

A.I.D. EVALUATION HIGHLIGHT NO. 12
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Evaluation of A.I.D.'s Child Survival Program in Malawi
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Summary

Malawi's infant mortality rate is among the highest in the world. The rate declined during the 1960s and 1970s, but began climbing again during the mid-1980s, with the spread of chloroquine-resistant strains of malaria. Malaria and its complications are the number one cause of infant and child mortality in Malawi. Other common causes are avitaminosis, pneumonia, measles, and diarrheal diseases.

Since the mid-1980s, A.I.D. has provided about \$44 million in assistance to health and population projects in Malawi. The main objective of A.I.D.'s Program is to strengthen the Ministry of Health to enable it to provide primary health care on a sustainable basis. The A.I.D. Program supports the following key activities: training for Ministry of Health staff; technical assistance in planning, policy development, and financial sustainability; malaria research; construction of rural piped-water systems; AIDS prevention; and family planning.

The positive impact of Malawi's national child survival program can be measured by the success of immunization services, now reaching 80 percent of the population. The program, supported by many international donors, including a small grant from A.I.D., has greatly reduced mortality and morbidity from vaccine-preventable diseases. A.I.D. support has also increased the coverage of piped-water services in rural communities throughout the country. HIV/AIDS awareness and prevention activities supported by the Agency are experiencing initial successes as well.

On the negative side, however, previously successful malaria services have lost their effectiveness because of the spread of resistant strains of malaria. The Malaria program is in the process of switching to alternative medications to combat the new strain. Also, the use of oral rehydration therapy to treat diarrheal diseases is low, as is use of family planning services to reduce high-risk births. New A.I.D.-financed staff training and institutional strengthening activities are under way, but will not have measurable impact until the mid-1990s. Overall, economic analysis shows that the A.I.D. Child Survival Program, by saving the lives of children who become productive adults, more than returns the Agency's financial investment.

Background

In the mid-1980s, A.I.D. responded to a U.S. congressional initiative by focusing its health sector programming on child survival. The typical child survival approach uses simple, low-cost health technologies to produce quick, massive impact on high infant mortality rates. The objective of the worldwide A.I.D. Child Survival Program was to reduce the average infant mortality rate in A.I.D.-assisted countries from the 1985 figure of 97 deaths per 1,000 live births to fewer than 75.

Malawi, with its high infant and child mortality rates, is one of 22 countries A.I.D. selected for special attention under its Child Survival Program. According to a 1987 census, Malawi's infant mortality rate is 159 deaths during the first year of life for every 1,000 live births.

The causes of child deaths are shown in Figure 1. Malaria is the most prevalent disease reported in all age groups and the number one cause of morbidity and mortality among children. Malaria and malaria-linked anemia together account for 32 percent of all child deaths. Furthermore, the incidence of malaria is increasing, and malaria infection rates are now in excess of 50 percent of Malawian children. Before 1980, efforts to control malaria included case management through health facilities and provision of chemoprophylaxis (primarily chloroquine) for pregnant women and children. However, in the mid-1980s, chloroquine-resistant strains of malaria appeared and became prevalent.

While pediatric AIDS is not yet a major factor in child survival, HIV/AIDS is spreading rapidly in Malawi. The Ministry of Health projects as much as a 34-percent increase in AIDS-related child mortality by the year 2002.

Chronic malnutrition affects 56 percent of children under age 5 years in rural Malawi, and high-risk births are common because of the high birthrate. Moreover, low levels of education and literacy, especially among women, make it difficult to change traditional hygiene, nutrition, and health practices.

A.I.D.'s Approach

During the early 1980s, before A.I.D.'s Child Survival Program got under way in Malawi, the Agency provided staff training and infrastructure support to the Ministry of Health through bilateral health projects totalling \$16 million. In the mid-1980s, several centrally managed A.I.D. health projects provided funding for studies, hospital construction, technical assistance, training, and supplies to enable the Ministry of Health to better respond to malaria and diarrheal diseases.

During the late 1980s, A.I.D.'s evolving child survival strategy in Malawi sharpened its focus on three areas. First, the A.I.D. Program began to emphasize policy dialogue with the Malawi Government to redress the imbalance between curative and preventive health care services. Second, A.I.D. focused on

development of sustainable health institutions, rather than on direct delivery of health services. Third, A.I.D. resources were directed toward controlling malaria, lowering Malawi's high fertility rate, and reducing the spread of AIDS.

A.I.D. grant assistance to Malawi's health sector is valued at approximately \$44 million, the planned life of project budgets for ongoing projects. A.I.D.'s Child Survival Program has more than 20 activities that can be grouped into five program categories: (1) integrated and multisectoral projects, (2) private voluntary and nongovernmental organizations (PVO/NGO), (3) family planning, (4) AIDS prevention, and (5) other health activities.

