

## Key messages

- An effective vector control programme aims to reduce the population density of the vector, limit vector-human contact and reduce vector breeding sites.
- All camp residents should have the knowledge and means to protect themselves from diseases and nuisance vectors that are likely to represent a significant risk to health and well-being.
- Ensure that the Sphere indicators are incorporated into vector control programmes.
- The population at risk should understand the modes of transmission, prevention, and methods of protection.
- Vulnerable groups must receive particular attention with regards to prevention / protection.
- All of the population has access to shelters that do not encourage the breeding / housing of vectors and where vector control measures are in place.
- The population minimises exposure in peak vector seasons, e.g. mosquitoes.
- Bedding and clothing is aired and washed regularly.
- Food is protected at all times from vectors, such as rodents and insects.
- Chemical vector control is carried out in a manner that ensures that the staff, camp population and the environment are adequately protected.
- Effective excreta and solid waste disposal mechanisms and suitable drainage reduce vector population densities.

## VECTOR CONTROL

### INTRODUCTION

A vector is a disease-carrying agent. The diseases carried by vectors are the most significant causes of sickness and death in camp / emergency situations.

It is vital that a camp is constantly monitored for indicators of diseases spread by vectors, including epidemiological and community-based records on disease incidences and observations.

*Examples of vectors and some of the diseases they transmit:*

- Mosquitoes – malaria (responsible for the highest rates of morbidity and mortality), yellow fever and dengue fever;
- Rodents (rats and mice) – leptospirosis. They also carry other vectors, such as fleas;
- Non-biting flies – responsible for many diarrhoeal diseases;
- Ticks – relapsing fever;
- Body lice – typhus and relapsing fever; and
- Fleas – typhus and plague.

Vector eradication and prevention measures are essential proactive measures in controlling / minimising the incidence of vector-borne diseases. A vector control programme is inextricably linked to related WASH programmes. The integration of vector control indicators in these areas (e.g. excreta disposal, water supply, drainage, solid waste management, hygiene extension education) will help to control vectors.

### KEY ENVIRONMENTAL CONSIDERATIONS

An effective vector control programme will minimise the incidence of vector-borne disease among a camp population. Preventative vector control measures reduce the need for chemical vector control – this in itself is a key environmental consideration since these chemicals are highly toxic. The use of chemicals should be a last resort and only used after all potential impacts have been taken into account.

In cases where chemical vector control measures are necessary, it is important that:

- chemicals are stored in a secure environment enclosed within a bund wall;
- all logistics associated with use are confirmed, e.g. disposal;
- shelters are constructed in a manner that discourages vector breeding / nesting sites;
- camp populations are notified in advance of the use of chemicals and educated on protective measures;
- the environmental effects of chemical vector controls on water, vegetation and air are known;
- the use of vector-specific chemicals are used where possible; and
- water quality is monitored for the presence of chemicals used.

## CHECKLIST

### Designing a vector control programme

- √ Has the correct vector been identified and its life-cycle, breeding, nesting and living conditions researched?
- √ Has the vector control programme been designed in collaboration with WASH, health and environment sectors?
- √ Has the community been consulted in the design of the vector control programme?
- √ Have environmental and personal vector control measures been considered before chemical control?
- √ Chemical vector control measures are only used where there is an epidemic of diarrhoeal disease or at times where vector populations are at their greatest.

### Environmental controls

- √ Have wells been covered?
- √ Do drainage systems prevent stagnant water collecting in and around the camp?
- √ Have breeding sites for key vectors been eradicated in and around a camp?
- √ Is effective excreta and solid waste management in place?
- √ Are people infected with malaria diagnosed and treated immediately?

### Personal vector control

- √ Do vector related awareness-raising activities utilise a number of channels of communication (including formal education)?
- √ Do vulnerable groups receive particular attention?
- √ Have mosquito nets been distributed to vulnerable people, e.g. the sick or pregnant?
- √ Is bedding and clothing aired and washed regularly?
- √ Have efforts been made to ensure that food and water in the home is protected at all times from vectors including rodents and insects?

### Chemical control safety

- √ Are the risks to the safety and health of staff, camp populations and the environment minimised?
- √ Are mechanisms in place for safe, secure storage and disposal?
- √ Are communities aware of the risks posed by the use of chemicals, and do they have the knowledge and resources to protect themselves from exposure?

## Further reading and resources

**Emergency Sanitation: assessment and programme design** (WEDC, 2002).

<http://www.wedc-knowledge.org/>

**Waterborne Disease: Epidemiology and Ecology** (Hunter, 1997).

<http://books.google.co.uk/>

**Emergency Vector Control Using Chemicals: A handbook for relief workers** (WEDC, 1999).

<http://wedc.lboro.ac.uk/resources/books/>

**Disease Prevention through Vector Control: Guidelines for Relief Organisations** (Oxfam GB, 1995).

**Vector and Pest Control in Refugee Situations** (UNHCR, 1997).

<http://www.unhcr.org/49d082fe2.html>

**Chemical Methods for the Control of Vectors and Pests of Public Health Importance** (WHO, 1997).

[http://whqlibdoc.who.int/hq/1997/WHO\\_CTD\\_WHO\\_PES\\_97.2.pdf](http://whqlibdoc.who.int/hq/1997/WHO_CTD_WHO_PES_97.2.pdf)

**Pesticide Evaluation Scheme (WHOPES), Guidelines for the Purchase of Pesticides for Use in Public Health** (WHO).

<http://www.who.int/whopes/>

**Environmental Management for Vector Control** (WHO, 1988).

<http://helid.desastres.net/en/d/Jwhow01e/2.html>

**Minimum standards in Water Supply, Sanitation and Hygiene Promotion (Sphere Project, Chapter 2).**

[http://www.sphereproject.org/dmdocuments/handbook/hdbkpdf/hdbk\\_c2.pdf](http://www.sphereproject.org/dmdocuments/handbook/hdbkpdf/hdbk_c2.pdf)

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