

What's Worked? Accounting for Success in Global Health

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Foreword

There is little doubt about the magnitude of those problems: Combined, AIDS, malaria and tuberculosis kill six million people each year in developing countries, and another seven million children die of infectious diseases that have long been forgotten in the rich world. This represents both the humanitarian tragedy of lives cut short and the loss of productivity that puts a nearly insurmountable drag on any chance of economic growth.

Does anything really work to solve profound health problems that face poor countries? Does development assistance from rich countries make any difference at all? Under the auspices of the Center for Global Development's Global Health Policy Research Network, we invited 15 experts in international health, development economics, public policy and other relevant fields to identify and examine experiences of large-scale success in international health – national, regional or global programs that worked to improve health. To find those cases, we collaborated with the Disease Control Priorities Project of the National Institute of Health, and solicited nominations from many of the world's leading health authorities. The conclusions of the "What's Worked in Global Health" Working Group leave little doubt that some efforts to save lives and livelihoods through health interventions have worked, and have done so at remarkably low cost compared to the benefits.

This volume tells the stories of 17 of these successes. These stories (or, more formally, the evidence-based cases) show that major public health efforts can and have changed the world for the better – well beyond what would have occurred through income growth alone. The magnitude and profundity of current health challenges facing the developing world – from AIDS to chronic malnutrition to the looming threat of tobacco-related cancers – can seem daunting. But past challenges have been surmounted and serve as object lessons: Even in countries with few financial resources and limited health infrastructure, sensible and systematic efforts to improve health have worked.

Looking toward the future, the stories told here suggest essential elements of success. At a time when the international community is scanning the horizon for hints about how to "scale-up" health programs and systems to accelerate progress toward better health for the world's poorest children and their parents, a close look at these successes can tell us what factors may need to be in place today – individually or in combination – to increase the chances that "scaling-up" will work.

This effort puts to rest the notion that nothing works in global health. But it raises new challenges to tackle: The first is how we make sure there are more and even bigger successes in the future. If the humanitarian impetus isn't enough, surely the knowledge that economic progress is hastened by health improvements should spur scientists, public health workers, government officials and funders to action. The second is how we make sure that we know what works and what doesn't. Rigorous evaluation should no longer be seen as an optional academic add-on to major programs. It should be required so that

both successful and failed experiences yield knowledge for smarter policymaking and program design in the future. Only with high-quality evaluation will we have a credible basis for claiming the effectiveness of foreign assistance.

I invite you to dip into this book – to learn a bit more about how people and institutions have worked together in impressive ways to save lives. This is inspiration for the challenges ahead.

Nancy Birdsall

President

Center for Global Development

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We would also like to thank the editors of the Disease Controls Priority Project, whose close collaboration has guided our work since the very early days of the project. Furthermore, we are grateful to authors of the Disease Controls Priority Project for their nominations for success cases and for their shared expertise on each of the book’s chapters.

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This book is dedicated to public health workers around the world,
who save lives every day.

Chapter 1.

What's Worked: Accounting for Success in Global Health

One of the greatest human accomplishments has been the spectacular improvement in health since 1950. With death rates falling steadily, more progress was made in the health of populations, particularly in developing countries, in the past half-century than in many millennia of earlier human history.

Average life expectancy – the age to which a newborn baby survives – was approximately 40 years in developing countries in 1950; 50 years later, life expectancy in these same countries has risen more than 60 percent to about 65 years today (McNicol, 2003). Each year, nearly four months are added to average life expectancy globally (WHO, 2000). Most of the improvements in life expectancy are derived from the reduced risks to young children: the chances of survival beyond age five have doubled. The rate of deaths to children under five have dropped from 148 deaths per 1,000 children born in 1955 to fewer than 59 deaths in 2000.

The overall improvement in health in the past 50 years in developing countries is only partially explained by economic growth. In fact, researchers have estimated that income growth accounts for less than half of the health gains between 1952 and 1992 (WHO, 1999). A recent study found that “even in a period of rapid economic growth, income changes can account for only a modest fraction of the changes in infant mortality in most countries” (Jamison, Sandbu and Wang, 2004). There is little doubt, in fact, that specific actions within the health sector have led to the improvements observed.

