Swiss TPH

Malaria control: Progress made and main challenges ahead

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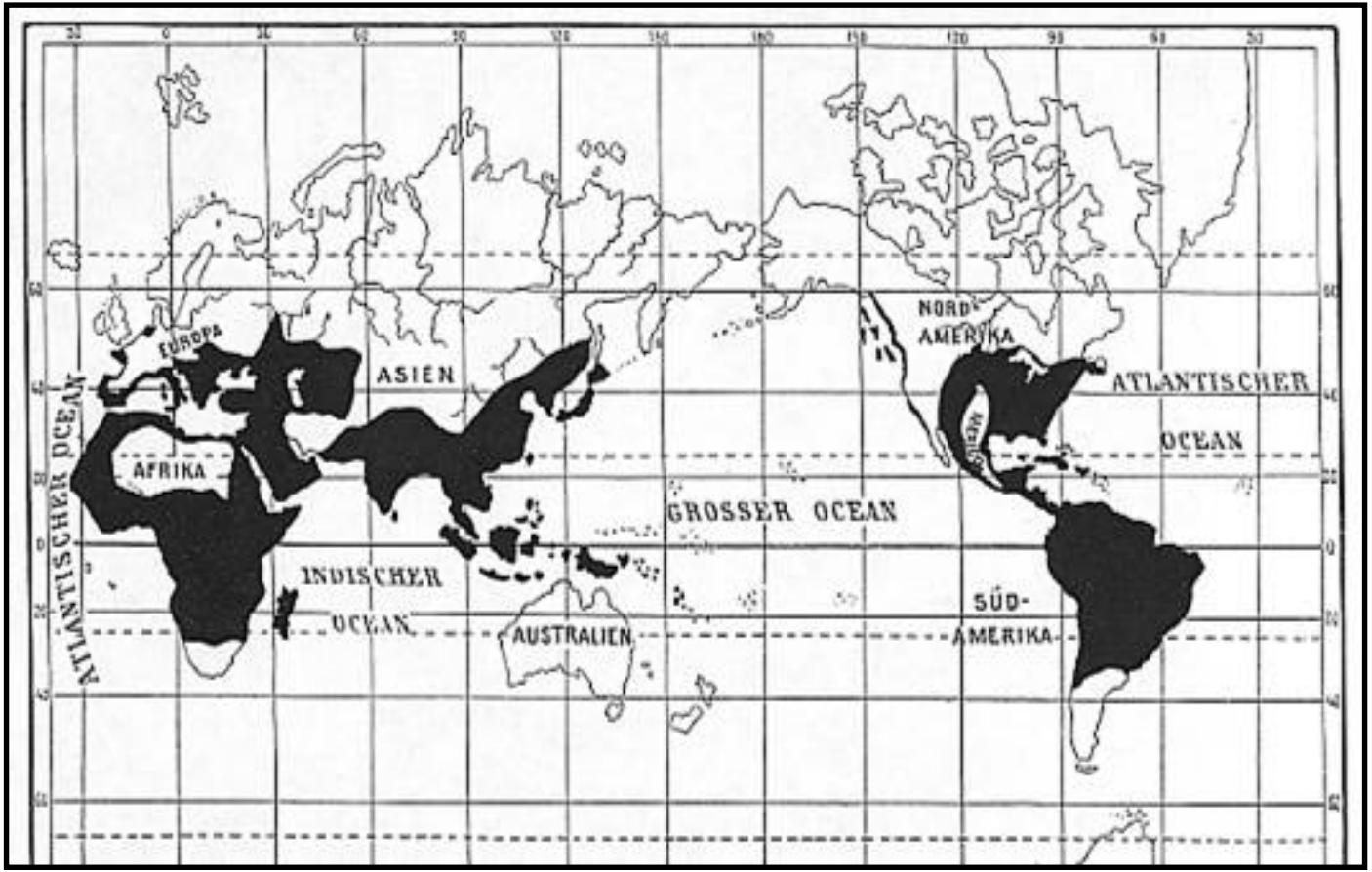
Content

