

Global vector control response

Programme Managers Meeting on Neglected Tropical Diseases in the Pacific

Nadi, Fiji. 20 - 22 February 2018

Global **Malaria** Programme
Department of Control of **Neglected Tropical Diseases**
Special Programme for **Research and Training** in Tropical Diseases



**World Health
Organization**

Importance of vector control

... above all, the spread of Zika, the resurgence of dengue, and the emerging threat of Chikungunya are the price being paid for a **massive policy failure that dropped the ball on mosquito control in the 1970s.**

Margaret Chan

Director-General, World Health Organization

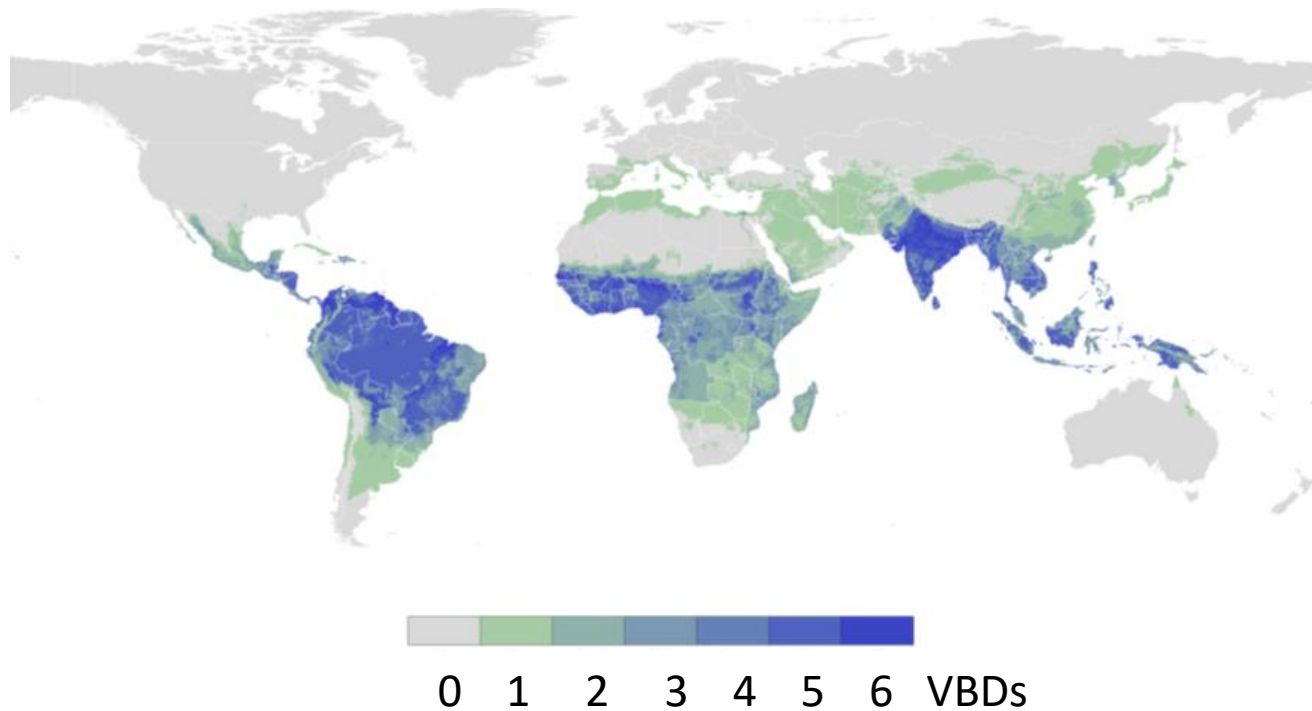
Opening Address at World Health Assembly 69th session

May 2016

Global burden of vector-borne diseases

Vector	Disease	Estimated or reported annual cases	Estimated annual deaths	Estimated annual DALYs
Mosquitoes	Malaria	212 000 000	429 000	55 111 000
	Dengue	96 000 000	9 110	1 892 200
	Lymphatic filariasis	38 464 000	NA	2 075 000
	Chikungunya (Americas)	693 000 (suspected, 2015)	NA	NA
	Zika virus disease (Americas)	500 000 (suspected, 2016)	NA	NA
	Yellow fever (Africa)	130 000	500	31 000
	Japanese encephalitis	42 500	9250	431 552
	West Nile fever	2 588	111	NA
Blackflies	Onchocerciasis	15 531 500	NA	1 135 700
Sandflies	(Muco) cutaneous leishmaniasis	3 895 000	NA	41 500
	Visceral leishmaniasis	60 800	62 500	1 377 400
Triatomine bugs	Chagas disease	6 653 000	10 600	236 100
Ticks	Borreliosis (Lyme disease)	532 125	NA	10.5
	Tick-borne encephalitis (North Eurasia)	10 000 – 12 000	NA	167.8 / 100 000
Tsetse flies	Human African trypanosomiasis	10 700	6 900	202 400
Snails	Schistosomiasis	207 000 000	200 000	2 613 300
Various	Other: Rift Valley fever, O'nyong nyong virus, Mayaro virus, Crimean-Congo haemorrhagic fever, rickettsial diseases, plague (<i>limited data</i>)			

