

UNESCO's Declaration on Bioethics and Human Rights

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The end and the means

The end is clearly non controversial:
Fighting against malaria



Not all innovations, changes, and treatments, which are already made possible or promised as benefits resulting from advancements in biomedical sciences, are non controversial as an end (for instance: enhancement of some human ability is something else than treating a dangerous, often lethal disease).



The ethical implications we are talking about concern
the means.

What about the means?

The means against malaria usually target:

A) the consequences of the transmission of Plasmodium, so as to prevent the development of the disease or to alleviate its symptoms (drugs and vaccines for human beings)

B) the possibility of transmission, (that is preventing bites through clothing, repellents, nets, etc.)

C) the vector (mosquitoes)

Targeting the vector

The priority is:

Reduce the number of mosquitoes,
«as much as possible»

«Today, the main aim is to reduce the densities of vector populations as much as possible and to maintain them at low levels. Where feasible, efforts should attempt at reducing the longevity of the adult female mosquito by insecticidal methods in order to lessen the risk of virus transmission [...] Methods of vector control include the elimination or management of larval habitats, larviciding with insecticides, the use of biological agents and the application of adulticides»

(http://www.who.int/denguecontrol/control_strategies/control_strategy_vector/en/)

«As much as possible» (1944)

«... today we tend to liberate Italy from this disease, aware that the scientific means available will allow to us to reach the target in a relatively short time» (Nov. 1944).

(A.Missiroli ,Director of the Laboratory of Malariology of the Italian National Institute of Health).See G. Majori, *Short History of Malaria and Its Eradication in Italy. With Short Notes on the Fight Against the Infection in the Mediterranean Basin*, in «Mediterranean Journal of Hematology and Infectious Diseases 2012; 4(1)).



Scientific means available,
here, «means»DDT

«As much as possible» (2008)

«Vector control interventions can make a significant impact on morbidity and mortality today». Therefore, R&D should address several opportunities to improve existing interventions:



Costs and challenges of Indoor Residual Spraying

Distribution and practicality of long-lasting insecticidal nets

Delaying resistance to pesticides

New chemistries and targets for killing vectors

Larvicides for use in multiple settings and inexpensive biologics

Novel mechanisms for killing vectors

Control methods and personal protection measures for outdoor biting vectors

(Roll Back Malaria Partnership, *The Global Malaria Action Plan. For a malaria-free world*, 2008, pp. 83-84).

«As much as possible» (tomorrow?)

The new frontier: genetic engineering technology

Population replacement

Population suppression

What Principles of the UDBHR are at stake?



Article 14: Social responsibility and Health

Article 15: Sharing of benefits

Article 17: Protection of the environment, the biosphere and biodiversity (to be linked to Article 16: Protecting future generations)

Social Responsibility and Health

«More than one third of the world's population has no access to essential drugs and more than a half of these people live in the poorest regions of Africa and Asia. The lack of access to medicines for economic reasons contravenes the provisions of Article 2 of the Universal Declaration of Human Rights and Article 14 of the UDHR, which points out the differences of economic conditions as an unacceptable basis for substantial differences as to the access to quality health care and therefore as a possible source of “discrimination” in the broader sense of the term».

(Report of the IBC on the Principle of Non-discrimination and Non-stigmatization, 2014, p. 11)

Sharing of benefits

«It is essential to consider the commitment to sharing not as a sort of trickling down or top-down beneficence, even though this is not meant to loosen the most immediate bond of human solidarity every time that urgent help is necessary. Sharing should always be pursued through active participation, which is a democratic, horizontal approach entailing collaboration and empowerment of all actors in the research process, particularly communities».

(Report of the IBC on the Principle of the Sharing of Benefits, 2015, § 108)

Protection of the environment, the biosphere and biodiversity

«States and governments [...] should renounce the possibility of going into it alone within their own legal system. Retaining their freedom to adopt more detailed and even stricter national regulations, they are called on to boost the idea of shared global standard-setting and regulation, building on the universally accepted principles enshrined in the UDHR [...] **The precautionary principle should be respected, ensuring that substantial consensus of the scientific community on the safety of new technological applications be the premise for any further consideration**».

(Report of the IBC on Updating Its Reflection on the Human Genome and Human Rights, 2015, §§116-117)

Even though...

...it is the possibility of «editing the **human** genome so that genetic modifications would be passed on to future generations» that is addressed in the last quotation. The modulation of the precautionary principle itself can be different, if what we are talking about is a “big killer” for humankind. Even though...

Considering the precautionary principle...

1.altering a gene can have unwanted consequences (so many things remain unknown...);

2.impact on other insect populations and, consequently, on the entire ecosystem

3.global interactions

4.creation of new, harmful agents

5.and even “dual” use: creation of new bioweapons

A double responsibility...

«As human beings we have a moral duty towards ourselves, but also to conserve and protect the integrity of the ecosystem».



What does *integrity of the ecosystem* mean?

About bed-bugs and mice...

«In *On Nature* book 5 he [Chrysippus] says that bed-bugs are useful for waking us, that mice encourage us not to be untidy, and that is only to be expected that nature should love beauty and delight in variety».

(Plutarch., Stoic. rep. 1044d)

A multi-faceted approach

The most spectacular is not necessarily the safest and the most effective. What we know could be not enough.

Integrations of methods and interdisciplinarity are required

Populations should always be included in the process of decision-making

Many mosquitoes are not dangerous...