Findings

CDIE evaluated the effectiveness, impact, efficiency, and sustainability of the A.I.D. Child Survival Program in Malawi. The findings of the study are summarized below.

Effectiveness

To assess the effectiveness of the A.I.D. Child Survival Program, CDIE reviewed (1) the extent to which health services were actually reaching target beneficiaries and (2) the extent to which the institutional capacity to deliver and sustain health services was being strengthened. Of the two activities, A.I.D. has focused more on expanding Malawi's institutional capacity because other donors already support most of the health services, such as vaccination.

Nevertheless, the Agency's Program has directly supported several specific health interventions. One such effort is malaria control. Since 1984, A.I.D. has been the primary donor to the Malawi malaria control program, including a national effort in 1985-1989, which emphasized the use of chloroquine for malaria treatment and prophylaxis. Initially, the chloroquine program was successful. Chloroquine is now consistently available throughout the country, and hospitals and health facilities correctly follow malaria treatment and prophylaxis procedures. But despite the program's success, the incidence of malaria is increasing again with the recent spread of chloroquine-resistant strains.

A.I.D.-supported research prompted the Malawi Government to switch to a new drug, Fansidar, but implementation of this change is just beginning and the drug's effectiveness is not yet known.

A.I.D. is also funding the construction of potable water systems and promotion of hygiene education and sanitation. Between 1980 and 1988, A.I.D. supported construction of 18 piped water schemes, reaching a population of 421,800 people in more than 1,400 villages. Another A.I.D. project provided community-level health education, latrines, and washing slabs. In the 13 geographic areas where this project was active, 64 percent of families had latrines after the effort was completed, compared with 35 percent before.

Another health service supported by A.I.D. is the Malawi National AIDS Control Program. Through various small projects, A.I.D. provides technical support, in-service training for health workers, AIDS education in schools, monitoring and surveillance activities, and condoms. The program has generated a widespread increase in AIDS awareness. AIDS posters can be seen throughout the country at health facilities, on public buildings, and in communities. Health workers now know the signs, symptoms, and preventive measures for HIV/AIDS. From 1990 to 1991, the number of A.I.D.-provided condoms increased from 200,000 per year to 3.7 million.

With regard to child spacing, A.I.D. supports contraceptive supply, computer modeling and policy dialogue, voluntary surgical contraception, and operations research in community-based contraceptive distribution. More than 900 health workers have been trained as child-spacing service providers, although only about half are currently providing this service. The number of health facilities offering child-spacing services has grown from 1 in 1984 to 210 in 1991, representing about one-third of Malawi's 748 health facilities. Service statistics show a steady and accelerating increase in the number of couples practicing contraception. Contraceptive prevalence has increased from 1 percent in 1984 to as high as 10 percent in urban areas in 1991.

A.I.D. also directly supports child survival services through PVOs. The Agency provides grant funding to five PVOs to provide integrated maternal and child care services at the community level in different geographic regions of the country. The different PVOs have different approaches. For example, one PVO is working with private tea estates to improve health services for employees and their dependents. Another has led the way in introducing vitamin A as a basic preventive health intervention.

Malawi has a strong immunization program, with coverage rates reaching about 80 percent in 1990 (see Figure 2). UNICEF is the lead donor for immunizations; A.I.D. does not usually provide direct support for the operational expenses of this program. In 1992, however, UNICEF faced funding problems, and A.I.D. made a grant to UNICEF covering about one-third of Malawi's annual budget for immunizations. Without this support, national coverage rates could have dropped from around 80 percent to 60 percent or lower.

The use of oral rehydration therapy for controlling diarrheal diseases is low in Malawi. At present, UNICEF is the principal donor supporting oral rehydration therapy, but the service is plagued by administrative problems, low policy priority, and logistical constraints. A.I.D. may decide to join UNICEF and other donors in an effort to improve oral rehydration services. Although support for the delivery of health services is an important part of the A.I.D. Child Survival Program, it is not the program's principal focus. More important is A.I.D.'s technical assistance for strengthening the institutional capacity of Malawi's Ministry of Health so it can provide effective,

sustainable primary health care. Activities to develop institutional capacity, unlike subsidies for direct delivery of services, produce long-term, permanent benefits, rather than immediate impact, making the assessment of impact difficult in a program as young as Malawi's. The evaluation team's findings therefore offer only a preliminary assessment of the progress of these activities.

A.I.D. is supporting capacity-building efforts in the Ministry of Health in four areas: training, planning, information, and communication.

