

Case 44

The Tropical Disease Program

Edna McConnell Clark Foundation, 1974

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Background. The Edna McConnell Clark Foundation first became interested in international grant-making in the early 1970s. The Foundation searched for a niche in which it could leverage a modest commitment of funds for the achievement of maximum impact.⁶⁶² Health care seemed too broad a field, but the senior staff (including Jim Henry, the Foundation's president) felt that tropical disease research could be just such a niche. To that end, EMCF convened a workshop of practitioners to identify which disease(s) should be targeted. According to Donald Hoffman the officer in charge of exploring international grant-making opportunities, "we chose schistosomiasis for several reasons. It was not so distant a goal as to be hopeless.... [And limited] Research was already underway . . . so there was already a good cadre of researchers who were the nucleus."⁶⁶³

The Foundation did not become involved in trachoma and onchocerciasis ("oncho") research until several years later. Following the Board's decision, in 1981, gradually to phase out of "schisto" research, a series of exploratory grants were made to identify new funding niches for the Foundation in the field of Tropical Disease Research. Two infectious causes of blindness—Trachoma and "oncho"—were selected, because they were consistent with the Foundation's previous work, did not appear intractable, but were not, at the time, receiving significant support from other funders.

Strategy.

Schistosomiasis

Between 1974 and 1994, EMCF invested \$32.4 million in schistosomiasis research. The Foundation's initial goal was the development of a vaccine,⁶⁶⁴ but its schisto program had three main components: immunology and vaccine development, epidemiology and control, and biochemistry and drug development. In following these three paths, EMCF acted as a catalyst for increased research, funding scientists and conducting workshops with governments, international organizations, and the scientific community.

As the Foundation's Retrospective Report explains, EMCF chose not to "seek to use communication systematically to develop a more committed public constituency for schisto research, or for bringing down the price of [available treatments]."⁶⁶⁵ This decision reflected a belief among the Foundation's trustees that high-quality research would speak for itself. Over time, however, experience convinced the Foundation—and helped demonstrate for later funders—that effective outreach was a necessary component of health research, and, as a result, EMCF's later work on trachoma included extensive communications efforts.

Onchocerciasis

Between 1985 and 1998, the EMCF invested \$21.5 million in onchocerciasis research. Again, the primary focus was on developing a vaccine. To that end, the Foundation employed a "tight rifle shot" approach in antigen screening. It was recognized, at the time, that this approach carried a "greater risk of failure than a broader one."⁶⁶⁶ In addition, however, the Foundation—as it had with schistosomiasis—funded the development of a cadre of researchers focusing specifically on oncho and related conditions.

Trachoma

Between 1983 and 1999, the EMCF invested \$21.8 million in trachoma research. EMCF's strategy for trachoma was "heavily guided by the staff's experience" with schistosomiasis. This enabled the Foundation to employ lessons learned in designing and carrying out this new research. As noted above, for example, EMCF employed a far more active communications strategy this time around, funding the creation and distribution of publications describing trachoma, its risks, and what could be done to prevent it. In December 1996, the EMCF and other interested organizations gathered to form the WHO Alliance for the Global Elimination of Trachoma. The group adopted a WHO-proposed strategy for treating trachoma. That strategy—SAFE (Surgery, Antibiotics, Face-Washing, Environment)—targeted individual communities, where it has been seen as tremendously successful. The groundwork for this development had been laid by a number of actors. Among these was the Clark Foundation, which "had earlier supported risk factor studies" to establish and field test the efficacy of each of these four measures.⁶⁸⁷

Originally, the Foundation worked on epidemiology and control of the disease. In particular, EMCF funded studies to demonstrate that a Pfizer drug, Zithromax, was effective in treating trachoma—far more effective, in fact, than the existing antibiotic ointment remedy.⁶⁸⁸ The Foundation, with its own resources and with support from the National Institutes of Health, collaborated with Pfizer, stimulating the company's interest in trachoma.⁶⁸⁹ Noting the positive impact that Merck's drug donations had had on onchocerciasis (see next page), the Foundation worked to convince Pfizer to donate Zithromax for the treatment of trachoma.⁶⁹⁰ A 1992 Program Update explained that EMCF hoped "to capture Pfizer's interest and good will and [capacity for] humanitarian benefit..."⁶⁹¹

By 1994, the EMC staff had concluded that an independent research center, supported by donations from private funders, could most effectively navigate the various hurdles impeding the eradication of trachoma. Such an institution would also become the primary locus of a critical mass of trachoma research that would be more likely to sustain itself without major support from the Edna McConnell Clark Foundation. To that end, the EMCF moved away from epidemiology and control, and, instead, began to focus on attracting new funders and drawing attention to the cause.⁶⁹²

Outcomes.

Schistosomiasis

The Edna McConnell Clark Foundation provided one-third of all schistosomiasis research funding between '74 and '94. While the Foundation did increase scientific and governmental engagement with the disease, it did not achieve its primary goal of developing a vaccine, despite twenty years of involvement. Nonetheless, it laid the ground for future schisto research, such as that now being funded by the Gates Foundation.

Onchocerciasis

The EMCF recognizes that its "tight rifle approach" to oncho research carried several high opportunity costs. One of these was that it led the Foundation to decline to collaborate with Merck in distributing that company's oncho treatment, Mectizan. "In 1987, a major treatment breakthrough occurred when Merck decided to donate ...Mectizan, which made it possible to treat onchocerciasis safely, effectively and with a single dose."⁶⁹³ The Foundation's efforts to develop a vaccine did not ultimately prove successful, and in 1994, the Foundation decided to shift its oncho research "to support for program facilitation rather than direct research..."⁶⁹⁴ In 1998, the Foundation gave out its last oncho grants.