Global distribution of major vector-borne diseases



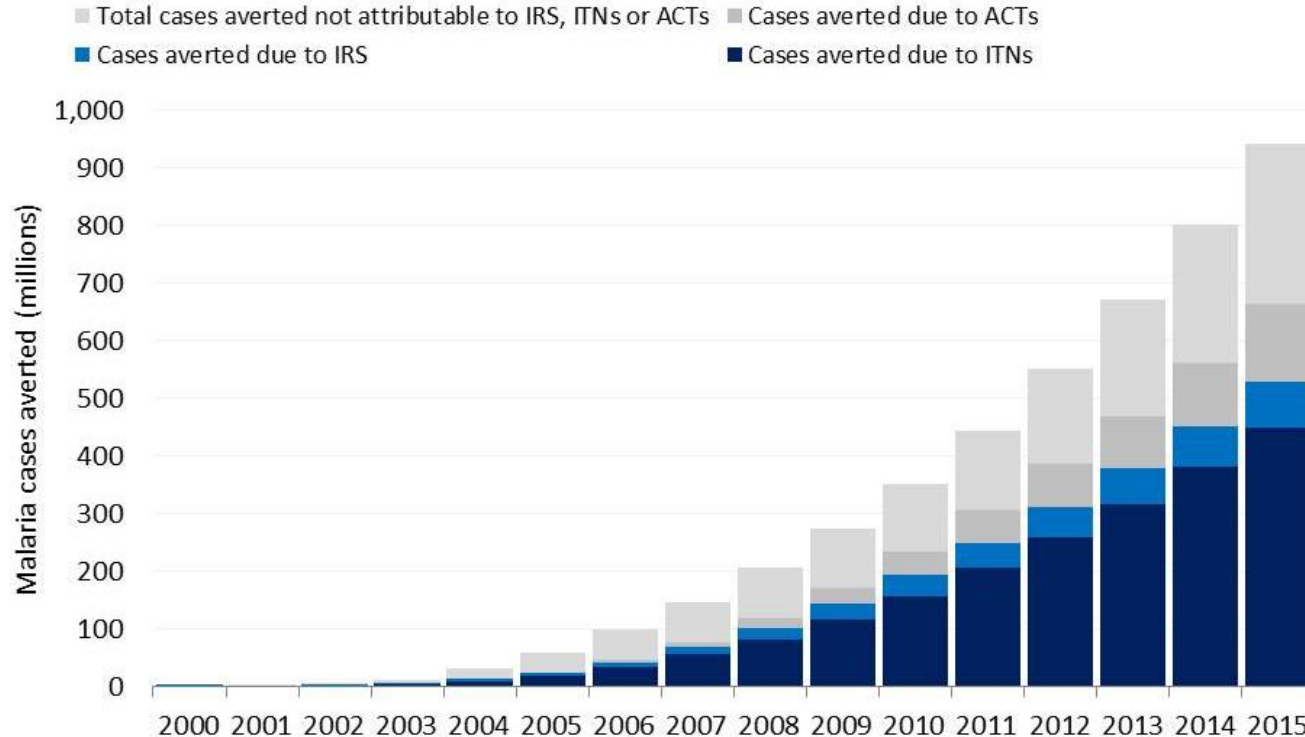
Combined global distribution of malaria, dengue, lymphatic filariasis, leishmaniasis, Japanese encephalitis, yellow fever and Chagas disease.

Today more than **80% of the world's population is at risk** from at least one vector-borne disease, with more than half at risk from two or more.

Golding et al. BMC Med. 2015; 13:249

Major gains made against malaria through vector control

- Estimated 1.2 billion fewer malaria cases and 6.2 million fewer malaria deaths globally between 2001 and 2015 (cumulative) relative to 2000
- But current activities are insufficient to eliminate malaria from sub-Saharan Africa
- Need improved and additional tools and better strategies and implementation



70% of reductions in sub-Saharan Africa attributable to interventions.