This book is about one part of that success story: major achievements in public health programs in the developing world. Not all of those achievements are included in this volume, by any stretch of the imagination, and in no way do the examples here represent the only health programs that have worked. Instead, this book provides a sample of the

Box 1 What Is Success?

Each of the cases in this volume adheres to five criteria for success, established by the What's Worked Working Group at the outset.

Scale: Interventions or programs that were implemented on a national, regional or global scale. Programs were characterized as “national” if they represented a national-level commitment, even if they were targeted at a problem that affected only a limited geographic area. Programs that were implemented on a pilot basis, or within only a few districts, were excluded.

Importance: Interventions or programs that addressed a problem of public health significance. In this case, a measure of burden of disease – disability-adjusted life years (DALYs) – was used as an indicator of importance.

Impact: Interventions or programs that demonstrated a clear and measurable impact on the health of a population. Demonstration of impact on process indicators – such as immunization rates – was not taken as a proxy for health outcomes. Rather, genuine changes in morbidity and mortality constituted the criterion.

Duration: Interventions or programs that were functioning “at scale” for at least five consecutive years. Sustainability, including financial self-sufficiency, was not used as a selection criterion.

Cost-effectiveness: Interventions or programs that used a cost-effective approach, using a threshold of about US\$100 per DALY saved.

national, regional and global public health efforts that we know, with confidence, have led to millions of lives saved and millions more improved.

These cases meet a set of rigorous selection criteria: large-scale, duration of five years or more, employing a cost-effective intervention, and having a major impact on an important health problem (see Box 1). Importantly, for these cases, as for few others, sufficient investment was made in data collection and analysis to attribute changes in health conditions to the large-scale interventions or programs themselves.

On the basis of impact alone, this sampling of major global public health successes should impress: Mothers throughout Latin America no longer worry about their children contracting polio; huge regions of Africa are now habitable because river blindness is under control; women in Sri Lanka can give birth without fear of dying – in sharp contrast to women in most poor countries of the world; Thailand successfully headed off what seemed destined to be a massive AIDS epidemic. And more.

But the stories are about more than the impact itself; they are about how that success came to be. What are the common threads shared by the success cases, which provide useful hints about what might be needed to generate more success in the future? How do these success stories arm policymakers and development practitioners to fight for more successes? And how do these stories challenge the assertion that foreign assistance makes little difference in people's lives?

Take Note

Six “wows” emerge from a close review of the cases presented here. These challenge the common assertions of global development critics. Some will surprise even the aficionados.

1. Success is possible even in the poorest of countries. These cases show that major health improvement is possible in the face of grinding poverty and weak health systems. Countries of every region in Africa and South Asia – places in which the average citizen earns less than US\$1,000 per year (often far less, closer to US\$1 or US\$2 a day) – have seen major public health successes. Several of the programs highlighted, such as the guinea worm and river blindness control efforts, employed innovative interventions and the involvement of the community to reach people in some of the most remote terrain on the planet. Others, such as those in Bangladesh that improved the health of mothers and children, brought needed health commodities and information through house-to-house visits to many low-income women who, for cultural reasons, could not venture far from home.

Other programs have been able to improve the health of poor people in middle-income countries by providing targeted incentives and support. For example, in Mexico, the PROGRESA program used a tiered-targeting strategy to provide income transfers to the most disadvantaged rural residents if they took their children for well-child services. In short, we found programs that successfully improved the health of people who are the hardest to reach.

