

The impact of research for implementation:

One of a series of case studies.

2 Case study 2: Reducing deaths with bednets

THE PROBLEM

Research conducted in the 1990s showed that using insecticide-treated bednets reduced childhood mortality by up to 33%.^{1,2} It was a game-changing finding, but it led to a new question: How could these bednets be scaled up to millions across all the countries at risk for malaria?³

In 1999, the United Nations Children’s Fund and World Health Organization set the goal of providing 32 million bednets and 320 million bednet treatments per year for the following ten years to protect 80% of African households against malaria.⁴

THE APPROACH

Ensuring access to millions required work on many fronts. A number of research studies provided solutions to the many challenges to scale-up; these included the cost, availability, practicality, and acceptability of bednets in different settings. A few examples illustrate the range of studies that fall under research for implementation.

Helping people understand the value of the bednets was a first critical challenge,^{5,6} which included motivating them to get the nets, care for them, and use them. Social research identified the motivators—it was not so much a concern about malaria but about the nuisance of being bitten by mosquitoes. That knowledge was built into

This is one of several case studies outlining the scope and impact of “research for implementation.” These were originally published in the report, **Bridging the gaps in malaria R&D: An analysis of funding—from basic research and product development to research for implementation.** It summarized the findings of a pilot study comparing this field to funding for basic research and product development.

The full report can be freely downloaded here: <http://www.malariavaccine.org/resources/reports/investigating-second-valley-of-death-malaria-rd>

educational materials, focused on giving families peace from the mosquitoes.⁷

Even the color and shape of the nets became a research topic.^{8,9} Scientists found that the color affected how often nets were washed (more frequent washing reduced the effectiveness of the nets) and even whether they were used.

The insecticide needed to be re-applied to the bednets. In Tanzania, communal “dipping days,” when nets were dipped in insecticide, were not working. A study thoroughly tested a set of instructions for safe and effective use of the treatment kits, even where literacy was low, in both urban and rural communities. The instructions were adopted by two social marketing projects. “Dipping it yourself” became the new way to have bednets effectively used.¹⁰

In The Gambia, the government introduced the National Impregnated Bednet Programme in 1992. A study examined the impact of a variety of activities, such as sensitization sessions, an educational campaign, staff training, and supply ordering and distribution. At the end of five months, overall bednet use was 73% and 83% of the nets had the correct amount of insecticide. More importantly, 25% fewer children between the ages of 1 and 9 died within the first year of intervention.¹¹



© WHO, S. Hollyman. A woman hangs a mosquito net in the temporary dwelling in the fields (chamпка) that she and her husband are clearing to farm, Cambodia.



© WHO, Kisumu, Kenya.

Costs for the bednets and the insecticides became a concern. People could not afford them, so how could their provision free of charge be justified?^{12,13} Research showed that the economic losses from malaria would be reduced by 37% over a three-year period in Malawi, while in Cameroon, a 9% to 11% reduction in the need for care was expected—justifying free distribution.¹⁴ In The Gambia, research showed that distributing free insecticide through maternal and child health visits would reach the most vulnerable—young children—and that sales through private shops could reach others.¹⁵

In Latin America, research investigated the role of community and found that the local manufacture of bednets and their sale through village health workers, even in communities with low cash income, were viable ways of increasing bednet coverage.¹⁶



© WHO. Community members build low-cost window and door screens in Colombia.

THE IMPACT

Today, bednets are attributed with saving millions of lives. Since 2000, 663 million cases of malaria have been prevented due to the combined effect of all approaches, with bednets contributing to 68% of the impact.¹⁷

Research for implementation—using a broad range of approaches encompassing implementation, operational, social, and economic research—took what was identified as a very effective tool and leapfrogged over deep systemic and logistical challenges to get it into the homes of millions of the most vulnerable across the world. The evidence generated by research for implementation was critical to mobilizing the funding for free bednets, expanding distribution schemes, generating investments in the diversity of products now available, and increasing capacity to continue these efforts at all levels.



© WHO/S. Hollyman. A man and his mosquito bednet, United Republic of Tanzania.

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