1. Malaria: the public health problem
2. Achievements of malaria control 2000-2021
3. Main challenges ahead

Basel ca. 1800

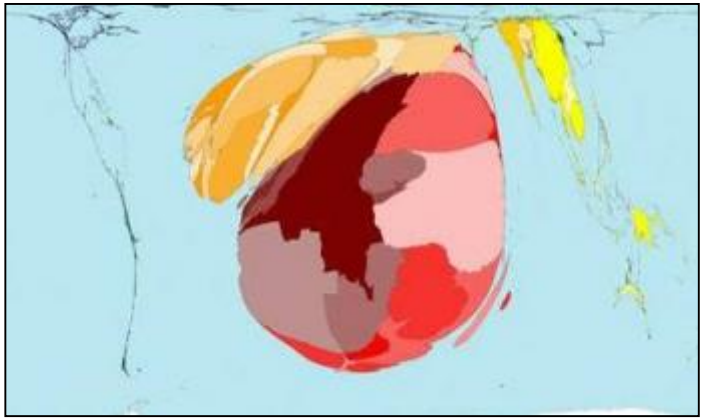
Basel 2020

Malaria in the world around 1900 (Celli 1913)



www.worldmapper.org

Malaria cases



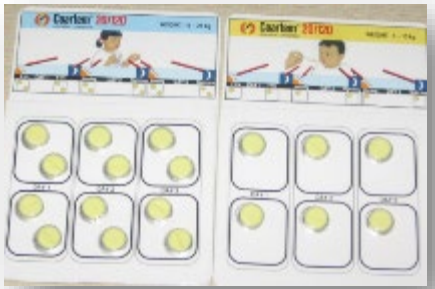