2. Governments in poor countries can do the job – and in some cases are the chief funders. In almost all of these cases of success, the daily work of reaching affected populations is done by the public sector. This contrasts with the view that governments in poor countries are uniformly inefficient at best and corrupt at worst. Through at least the narrow frame of these cases, we found that the public sector was integral to the successful delivery of services at scale in most instances, sometimes in collaboration with non-governmental organizations or the business community. For example, in Sri Lanka maternal mortality has been halved at least every 12 years since 1935, in large measure because of the services that are designed, delivered and monitored within the public health system. In the southern cone of Latin America, it was the Ministries of Health that collaborated across borders to greatly diminish the threat of Chagas disease. In these instances and others, such as the measles initiative in Southern Africa, the financial support depended not on donors but on local resources – another dimension of the public sector’s ownership of the success.

3. Technology, yes – but behavior change, too. Despite the fact that technological developments in global health are more likely to grab headlines – and, in fact, do constitute a major element in many of these cases – very basic behavior change emerges as a prominent feature in a surprising number of instances. In the control of guinea worm in Africa, for example, families learned to filter their water conscientiously; in the fight against deaths from dehydrating diarrheal disease in Bangladesh, mothers learned and now teach their grown daughters how to mix a simple salt-and-sugar solution; and in Poland and South Africa, longstanding patterns of cigarette consumption have been dramatically altered through a combination of legal measures, taxation and communication efforts. This is good news in light of the health challenges that now confront us, very few of which can be tackled through improved technology alone.

4. International coalitions have worked. Many of the cases show the ways in which international agencies – now popularly termed “partners” – can break through institutional and bureaucratic walls to work for a common purpose. In no instance was this collaboration easy, and it was often the source of institutional friction and cumbersome processes. But the benefits are evident: Some parties bring funding, others bring technical capabilities in public health, and still others generate the political will to sustain the effort in the face of competing priorities.

Two examples are worth highlighting: The guinea worm eradication campaign benefits from the participation of a large number of partners – the Carter Center, the US Centers for Disease Control and Prevention, UNICEF, WHO, the Bill & Melinda Gates Foundation, the World Bank, the UN Development Program, nongovernmental organizations, more than 14 donor countries, private companies (including Du Pont and Precision Fabric Groups, which have donated more than US\$14 million worth of cloth for water filters), and the governments of 20 countries in Asia and Africa. Through interagency meetings, held three to four times a year, and annual meetings of coordinators of national eradication programs, exemplary coordination has been achieved among implementers and donors.

The international effort to control onchocerciasis also demonstrates the power of partnership. The program has relied on the long-term participation of the World Bank, WHO, UNDP, the Food and Agriculture Organization, the governments of 19 African countries, 27 donor countries, more than 30 non-governmental development

organizations, the pharmaceutical giant Merck, and more than 80,000 rural African communities.

5. Attribution is possible. It is indeed possible to know whether large-scale health programs are the key drivers of improved health. Although this might not sound surprising at first blush, in fact policymakers rarely have the opportunity to directly connect investments in major health (or other social) programs to outcomes that have as much meaning as lives saved. Typically, large initiatives, such as immunization programs, are judged by intermediate measures – the number of children receiving vaccination services, for example, or the number of doses of vaccines procured. The actual health outcomes are assumed. In contrast, we insisted on finding evidence that the programs led to specific types of health improvements and we were able to do so – in most cases because special data collection efforts had been made to look at those outcomes (see Box 2).

6. Success comes in all shapes. It is commonly held that in low-income countries, the only health programs that really work are those that are disease-specific and centrally managed, delivering medicines and services outside of the routine health system. These are the so-called “vertical programs” – some of which are highlighted in this volume. As the experiences chronicled in this volume attest, many other types of approaches also have worked, including initiatives that strengthen health systems to effect steady improvements in access and quality; traditional public health interventions that employ community-wide interventions such as salt iodation; and legal and regulatory reforms. Perhaps more importantly, several of these stories break down the boundary between “vertical” approaches and efforts to strengthen health systems by showing how disease-specific efforts can work together with routine health service delivery. For example, under the right circumstances a big push to immunize children can provide the much needed organizational skills, funding and motivation to improve basic pediatric health services. And virtually all disease-specific programs are made more successful when there are functioning training, logistics, surveillance and referral systems present in a country’s health infrastructure.

