

BLUEPRINT TO RID THE WORLD OF NEGLECTED TROPICAL DISEASES

Neglected Tropical Diseases (NTDs) are a diverse group of communicable diseases that occur in tropical and subtropical conditions in 149 countries and affect more than 1 billion people. These diseases mainly affect populations living in poverty, without adequate sanitation and in close contact with infectious vectors (e.g., mosquitoes) and domestic animals and livestock.

LEVELS OF DISEASE MANAGEMENT¹

CONTROL

The reduction of disease incidence, prevalence, morbidity or mortality to a locally acceptable level as a result of deliberate efforts. Continued intervention measures are required to maintain the reduction.

Examples of NTDs that may be possible to control: Buruli ulcer, Chikungunya, Dengue, Foodborne trematodiasis, Leishmaniasis, Soil-transmitted helminthiasis, Schistosomiasis



ELIMINATION OF DISEASE

Reduction to a pre-determined threshold of the incidence of a specified disease in a defined geographical area as a result of deliberate efforts. Continued intervention measures are required to prevent reemergence of disease.

Examples of NTDs that may be possible to eliminate: Echinococcosis, Human African trypanosomiasis (African sleeping sickness), Chagas disease, Leprosy (Hansen's disease), Onchocerciasis (river blindness), Rabies, Trachoma, Lymphatic filariasis (elephantiasis)

ELIMINATION OF INFECTION

Reduction to a pre-determined threshold of the incidence of infection caused by a specific agent in a defined geographical area as a result of deliberate efforts. Continued measures to prevent reestablishment of transmission are required.



ERADICATION

Permanent reduction to zero of the worldwide incidence of infection caused by a specific agent as a result of deliberate efforts. Intervention measures are no longer needed.

Examples of NTDs that may be possible to eradicate: Dracunculiasis (Guinea worm disease), Taeniasis/cysticercosis



EXTINCTION

Permanent reduction to zero of the disease-causing agent. The specific agent no longer exists in nature or in the laboratory.

Example: None; laboratory samples of disease-causing agents are maintained for research and safety



FRAMEWORK TO ASSESS THE ERADICABILITY OF A DISEASE²



IS ERADICATION SCIENTIFICALLY FEASIBLE?

Criteria for consideration:

- Epidemiologic susceptibility (e.g., no nonhuman reservoir, ease of spread, naturally induced immunity, ease of diagnosis)
- Effective, practical intervention available (e.g., vaccine, curative treatment)
- Demonstrated feasibility of elimination (e.g., documented elimination from island or other geographic area)



IS THERE POLITICAL WILL AND POPULAR SUPPORT?

Criteria for consideration:

- Perceived burden of the disease (e.g., extent, deaths, other effects; relevance to rich and poor countries)
- Expected cost of eradication
- Synergy of eradication efforts with other interventions (e.g., potential for added benefits or savings)
- Need for eradication rather than control

1. Dowdle, WR. 1999, December. The Principles of Disease Elimination and Eradication. MMWR, 48(SU01);23-7. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/su48a7.htm>.

2. Hopkins, DR. 2013, January. Disease Eradication. N Engl J Med, 368;1:54-63. Retrieved from <http://www.nejm.org>.