A.I.D. is providing training for new health surveillance assistants, a category of community-based health workers with broad responsibilities for preventive and basic health services and the collection of health information. The objective of the training program is to increase the number of assistants by a factor of eight, from the current level of 500 to 4,000. At the time of the CDIE evaluation in 1992, trainers had been recruited, curriculum development was under way, and the first round of training had been conducted for 170 health surveillance assistants around the country. Reports concerning the quality of the 6-week training program have been generally positive. A.I.D. is also supporting new in-service paramedical training in primary health care, child spacing, and HIV/AIDS at the Lilongwe School of Health Sciences for Ministry of Health professional staff. To date, of the targeted 2,500 health workers in Malawi, more than 900 have been trained in child spacing and 800 have been trained in HIV/AIDS control.

In order to strengthen the Ministry of Health's planning capabilities, A.I.D. is helping the Ministry establish a Manpower Development Unit to solve critical staffing problems. The unit will create new career opportunities and will organize training programs. At the time of the CDIE evaluation, the unit had been formally established, staff had been hired, and data collection and training activities had begun. A.I.D. is also assisting various Ministry of Health administrative units to develop realistic annual workplans.

A.I.D. is assisting the Ministry of Health in three areas relating to information: research, epidemiology, and health information. A new research unit has been established, three five-member teams of investigators have been trained, and three major research activities have been designed and initiated. Also, A.I.D. has funded assistance from the U.S. Centers for Disease Control for operational research, especially in malaria control.

Finally, in the area of communication, the A.I.D. program has supported the production and pretesting of health education materials for child survival. Recruitment is under way for additional staff, including health educators for each of the 24 districts. A.I.D. has also provided graphics equipment and supplies.

Impact

"Impact" refers to long-term, permanent improvements in child survival conditions. The key indicators of impact are infant and child morbidity and mortality rates. Statistical information on infant and child morbidity and mortality in Malawi comes mainly from records concerning hospitalized patients a small and nonrepresentative sample. The full impact of the national Child Survival Program, to which A.I.D. is one of a number of contributors, could not be accurately measured based on the information available. A planned A.I.D.-supported Demographic and Health Survey in 1993 will provide much better information on a range of family health conditions.

However, based on the recently released 1987 census estimates, it is clear that national infant and child mortality rates during the past decade have not been declining at the same rate as in the 1960s and 1970s. In fact, infant mortality is actually increasing due to the resurgence of Malaria (see Figure 3).

Significant progress has been made against some causes of infant mortality. Malawi's immunization rates are higher than those in most of East and Southern Africa, and the country has continued to make progress since the early 1980s. As a result, rates of infection have declined. For example, between 1985 and 1989, the rate of measles infection among children under 5 years declined by half, from 707 to 327 cases per 10,000 children. Similarly, morbidity rates from diarrheal diseases showed a 50-percent decline between 1980 and 1989. Unfortunately, progress in some areas has been offset by new health problems that are causing infant mortality to rise. Mortality from malaria began to increase rapidly in the late 1980s, growing from 11 percent of child deaths in 1985 to 19 percent in 1990. Immediate, effective solutions to the malaria problem are not in sight, despite Malawi's leading role in research on malaria epidemiology and treatment.

Hope for future improvement in child survival rates has also been diminished by the advent of the AIDS epidemic, whose impact is just beginning to be felt in Malawi. Although no one can predict with certainty the magnitude of its adverse effect on child survival, AIDS-related deaths are certain to increase over the next decade.

A.I.D.'s child survival interventions seem to be having other positive permanent effects, independent of local institutions and other donors. For example, preliminary evidence indicates that the incidence of water-borne diseases such as schistosomiasis, trachoma, and childhood diarrhea has declined with the use of A.I.D.-supplied piped water. However, statistics are so poor and the program is so new that conclusive, empirical evidence of overall impact will not be available for several years. The possible impact of A.I.D. activities to prevent HIV/AIDS transmission cannot yet be assessed because of the early stage of the disease in Malawi. The potential impact on infant and maternal mortality of A.I.D.-supported child-spacing activities is considered to be very positive, but the program has not

matured to the point where impact can be observed. Similarly, the permanent effect of A.I.D.-supported institution-strengthening activities will not become evident until the project nears completion in the mid- to late-1990s.

Efficiency

Improvements in children's health status in other countries have led to reductions in health-care expenditures, increases in labor supply and productivity, decreases in school absenteeism with higher returns to education, and increases in the savings rate and capital formation. These intermediate outcomes can contribute to economic growth.

