



“Vector control: linking research and practice: use of “high level” evidence”

Area of activity	Specific activity	Purpose
Entomology		
Entomological surveillance	1. Presence/absence of larvae and/or pupae	To describe levels of infestation and ecology of immature development stages To monitor impact of vector control
	2. Number of pupae	To describe levels of infestation and to identify the most adult-productive container categories To focus vector control activities on the most epidemiologically important container categories to contribute to the estimation of transmission risk
	3. Relative adult abundance over time	To measure impact of vector control activities, seasonal and diel activity
	4. Insecticide susceptibility (larvae and adults)	To monitor for insecticide resistance and its management
Routine vector control operations	1. Controlling the immature stages	To reduce the vector population to levels at which transmission of virus is lowered or prevented
	2. Controlling adults	To reduce adult survival to lower vectorial capacity (for transmission of virus)
Emergency vector control operations	1. Controlling the immature stages 2. Controlling adults	To rapidly reduce vector population to slow/contain/interrupt transmission, or prevent incipient outbreak
Collaboration		
Communication and social mobilization	Design communication strategies and tools to inform and mobilize communities and other partners/sectors for vector control, personal protection, and case management.	To increase awareness and collaboration with recommended actions
Epidemiological surveillance	1. Passive surveillance data - clinical reporting of dengue cases (probable or confirmed dengue and severe dengue) - laboratory reporting on confirmed dengue cases/ serotypes.	- describe trends and burden of disease - detect areas of transmission - outbreak detection/prediction - guide epidemiological stratification
	2. Active surveillance data - case report verification - active casefinding - specific studies.	
Support		
Interagency coordination	Coordination between different national and international agencies involved in dengue control	To increase coordination between different players To reduce overlap of interventions and wastage of resources
Innovation	Assessment of novel techniques for use in the national context	To increase the uptake of novel techniques
Capacity/training	Rolling programme of training in techniques for vector control services	To ensure appropriate training and retraining of personnel
Monitoring and evaluation	Continuous monitoring and evaluation of vector control services according to established programme criteria and indicators	To ensure that programmes achieve what they should
Logistics	Support of vector control services	To ensure appropriate logistical support
Administration and finances	Support of vector control services	To ensure appropriate administrative and financial support

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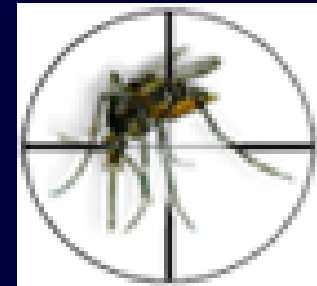
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Content of this talk

1. The background
2. The systematic reviews
3. Conclusions
4. Discussion/questions



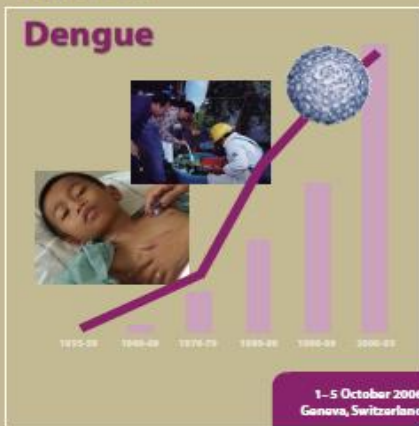
The background and justification



Scientific Working Group



Report on Dengue



1-5 October 2006
Geneva, Switzerland

Special Programme for Research & Training in Tropical Diseases (TDR) sponsored by UNICEF/UNDP/World Bank/WHO

www.who.int/tdr

DENGUE

GUIDELINES FOR DIAGNOSIS,
TREATMENT, PREVENTION AND CONTROL



New edition
2009

TDR For research on diseases of poverty
UNICEF • UNDP • World Bank • WHO
World Health Organization

Dengue case classification by severity

Dengue ± warning signs



Severe dengue

1. Severe plasma leakage
2. Severe haemorrhage
3. Severe organ impairment

Criteria for dengue ± warning signs

Probable dengue
Live in/travel to dengue endemic areas. Fever and 2 of the following criteria:
• Nausea, vomiting
• Rash
• Aches and pains
• tourniquet test positive
• Leucopenia
• Any warning sign

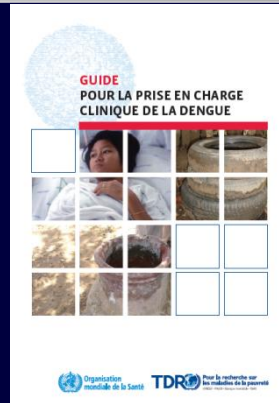
Laboratory confirmed dengue
(Imprecise when no sign of plasma leakage)

Warning signs*
• Abdominal pain or tenderness
• Persistent vomiting
• Clinical fluid accumulation
• Mucosal bleed
• Lethargy, restlessness
• Liver enlargements >2cm
• Laboratory: increase in HCT concurrent with rapid decrease in platelet count

*Requiring close observation and medical intervention

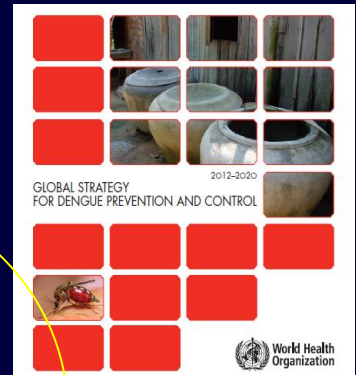
Criteria for severe dengue

1. Severe plasma leakage leading to:
• Shock (DSS)
• Fluid accumulation with respiratory distress
2. Severe bleeding as evaluated by clinician
3. Severe organ involvement
• Liver: AST or ALT >1000
• CNS: Impaired consciousness
• Heart and other organs



Material de enseñanza para cursos de dengue

Technical handbook: surveillance, dengue outbreak prediction/detection/response



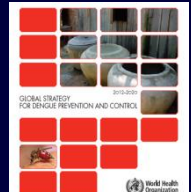
Technical handbook for dengue vector control



The background and justification



The WHO global strategy to combat dengue:



Epidemic-prone countries typically initiate vector control measures after the onset of an epidemic which is too late to achieve significant impact. Endemic countries, on the other hand, too often carry out routine short-term interventions, which are neither sustained nor evaluated. Any successful control effort must be centred on the ability to sustain the intervention with sound monitoring and evaluation.



The studies: systematic literature reviews on dengue vector control



Medical and Veterinary Entomology (2008) **22**, 203–221

REVIEW ARTICLE

Effect of dengue vector control interventions on entomological parameters in developing countries: a systematic review and meta-analysis

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- Integrated vector management was found to be the most effective method to reduce the CI, HI and BI, resulting in random combined relative effectiveness values of 0.12 (95% c.i. 0.02 – 0.62), 0.17 (95% c.i. 0.02 – 1.28) and 0.33 (95% c.i. 0.22 – 0.48), respectively
- Environmental management showed a relatively low effectiveness of 0.71 (95% c.i. 0.55 – 0.90) for the BI, 0.49 (95% c.i. 0.30 – 0.79) for the CI and 0.43 (95% c.i. 0.31 – 0.59) for the HI.
- Biological control (relative effectiveness for the CI: 0.18) usually targeted a small number of people (median population size: 200; range 20 – 2500), whereas integrated vector management focused on larger populations (median: 12 450; range: 210 – 9 600 000).