Box 2

Attributing Success: How Do We Know?

In each of these cases, solid evidence – summarized in the respective chapters – confirms that the impact on health is attributable to the specific public health efforts, rather than to broad economic and social improvements. In some instances, this confirmation comes through a randomized experimental design, which permits the comparison of the health of people who were included in a particular program with the health of people who have similar baseline characteristics and yet did not participate in the program. Such experimental designs are rare but not unknown: In Mexico, for example, the PROGRESA program of income transfers (Case 8) was scaled up in a way that was explicitly designed to assess the impact of the program.

In other instances, the confirmation comes from a composite of information about health changes that occurred simultaneous with the implementation of a program. In Sri Lanka, for example, the changes in specific causes of maternal mortality, such as hemorrhage, were coincident with targeted improvements in health systems, such as the introduction of transfusion services (Case 5). In the Gambia, the reduction of a disease that causes meningitis in children was so dramatic and so well documented following the nationwide introduction of Hib vaccine that no doubt exists about the cause of the epidemiologic change (Case 17). And in other cases, such as the Bangladesh family planning program (Case 12), statistical analyses that separate out different influences on the health outcomes provide the grounds for claims of success.

Connecting the dots for success

Each of the chapters in this volume tells a unique story, specific to time and place. While they all reveal the tremendous improvements in the lives of millions that can be achieved through public health efforts, they vary vastly in the health conditions addressed and the interventions used.. Each also is distinct in the factors that contributed to the accomplishments. They yield no single recipe that, if followed, will result in success.

No single recipe emerges, but rather a remarkably consistent list of ingredients: political leadership and champions, technological innovation, expert consensus around the approach, management that effectively uses information, and sufficient financial resources. In some of the cases, the participation of the affected community and the involvement of non-governmental organizations are also central features. These are elements that, combined in particular ways, appear to be the main contributing factors to success.

No single ingredient is enough. By itself, political leadership can create an opportunity for funding and action, in the face of competing demands within and outside of the health sector, but cannot provide the roadmap for what needs to be done to effectively deal with a health problem. That must come from strong information sources that identify the breadth and nature of the problem, appropriate technology that effectively addresses the problem. Implementation then depends on effective management with close monitoring of processes and results and, in many instances, a type of collaboration across countries and institutions that defies bureaucratic battle lines.

Mobilizing political leadership and champions takes a little luck and a lot of preparation. Virtually all of the cases show the importance of visible high-level commitment to a cause. In Thailand, the government showed strong leadership and vision in its early efforts to curb a growing HIV epidemic, making a bold commitment that led to one of the very few successes in HIV prevention on a national scale. In South Africa, the strong will of the first health minister of South Africa's new government allowed for the successful passage of one of the most comprehensive and stringent tobacco control policies in the world, despite fierce opposition from the powerful tobacco industry.

Other cases show the potential for champions to rally resources and international resolve. The near-eradication of guinea worm from Africa and Asia is due in large measure to the personal involvement and advocacy of US President Jimmy Carter and former African heads of state, General Toumani Toure and General Yakubu Gowon. These leaders visited endemic countries, mobilized the commitment of political and public health communities, and raised both awareness and financial resources. In the case of the control of onchocerciasis in 11 West African countries, then-World Bank President Robert McNamara made a personal commitment to spearhead a new initiative after witnessing the devastation caused by the blinding disease.

In a few of the cases, political commitment was simply the serendipitous result of a leader's particular interest in taking on a cause. In others, however, political commitment came about because technical experts were able to effectively communicate that a "big win" was possible. So, when President Johnson was looking for an initiative to mark "International Cooperation Year" in 1965, technical personnel from the US Centers for Disease Control took advantage of the opportunity to promote the eradication of smallpox. And when the Minister of Health of Chile was under fire after an outbreak

of meningitis, public health researchers seized the moment to make the case for national introduction of Hib vaccine – even though the vaccine would not prevent the type of meningitis drawing public attention at the time. In these instances, the ability of the technical experts to make the most of a political opening was the seed of the success.