Using a "human capital" analysis, the evaluation team found that, even using very conservative estimates, reductions in infant mortality resulting from the Child Survival Program warrant A.I.D.'s level of investment in Malawi because of the increased earnings survivors will generate. If the child mortality rate can be reduced from the current 257 deaths per 1,000 births to between 214 and 240, then the threshold level of benefits necessary to justify A.I.D.'s expenditures on economic grounds will have been reached.

Sustainability

Financial and institutional sustainability of child survival services are major objectives of A.I.D. assistance to Malawi's health sector. Currently, primary care is heavily dependent on external donors, because Malawi Government resources are primarily being used to support curative hospital health services. The success of A.I.D.'s long-range strategy to promote changes that will bring about more sustainable primary health care will not be measurable until the late 1990s.

The evaluation team found that most of A.I.D.'s health activities completed before 1989 have been sustained by the Malawi Government or other donors. One example is the piped water systems, which continue to provide water to communities because they are maintained through a well-functioning system operated jointly by the Ministry of Works and village tap committees. However, since most components of the Child Survival Program continue to receive support from donors under follow-on projects, it is difficult to determine how well projects will be sustained with local resources if external assistance decreases.

More important than immediate progress toward sustainable services in Malawi is progress toward the long-range A.I.D. objective of strengthening local institutions so they can provide a full range of basic services on their own. In addition to overall institution strengthening, the A.I.D. Program is supporting three initiatives to improve the prospects for financial sustainability. The first is A.I.D. policy dialogue with the Malawi Government to encourage increased budgetary support for health so the Government can eventually assume the recurrent costs of project activities. The second initiative is

an effort by A.I.D. to increase cost-recovery through fees for curative services in the three major hospitals. While the potential for raising funds through service fees is not great, it appears that enough money may be recoverable to at least contribute a significant share of the cost of preventive services. The third approach to financial sustainability is private sector provision of services. The Private Hospital Association of Malawi, through A.I.D.-assisted PVOs and religious organizations, currently provides one-third to one-half of health services. These private facilities charge fees for curative services but their preventive services are free thanks to a Government subsidy. Overall, these facilities make a significant contribution to providing health services, but their financial status is precarious. Greater privatization in the sense that health institutions could become more self-financing by charging additional service fees does not appear feasible.

Conclusions

The CDIE evaluation of the A.I.D. Child Survival Program in Malawi reported a number of general conclusions including the following:

*Malawi's strategy of integrating multiple child survival services (e.g., immunization and oral hydration therapy) into its national public health care system is a feasible alternative to the strategy used in other countries of providing separate "vertical" health services.

*Permanent institution-building in the health sector can be a central focus of A.I.D. child survival programming, especially when other donors are willing to provide operating subsidies to support day-to-day delivery of health services.

*Child survival programs in extremely poor countries require sizable investments and long-term commitment on the part of donors. In the case of Malawi, the CDIE assessment shows that the country's poverty seriously constrains the quality and quantity of health services, but nonetheless that child survival programs may still produce solid health impact and a positive rate of return on A.I.D.'s investment.

*A.I.D. child survival programming should be flexible, reflecting country-specific child survival strategies and interventions. The CDIE assessment shows that localized health conditions such as malaria and AIDS may be critical threats to child survival in specific countries, sometimes more serious than the problems identified by the worldwide program (e.g., diarrhea and vaccine-preventable diseases).

Outstanding Issues

A number of important questions arose in the course of the CDIE assessment that indicate where additional research, policy clarification, or experience is needed to further improve the performance of A.I.D.'s program. These unresolved questions

include the following:

*Should financial sustainability be a program objective in extremely poor countries? Health needs are usually more urgent in countries like Malawi than in other less-poor countries, but achieving full, local financing of basic public health services is more difficult and less likely.

*Should A.I.D. require demonstrated progress in establishing adequate primary education opportunities for women as a precondition to providing child survival assistance? As is the case in many other countries, women's educational attainment in Malawi proved to be a critical element in improving the health status of families.

*Should the A.I.D. Child Survival Program devote more resources to research? In Malawi, simple, inexpensive interventions are not currently available to deal with some of the most serious threats to child survival, including malaria, HIV/AIDS, and pneumonia. How and to what extent should A.I.D. support research that might lead to more cost-effective interventions for addressing such conditions?

This A.I.D. Evaluation Highlights was prepared by senior social scientist Richard Martin of the Center for Development Information and Evaluation. The Highlights summarizes the findings of a CDIE sponsored field evaluation of the A.I.D. Child Survival Program in Malawi in May 1992. The evaluation of the Malawi Program is one in a series of six CDIE country case studies comprising the assessment of the A.I.D. Child Survival Program.