Malaria deaths

In 2019 (WHO - World Malaria Report 2020)

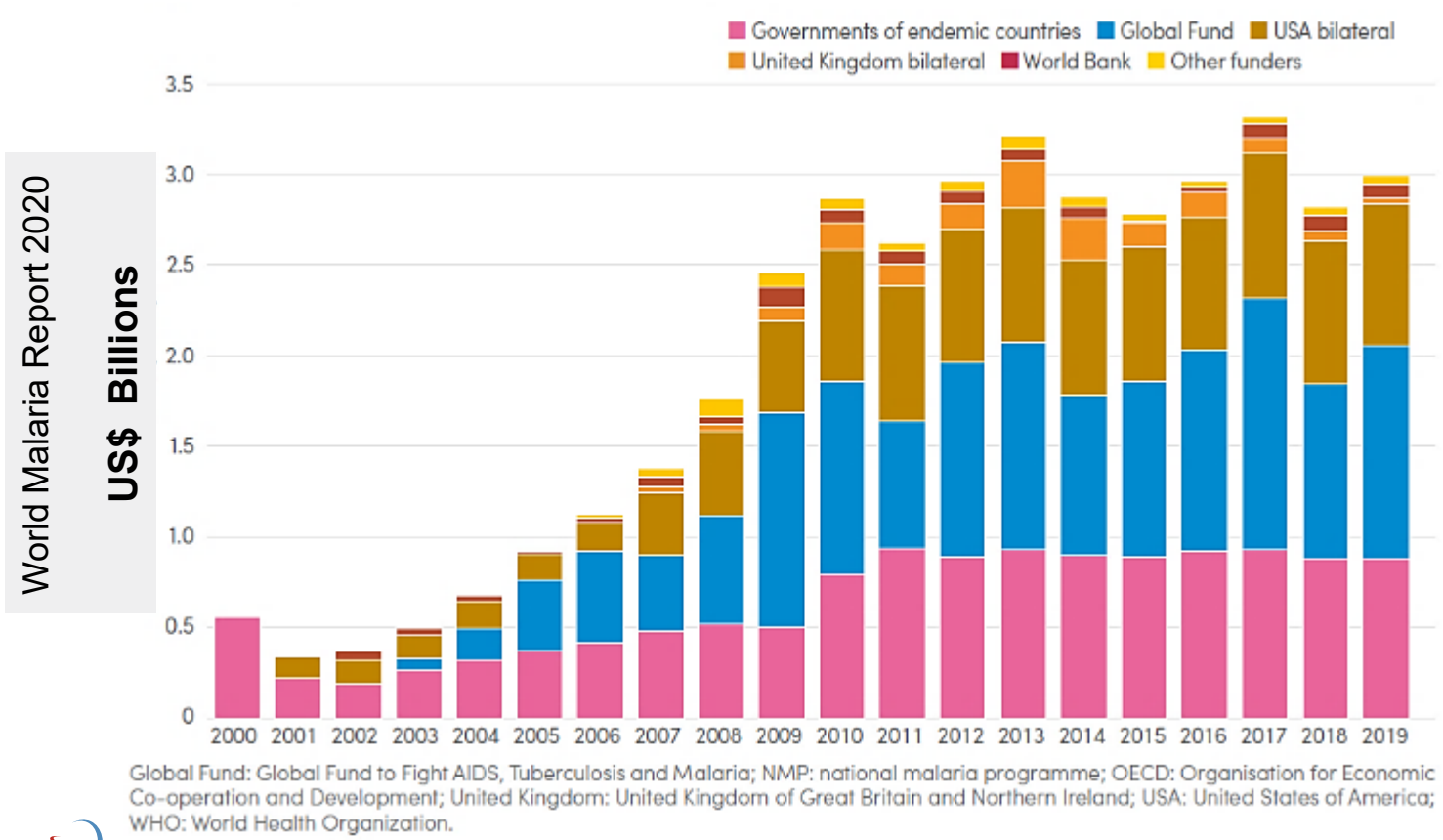
- ✓ 229 million cases per year (vs ca 500 million in 2000)
- ✓ 409,000 deaths, mainly African children (vs >1-3 millions in 2000)
- ✓ 1 Billion individuals living in areas at risk of malaria