Of this, **69%** attributable to **ITNs**, **21%** to **ACTs** and **10%** to **IRS**

Cibulskis et al. Infect Dis Poverty. 2016; 5:61

Challenges

- **Systemic:** insufficient public health entomological capacity including human and infrastructural
- **Structural:** strong centralised programme lacking in many countries, synergies not leveraged, and resource utilization not optimized
- **Informational:** weak evidence-base and poor linkage of entomological, epidemiological and intervention data
- **Environmental:** unpredictable, uncontrollable and complex changes
- **Movement of human and goods:** increased international travel and trade, humanitarian crises
- **Political and financial:** limited funds committed and sustained beyond malaria
- **Ethical:** implementation including novel interventions

Opportunities

- **Recognition:** importance exemplified in existing regional and global vector-borne disease control strategies
- **Expansion:** build on successes against malaria, onchocerciasis and lymphatic filariasis
- **Optimization:** re-align across multiple vectors, diseases, sectors and partners
- **Collaboration:** leverage existing networks for information and resource sharing
- **Adaptation:** create flexible systems to address specific conditions and challenges
- **Innovation:** new tools, technologies and approaches on the horizon
- **Technology:** advances in data collation, planning and implementation
- **Development:** alignment with Sustainable Development Goals



WHO Executive Board 140th session

Discussed as agenda item 9.2 on 28 January 2017:

- Interventions made by 22 countries (16 EB members, 6 non-EB members) and IFRC
- Support was positive with updates proposed for strengthening GVCR
- Resolution development for WHA70 proposed by Fiji and supported by five other EB members (Canada, China, Colombia, New Zealand, USA) and four EB non-members (Australia, Brazil, Panama, Switzerland)

OUTCOME:

➤ The CHAIRMAN took it that the Board wished to request the Secretariat, in consultation with Member States, to prepare a draft resolution for consideration at the Seventieth World Health Assembly. It was so agreed.

World Health Assembly –May 2017

- Discussed and supported by all member countries.
- Countries from all regions of WHO made interventions: 37 and two regional interventions (AFR and SEAR)
- Resolution was adopted without amendments by the Assembly as WHA 70.16

Global Vector Control Response

<http://www.who.int/malaria/global-vector-control-response/>

In SIX languages

Rationale

Vector-borne diseases:

- account for around 17% of estimated global burden of communicable diseases
- disproportionately affect poorer populations
- impede economic development through direct and indirect costs (eg. loss of productivity and tourism)
- are strongly influenced by social, demographic and environmental factors

Vector control:

- if implemented well can prevent many major vector-borne diseases
- has contributed to major reductions in the incidence of malaria, onchocerciasis and Chagas disease
- has not been used to full potential or maximal impact for other diseases
- can be strengthened by realigning programmes to optimize the delivery of interventions that are tailored to the local context

Vision, Aim and Goals

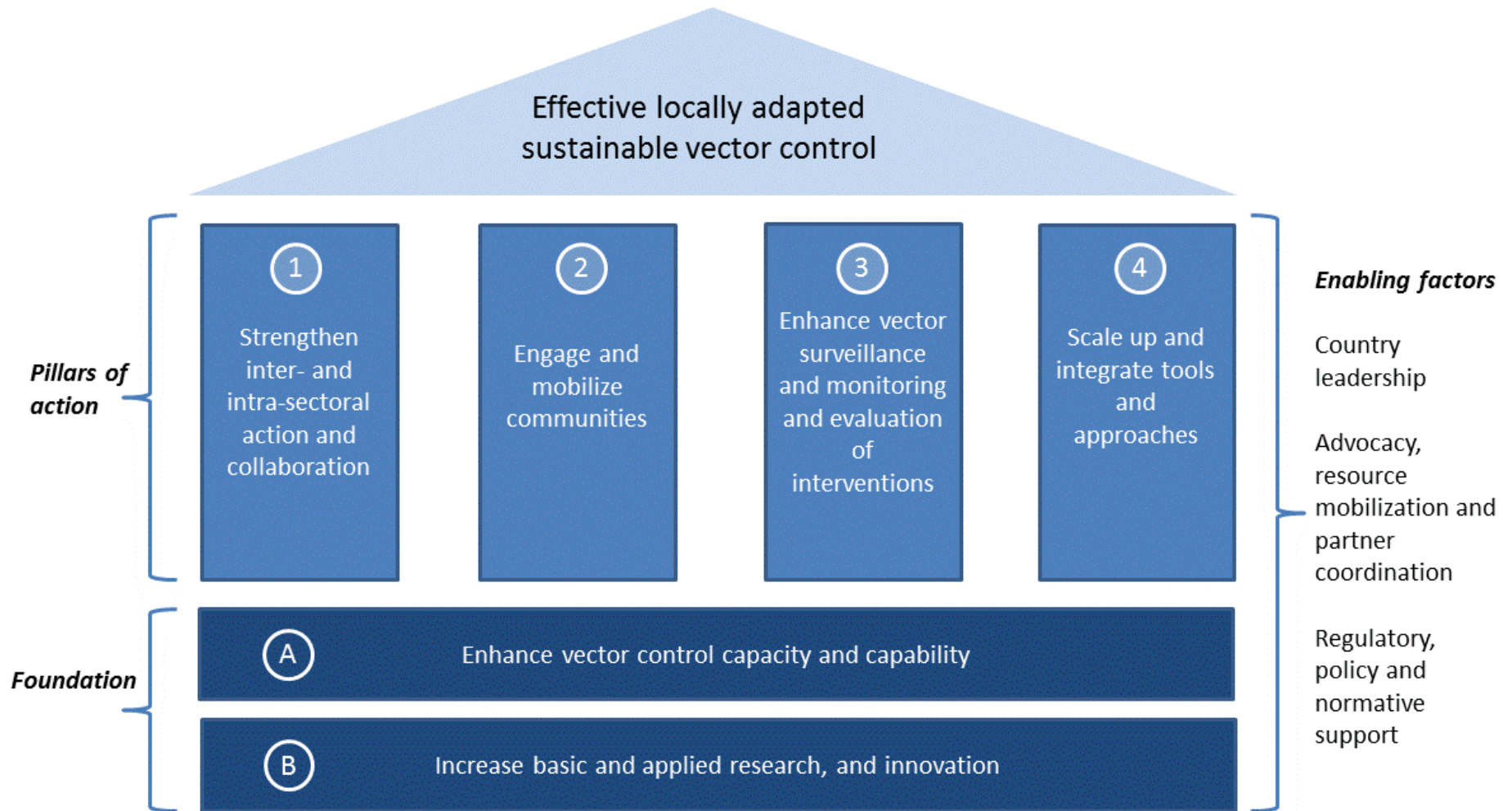
- **Vision:** A world free of human suffering from vector-borne diseases.
- **Aim:** Reduce the burden and threat of vector-borne diseases through effective locally adapted and sustainable vector control.