Technological innovation works only when there is an effective system to deliver at an affordable price. Many of the cases turn on the development of a new technology – a drug, vaccine, or pesticide – that was appropriate to the conditions of the developing world. Commonly, the new technology permitted an existing program to work more effectively, achieving rapid health gains. For example, the regional initiative to eliminate Chagas disease in Latin America gained great momentum in the 1980s with the development of a synthetic pesticide that was both more effective and more acceptable to the population than the earlier one. The success of Morocco’s trachoma program hinged in part on the use of azithromycin, an antibiotic that in the 1990s was found to be as effective in treating the blinding disease with one dose as a six-week regimen of the predecessor treatment. The control of onchocerciasis in Central and East Africa was possible only after the 1978 discovery that the drug ivermectin, originally developed for veterinary use, was an effective one-dose treatment for many of the most debilitating symptoms of the disease.

Development of a new health product is in no way sufficient, however, for that technology to take hold. In many of the cases in this volume, the technological innovation led to better health only because of a concerted and large-scale effort to make it available at a cost that was affordable to developing countries and donor agencies – often through a “public-private partnership” in which the private sector provided the product at concessionary prices or through a donation program, and the public sector (both national governments and donor agencies) took responsibility for distribution. The deals have frequently been brokered or facilitated through international non-governmental organizations. For example, one of the largest public-private partnerships is a collaborative effort between Merck and a range of nonprofit institutions, led by the Task Force for Child Survival and Development, through which the pharmaceutical giant has donated approximately 300 million doses of ivermectin in the fight against onchocerciasis. Similarly, Pfizer has teamed with the Edna McConnell Clark Foundation and the Bill & Melinda Gates Foundation in a partnership to provide one of the world’s largest donations of a patented drug, Zithromax®, as part of a global effort to eliminate blinding trachoma.

Agreement among technical experts strengthens the signal, reduces the noise. In addition to specific technology and improved medicine, many of the health interventions in the book have benefited from the implementation of new strategies to fight disease, based on technical consensus about the strategies’ efficacy. For example, the World Bank and the WHO helped China revamp its fight against tuberculosis, the leading cause of death of Chinese adults, and recommended the introduction of DOTS (directly observed treatment, short-course) strategy – a way to package a variety of elements of successful TB control. Subsequently China launched the world’s largest DOTS program in 1991. In the case of trachoma, the government of Morocco joined forces with the WHO and an international partnership in the first national test of a comprehensive strategy to both prevent and treat the disease, including low-cost surgery, antibiotics, face washing and environmental change. In each of these instances, and in nearly all other cases, the agreement by an expert community both within international

technical agencies and in the broader international public health community about the right strategy was a central factor in the appropriate design of the programs. Such expert consensus does not occur magically, but rather through on-going international expert meetings and investment in scientific research. With such consensus, programs were seen as fully credible and worth the outlays required.

Non-governmental organizations complement and watchdog public action.

Most of the cases represent achievements of the public sector, but some show the special role that can be played by NGOs with large reach and strong management, complementing the public sector. In Bangladesh, a national NGO carried out the world's largest oral rehydration program, reaching more than 13 million mothers and preventing child deaths. NGOs have played a key role in the distribution throughout sub-Saharan Africa of ivermectin, the antibiotic that treats river blindness.

Beyond service delivery, NGOs have a valuable role as watchdogs and advocates, going beyond what any public agency can do. For example, health-promoting NGOs in Poland and South Africa have formed the backbone of advocacy efforts that led to sweeping tobacco control legislation in both countries.

No technology, funding or champion takes the place of good management on the ground. Without question, effective management is an essential element of each and every case. Good health service delivery requires that trained and motivated workers are in place, and have the supplies, equipment, transportation and supervision to do their job right. While this does not happen without adequate funding, it also does not happen without good management – and in some instances strong management partially compensates for budgetary restrictions. For example, in the case of the eradication of smallpox, a quasi-military organizational structure was able to respond quickly to new information, managing the multiple logistical challenges of reaching every corner of the globe. During the polio eradication campaign in the Americas, management at the country level was strengthened through the establishment of national inter-agency coordinating committees in each country. The committees worked with Ministries of Health to develop National Plans of Action, setting immunization strategies and optimizing the use of resources. These plans of action now serve as an important management tool for planning other health interventions.