The development and large-scale implementation of Insecticide-Treated Nets (ITNs) has made effective vector control possible even in remote areas without much health infrastructure

Since 2004, the development and implementation of Rapid Diagnostic Tests (RDTs) and Artemisinine Combination Therapy (ACT) has provided effective tools for safe and effective case management

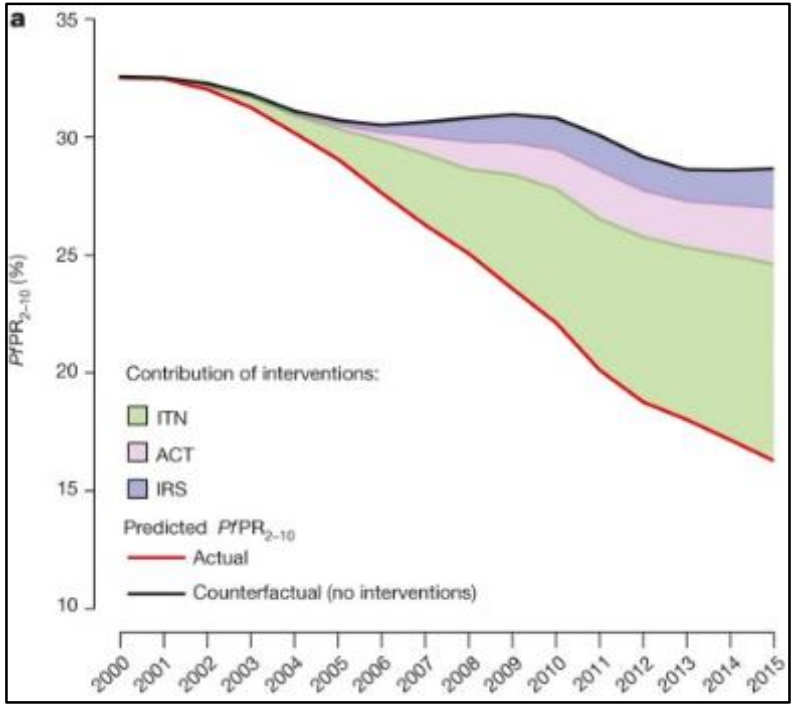


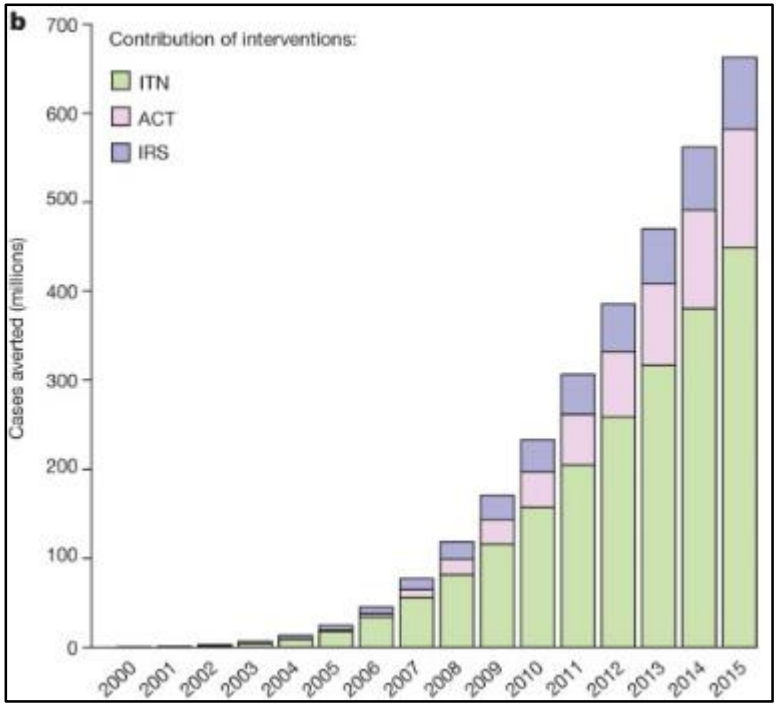
Funding for malaria control 2000 – 2019: 6x increase



Global Fund: Global Fund to Fight AIDS, Tuberculosis and Malaria; NMP: national malaria programme; OECD: Organisation for Economic Co-operation and Development; United Kingdom: United Kingdom of Great Britain and Northern Ireland; USA: United States of America; WHO: World Health Organization.