The Foundation felt that the increased number of oncho researchers, the "rich publication legacy,"⁶⁹⁵ and the forward movement in the direction of a vaccine (at some point in the future) were positive outcomes. Just as significantly, the Foundation did leave behind some self-sufficient R & D

infrastructure—probably more so than with schistosomiasis. The European Union, for example, has committed funds to oncho research, as have several other international organizations.

Trachoma

In 1998, the Clark Foundation partnered with Pfizer to found the International Trachoma Initiative, an independent organization dedicated to advancing the SAFE strategy in five countries, and, in particular, to forming partnerships among international agencies, governmental and non-governmental organizations. ITI has expanded its operation steadily, and is now active in sixteen African countries. Furthermore, its success has attracted new funders, including the Gates, Rockefeller, and Starr Foundations. Pfizer has contributed some \$266 million to the Initiative, which is on its way to self-sufficiency.⁶⁸²

Impact. Throughout the 1970s, '80s, and '90s, the Edna McConnell Clark Foundation—in an effort to eradicate schistosomiasis, onchocerciasis, and trachoma—provided major research and development support. During these years the Foundation was the dominant funder of efforts to prevent and control these diseases. EMCF collaborated extensively with the National Institute of Allergy and Infectious Diseases (a division of NIH) and the World Health Organization, but the Foundation's own appropriations for this work were always at least twice those of the WHO. A significant body of research was produced, a cadre of scientists was recruited to the field, and progress toward vaccines was advanced.

However, the Foundation did not meet its primary goal in either schisto or oncho research: the development of a vaccine. Inspired by advances like the Salk vaccine for polio, the Foundation underestimated the difficulty of developing a vaccine. As Dr. Joseph Cook, who worked on the schistosomiasis program, commented, “[w]e had very definite goals and expectations to do certain things by a certain time. Not all were successful... Immunologists would tell us that a vaccine was about five years away. The problem was, they told us that every five years.”⁶⁸³ It seems likely that, at times, the narrow focus on vaccine development caused the Foundation to miss other opportunities along the way.

To its credit, however, EMCF learned from past mistakes and continually refined its strategy. And in the case of trachoma research, the Foundation adjusted its focus away from vaccine research when it realized that it could make more of an impact working with Pfizer and the WHO to eliminate trachoma. The SAFE strategy has proven highly effective. And while no one organization can take full credit for its development, EMCF was certainly a lead contributor.⁶⁸⁴ And the ITI—which EMCF spun off as an independent entity when the Foundation adopted a new strategic focus on Youth Development—has unquestionably been effective in implementing SAFE. Less than three years after the ITI got involved in Morocco, for example, that nation's rate of trachoma infection had fallen from 28 percent of the population to 6.5 percent. The goal laid out at the WHO conference in 1996 was to eliminate trachoma completely by 2020. Currently, the ITI is on track to succeed ahead of schedule. The lessons learned by the EMCF in its first two decades of tropical disease research appear to be paying off mightily. And with schistosomiasis and onchocerciasis, the research and training supported by the Edna McConnell Clark Foundation have paved the road for the efforts still underway to find similarly effective solutions.

Notes

682. The Foundation considered alternative fields, such as disaster relief, but Dr. Donald Hoffman, the officer in charge of international programming and science and technology, and James Henry, the Foundation's president, agreed during a return flight from Nicaragua in 1973 that tropical disease might be an appropriate niche. “The Edna McConnell Clark Foundation's Tropical Disease Research

- Program: A 25-Year Retrospective Review 1976–1999.”
683. Ibid.
684. The examples of the foundation-supported innovations of the Green Revolution, and, in particular, the National Foundation for Infantile Paralysis’ development of the Salk vaccine for polio, suggested to the EMCF that it should focus on vaccine development.
685. The Clark family did not feel it would be appropriate for the Foundation to engage in such public advocacy. Ibid.
686. Ibid.
687. Joseph Cook, e-mail to Scott Kohler, 11/16/2004. Dr. Cook offered clarification and additional detail that aided in the writing of this case. Any errors are, of course, my own.
688. EMCF convened Pfizer, the National Eye Institute, and NIAID “to develop plans for assessing prospects for [Zithromax’s] use in trachoma control.” The use of Zithromax, as a part of SAFE, has greatly enhanced the effectiveness of that strategy. The pre-existing antibiotic treatment was an ointment that required constant reapplication and was, therefore, used inconsistently. Ibid.
689. Cook, e-mail to Scott Kohler.
690. This was a marked contrast from the Foundation’s decision, in oncho research, to eschew collaboration with the pharmaceutical industry, focusing on prevention at the expense of control.
691. “The Edna McConnell Clark Foundation’s Tropical Disease Research Program: A 25-Year Retrospective Review 1976–1999.”
692. Pfizer also preferred to work through an independent, rather than WHO-controlled, institution.
693. “The Edna McConnell Clark Foundation’s Tropical Disease Research Program: A 25-Year Retrospective Review 1976–1999.”
694. Ibid.
695. Ibid.
696. Available from <http://www.trachoma.org/support.asp>.
697. “The Edna McConnell Clark Foundation’s Tropical Disease Research Program: A 25-Year Retrospective Review 1976–1999.”
698. For example, EMCF funded research demonstrated that face-washing can prevent trachoma infection, and EMCF worked with Pfizer to demonstrate the efficacy of Zithromax.