Information is power. One facet of each and every case is the use of information, particularly in three ways:

- First, information **raises awareness** about a health problem, focusing political and technical attention. In China, for example, research showing that iodine deficiency posed a threat to children's mental capacity prompted government action. In Honduras, a rapid method to estimate maternal mortality highlighted regional differentials, which led to a public sector response. Research in Poland that linked smoking with the heavy disease burden there, and particularly to the exploding cancer problem, helped raise awareness among policy makers and the general public, and provided the foundation of calls for tobacco control legislation.
- Second, information in the early stages of a program **shapes design**. Through careful monitoring, program designers measure the effectiveness of various

ways to address a health problem and discern which approach merits additional resources. In Egypt, for example, information from community trials and “rehearsals” and from market research revealed consumer preferences – essential for the design of a national oral rehydration program that depended in large measure on effective communication with mothers. In South Africa, research on the impact of tobacco excise taxes shaped the stringent taxes implemented in the late 1990s.

- Third, information **motivates**. In the guinea worm eradication campaign, information was disseminated in monthly publications that highlighted the progress national programs. The information sharing helped keep countries motivated and focused, and pressured those lagging behind. The campaign even used information to spark positive competition between rival countries.

Participation of communities creates a two-way street. In some of the cases, the communities whose health is affected play a strong and active role in the success. Among the best examples: In the community-directed ivermectin treatment program, tens of thousands of communities across Central and East Africa organize and manage local distribution of the drug, assuming full responsibility and thus increasing the likelihood of the long-term sustainability of the program. “Village volunteers” serve on the front line in the guinea worm campaign: distributing filters, raising public awareness, identifying and containing cases. In Morocco, a community-based health education campaign has used mosques, lodgings for young women, local associations and schools as venues to communicate the program’s messages of behavior change.

More predictable funding, at adequate levels, permits the system to work. Last but in no way least, each of these cases demonstrates that making public health work takes money. Not vast sums – in each of the cases, cost-effective interventions are employed, and the benefits far outweigh the costs – but steady, adequate funding to ensure that the programs can be sustained for long enough to have a major impact.

In many of these cases, a large share of the funding came from donors – donors who can now claim a resounding public health victory: In the onchocerciasis control program, US\$560 million over 30 years, contributed by many donors, has virtually halted transmission of the blinding disease in 20 West African countries and prevented 600,000 cases of blindness – at an annual cost of just US\$1 per person. A US\$26 million grant from USAID to Egypt helped the country prevent 300,000 child deaths from diarrheal disease – at the remarkable cost of just US\$6 per treated child. In the guinea worm control program, about US\$88 million from an extensive list of donors and NGOs has helped reduced guinea worm prevalence by 99 percent, cutting the number of people affected by this profoundly debilitating ailment from 3.5 million to just 35,000.

The payoffs have been huge. Eradicating smallpox from the globe cost the donor community less than US\$100 million; the US, the campaign’s largest donor, saves its total contribution every 26 days. In the onchocerciasis control program, the economic rate of return has been estimated to be 17 percent – a yield that comparable to investment in the most productive sectors, such as industry, transportation and agriculture.

Donor investments in health do not always yield such resounding benefits, but these cases show the proven *potential* for donor dollars to save individuals, communities

and entire nations from the devastation of preventable death and disease. This is the type of impact that taxpayers in wealthy countries want to see from the foreign assistance budget: major improvements in the wellbeing of the world's poorest citizens.

The Challenges Ahead

The need to learn how to succeed is urgent. Ancient problems remain unsolved, such as the differentials in health between rich and poor. Newer ones – from the AIDS pandemic to the prevalence of tobacco-related disease to the growing toll of cardiovascular disease – threaten future generations.