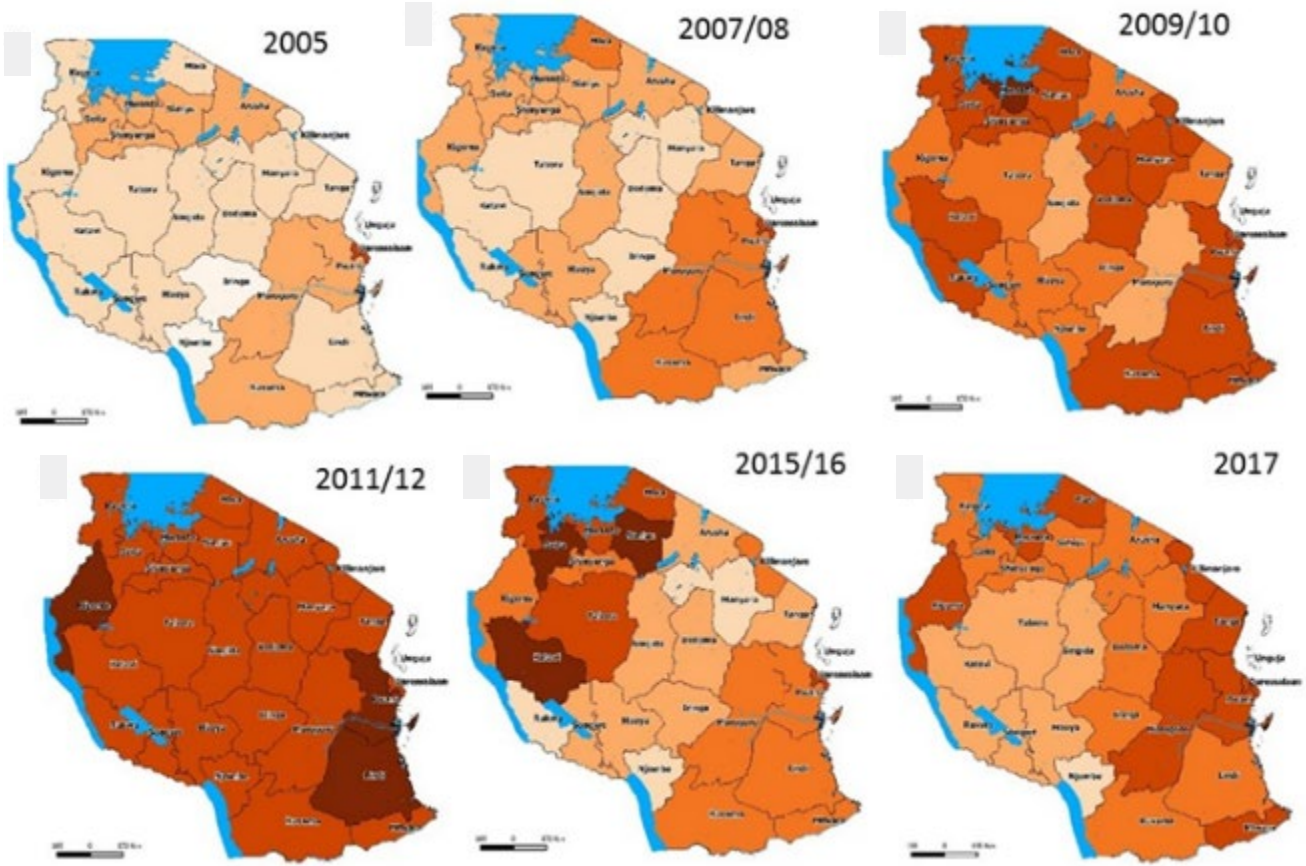
The impact of key malaria control interventions, 2000-2015 Bhatt *et al.* 2015





An estimated 1.5 billion malaria cases and 7.6 million malaria deaths have been averted during the period 2000–2019 (World Malaria Report 2020)

