management

- Mechanisms of resistance development
- Resistance testing protocols
- Rotational insecticide strategies
- Policy guidelines for resistance control
- Case Study: Pyrethroid resistance in West African malaria vectors

Module 6: GIS and Digital Vector Surveillance

- Spatial mapping of disease outbreaks
- Remote sensing and climate data integration
- Predictive modeling for vector hotspots
- Mobile data collection systems
- Case Study: GIS-based malaria mapping in Kenya

Module 7: Community Engagement and Behavior Change

- Community-led total sanitation (CLTS)
- Risk communication strategies
- Health education campaigns
- Stakeholder participation models
- Case Study: Community dengue control program in Brazil

Module 8: Climate Change and Emerging Vector Risks

- Climate variability and vector expansion
- Urbanization and breeding site proliferation
- Emerging and re-emerging vector diseases
- Adaptation and mitigation strategies
- Case Study: Expansion of Aedes aegypti in Europe

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

21 Sep 2026	25 Sep 2026	Online	$1,000
21 Sep 2026	25 Sep 2026	Physical	$1,500
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0
21 Sep 2026	25 Sep 2026	Physical	$0

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