

1. INTRODUCTION

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1.1 The Need for Research—The Need for a Strategic Plan for Research

The GPELF, now four years old and clearly demonstrating its enormous potential value to the poorest sectors of the developing world, already represents a societal investment measured in the tens of millions of dollars. Despite great progress in scaling up this program (currently active in 38 of the 80 endemic countries), or perhaps even because of this progress, there is one critical element for ultimate program success that is increasingly being neglected; namely, research.

It was the dramatic research success in developing effective tools and strategies during the 1980s and 1990s that provided the foundation and rationale for the GPELF, and it is widely appreciated that a mark of all successful public health programs is the continuing involvement of an active research community capable of providing solutions both to program problems as they arise and to anticipated problems or barriers that might arise during program activities. Indeed, such research, while essential for any successful control program, must be especially vigorous and focused in programs (such as the LF program) with a time-limited goal of disease elimination. Furthermore, for diseases such as LF, the neglected 10/90 diseases of poverty, where research funds are particularly limited, it is especially critical that research needs and research initiatives be clearly identified and effectively prioritized.

Research in filariasis is currently supported to various degrees by a number of funding organizations, but there is general agreement that better definition and prioritization of the research needs and opportunities (essential for the development of a strategic plan) would be extremely helpful, not only to the GPELF for developing the solutions it needs, but also both to researchers for identifying research opportunities and to funding agencies for understanding exactly how their investments fit into the overall horizon of LF research needs. Therefore, with the encouragement and support of a number of concerned organizations and agencies a Forum for LF research was organized (Annex 1) to review ongoing filariasis research, to identify promising research opportunities (both practical and fundamental) not currently addressed, and ultimately to provide the basis of a sound and widely agreed strategic plan for LF research to be developed by the World Health Organization (WHO) during 2005.

1.2 GPELF's Strategic Plan for Program Activities and Its Achievements to Date (2004)

In 1997, the World Health Assembly adopted a formal Resolution (50.29) calling on all Member States to work “toward eliminating lymphatic filariasis as a public health problem” and requesting the Director-General “to mobilize support for global and national elimination activities.”

In 1999, a Strategic Plan for implementing this Global Program was agreed by the community of partners supporting the initiative (later affirmed at the First Global Alliance meeting in 2000), with the following focus:

- Goal: Elimination of LF as a public health problem by 2020
- Aims:
 - To reduce and eliminate transmission of LF,
 - To reduce and prevent morbidity (suffering and disease) in affected individuals,
 - To provide, through use of albendazole, a deworming benefit to endemic populations,
 - To provide a strengthening benefit to the national health services,
- Targets:
 - Transmission (five-year target): annual MDA increasing progressively to cover 200 million people by 2004,
 - Morbidity (two-year target): training materials, activities and networks in place in all countries with on-going LF elimination programs,
 - Ancillary benefits (two-year target): well-monitored pilot programs linking LF elimination with intestinal parasite control, immunization and other health-delivery programs.

In 2002, the Strategic Plan for program activities was reviewed at the Second Global Alliance meeting and revised as follows:

- Targets:
 - Transmission (by 2005): annual MDA scaled-up to cover 350 million people in 46 countries,
 - Morbidity (by 2005): 50% of programs (i.e., 23 countries) have strategy in place for disability prevention,
 - Program (by 2005): technical and management capacity in place to support ELF activities; monitoring, evaluation, and impact assessment complete in 15 countries; resources sufficient for meeting targets.

In 2004, the Strategic Plan was reviewed at the Third Global Alliance meeting and again updated, as follows:

- Targets:
 - Transmission (by 2010): annual MDA initiated or completed in all at risk areas of all 80 endemic countries; (by 2015) transmission interrupted in all endemic countries,
 - Morbidity (by 2010): disability programs established in all endemic countries; (by 2020) home-based self-care for all patients with lymphedema or surgery for all with hydrocoele,
 - Program (by 2010): interruption of transmission verified in 10 countries; (by 2020) surveillance in place for children born after 2015 to verify absence of transmission in all formerly endemic countries.

Progress by 2004 towards achieving the targets of numbers of countries and people undergoing annual MDAs as part of the GPELF is shown in Figure 1.

1.3 Research Activities Necessary to Support the GPELF

There are two, and only two, essential elements in determining whether an infection (or disease) is eradicable. Nei-

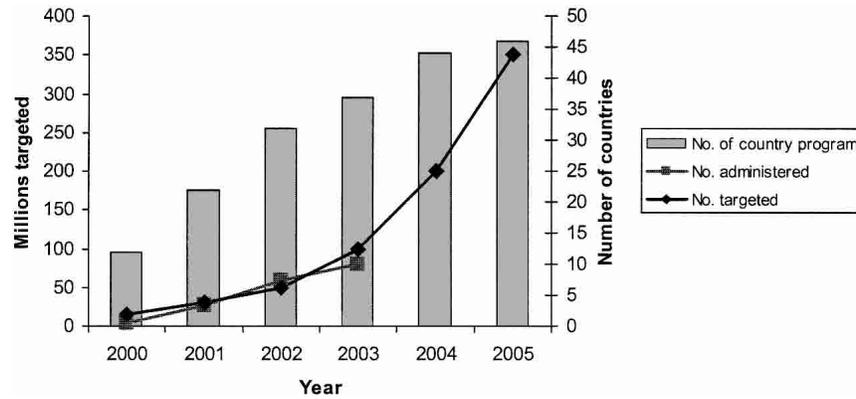


FIGURE 1. Progressive increase in the number of countries with active programs to eliminate lymphatic filariasis, the number of two-drug treatments delivered by mass drug administration each year, and the number of individuals projected for inclusion in the Global Program through 2005.

ther is a biologic determinant; instead, both are tools that can be created through research efforts.* The first is an effective intervention tool (to get rid of the infection) and the second is an effective diagnostic tool (to recognize when the infection is gone and to detect it if it begins to reappear).

*Ottesen, E.A., Dowdle, W.R., Fenner, F., Habermehl, K.-O., John, T.J., Koch, M.A., Medley, G.F., Muller, A.S., Ostroff, S.M., Zeichhardt, H. (1998) Group Report: How is eradication to be defined and what are the biological criteria? in Dowdle, W.R. and Hopkins, D.R., *The Eradication of Infectious Diseases*, John Wiley & Sons, Chichester, U.K. pp. 47–59.

Therefore, in the following consideration of the most important research needs and opportunities related to filarial disease, these two issues are presented first, followed by those research needs related to implementing the LF elimination program, evaluating it, and integrating it with other public health initiatives. Finally, since a firm science base of related, but more upstream, research must underlie all such program-oriented acquisition of knowledge (operational research), the more fundamental issues of pathogenesis, protective immunity, and genomics/proteomics are addressed as well. Each section begins with a summary of the prioritized research needs followed by an overview of the issue and the rationale underlying those identified needs.