ITN coverage, Tanzania 2005 - 2017



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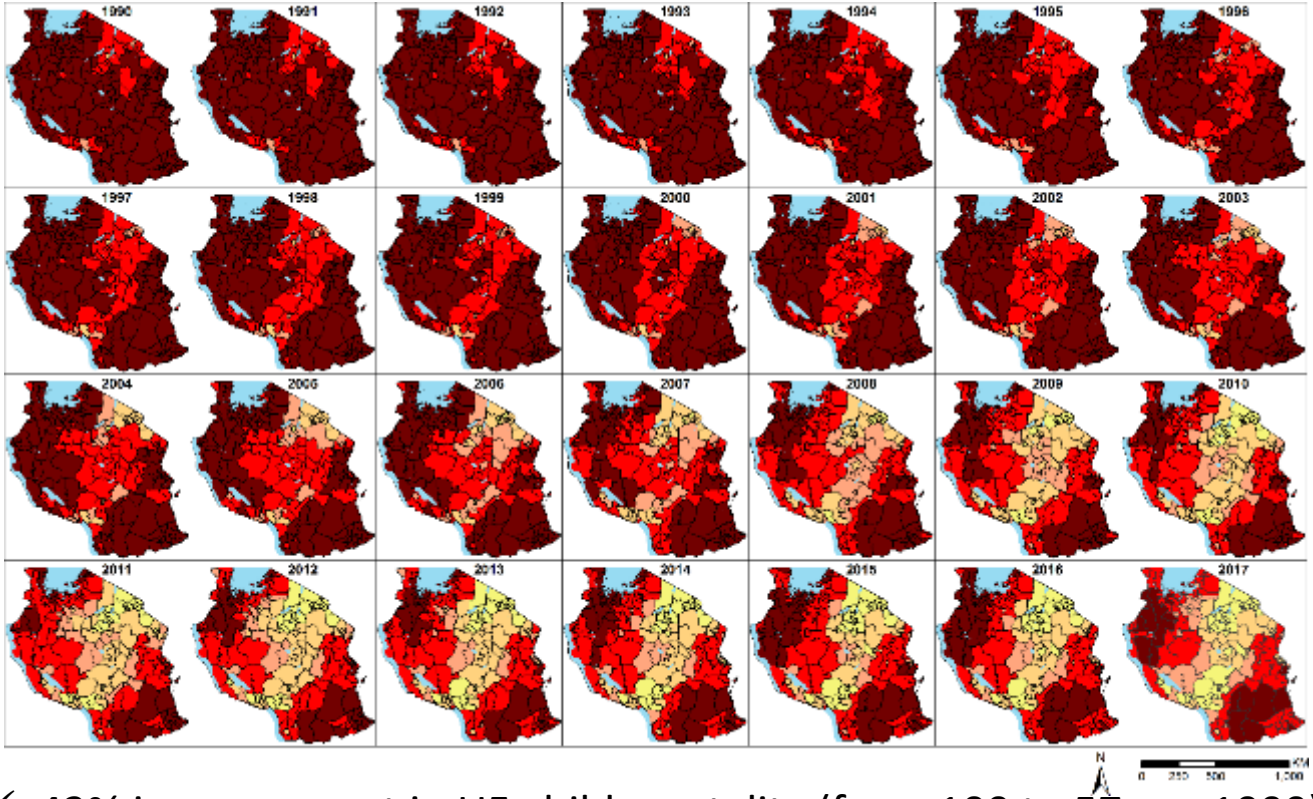
Source: NMCP, Swiss TPH

Per district mean malaria infection rates, children 2-10 years, 1990 – 2017



- ✓ 43% improvement in U5 child mortality (from 100 to 57 per 1000)
- ✓ Over 70,000 deaths averted by malaria control each year

Swiss TPH

Source: NMCP, KEMRI, Swiss TPH

Key challenges (1) Biological

- ✓ Malaria transmission in high risk areas is **extraordinary stable**: R0 = 100
- ✓ Great **variety** of vectors, parasites and epidemiological situations
- ✓ Increasing **resistance** of mosquitoes against insecticides, and of the parasite against current generation of drugs
- ✓ Near-impossibility to raise **protective sterile immunity**, compromizing the development of an effective vaccine (currently 36% protection for 1-2 years)

Key challenges (2) Socio-political

- ✓ Most malaria transmission occurring currently in **low income countries**
- ✓ Malaria only one among a multitude pressing **development problems**; as a result, domestic investment often limited
- ✓ With success, **political support diminishes** (Sri Lanka, Namibia, etc.)

Key challenges (3) Weaknesses of the health system

- ✓ Only 50% of feverish children are treated by competent formal health facilities
- ✓ Substantial issues even for managing severe cases – with a high case fatality rate (CARAMAL study, 14,000 episodes)
- ✓ Coverage with ITNs rarely reaching 60%, and often fluctuating, leading to sub-optimal transmission control
- ✓ Multiple products required (drugs, diagnostics, vector control products, surveillance, management, etc.) often supported by different donors, with different timelines, requirements and priorities.
- ✓ Global fund to fight AIDS TB and Malaria the most significant donor, with strong unifying potential

Conclusions

1. Malaria is a major cause of morbidity and mortality in endemic areas

2. Enormous progress have been made 2000-2020

3. Biggest challenge is the multiple weaknesses of the health system

4. In high-transmission settings we do NOT have currently the tools to interrupt lastingly transmission – hence better systems combined with new tools are required to achieve elimination by 2050 (the declared target)