Goals	Milestones		Targets
	2020	2025	2030
Reduce mortality due to vector-borne diseases globally relative to 2016	At least 30%	At least 50%	At least 75%
Reduce case incidence due to vector-borne diseases globally relative to 2016	At least 25%	At least 40%	At least 60%
Prevent epidemics of vector-borne diseases*		In all countries without transmission in 2016	In all countries

* *Rapid detection of outbreaks and curtailment before spread beyond country.*

Overview

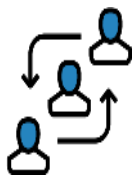
Reduce the burden and threat of vector-borne diseases that affect humans



WHAT IS COMPREHENSIVE VECTOR CONTROL?

- For most vector-borne diseases, prevention by proactive targeting vectors is the first and best approach.
- Millions of people have already benefitted from vector control, with major reductions in malaria, Chagas disease and onchocerciasis.
- But vector control has not been used to its full potential or sustained for maximum impact on other diseases.

A comprehensive approach is required that enables:



**INCREASED
CAPACITY**



**BETTER
COORDINATION**



**IMPROVED
SURVEILLANCE**



**INTEGRATED
ACTION**



Priority activities for 2017–2022* (1-5 of 10)

1. **National and regional vector control strategic plans developed/adapted to align with draft *global vector control response***
2. National vector control needs assessment conducted or updated and resource mobilization plan developed (including for outbreak response)
3. National entomology and cross-sectoral workforce appraised and enhanced to meet identified requirements for vector control, including for epidemic response
4. Relevant staff from health ministries or supporting institutions trained in public health entomology
5. National and regional institutional networks to support training and/or education in public health entomology and technical support established and functioning

** To be revised and updated for the subsequent period of 2023–2030.*

Priority activities for 2017–2022* (6-10 of 10)

6. National agenda for basic and applied research on entomology and vector control established and/or progress reviewed
7. National inter-ministerial task force for multisectoral engagement in vector control established and functioning
8. National plan for effective community engagement and mobilization in vector control developed
9. National vector surveillance systems strengthened and integrated with health information systems to guide vector control
10. National targets for protection of at-risk population with appropriate vector control aligned across vector-borne diseases

** To be revised and updated for the subsequent period of 2023–2030.*

Concluding points

- Country leadership of vector-borne disease prevention and control efforts is critical
- Policies and activities should not be limited to the health sector and should always be evidence-based
- Action within countries and between countries should be harmonized and strengthened
- Emphasis on integrated, community-based approaches – involvement of municipalities and local governments
- Adoption of novel tools is strongly encouraged (when validated for operational use by WHO)
- Aim is to ensure all countries can achieve success, irrespective of their current disease burden/risk, capacities and resources

Thank you

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