HIV/AIDS. The soaring rates of HIV/AIDS have had a devastating impact on life expectancy in poor countries, and have erased decades of steady improvements in sub-Saharan Africa. An estimated 25 million people are believed to be HIV-positive in Africa alone – a figure that represents nearly two thirds of the total global HIV burden (UNAIDS, 2004). In countries like Botswana that have exceptionally high rates, it is estimated that more than one-third of the population carries the disease. The death toll in the continent is staggering; 55 million AIDS-related deaths are projected between 2000 and 2020, accounting for a 40 percent increase in the death rate. As a result, life expectancy today in sub-Saharan Africa is just 47 years, while it is estimated that without AIDS life expectancy would now be 62 years (UNAIDS, 2002).

High Child Mortality in Africa. Child mortality has declined in low- and middle-income countries, but more than 10 million children under 5 years still die each year, most of diseases that can be treated or prevented with known approaches. And the rate of improvement in child health has slowed dramatically in the past 20 years. In 1990-2001, for example, the number of deaths of children under 5 declined by 1.1 percent each year, compared to 2.5 percent per year during 1960-90. Even more troubling, while improvements have continued in places where child health is relatively good, it has been slowest in the places that historically have had the highest rates of child death. Since the early 1970s, sub-Saharan Africa has experienced a slower rate of decline in child mortality than any other region. Currently, 41 percent of the world's child deaths occur in sub-Saharan Africa; another 34 percent occur in South Asia (Black, Morris and Bryce, 2003).

Inequality. There is nothing new about rich people being healthier than poor people. Higher income translates into better nutrition, better access and ability to effectively use health services, greater ability to live in environments that are free of natural and human-made hazards. But the persistence of these differentials – and the growing gap for some health conditions and some populations – must be taken as a caution on claims of success. In this, average success masks an important failure: the gap in mortality, life expectancy and disease burden between industrialized and developing countries, and between rich and poor children within most countries, is wide. Ninety-nine percent of total childhood deaths in the world occur in poor countries (Shann, 1999). The poorest 20 percent of the population within countries often has significantly higher under-five mortality rates than the richest 20 percent. In Indonesia, for example, a child born in poor household is four times as likely to die by her fifth birthday than a child born to a family in the richest population segment (Victora et al, 2003). In short, while overall gains have been impressive, the benefits have not been evenly shared.

Cardiovascular and chronic diseases: Chronic diseases, and in particular cardiovascular diseases, have emerged as a “hidden epidemic” in developing countries (The Lancet, 1998). Estimates suggest that noncommunicable conditions such as depression, diabetes, cancer, obesity respiratory diseases and cardiovascular disease, will grow from approximately 40 percent of the health burden in developing countries in 1998 to nearly 75 percent in 2020 (WHO, 1999). Responding to the crisis requires that the major risk factors (high cholesterol and blood pressure, obesity, smoking and alcohol) be addressed through changes in diet, physical activity and tobacco control. There is hope: A small window of ten to twenty years exist for countries to change behavior patterns and prevent the spiraling health crisis (Raymond, 2003).

Toward more successes

Looking toward the past is like shining a flashlight into a mirror: the reflection illuminates both what’s behind and what’s ahead. In almost all of the cases that we now call successes, there were moments when the disease seemed insurmountable, the technology was still on the drawing board (or too expensive, or unusable in developing country conditions), the funding was nowhere in sight, international agencies were squabbling, and no one appeared ready to take up the challenge. In these instances, a combination of science, luck, money, vision and management talent came together to overcome daunting obstacles and transform the lives of millions of individuals and the prospects of families, communities and entire nations.

In the end, the experiences documented in this book say three things loudly and clearly:

- **Success is possible – big success, lasting success, world-changing success.** As the cases themselves show, successes have spanned a vast range of different types of programs and interventions, and in many instances have been supported by effective donor assistance and international cooperation. This observation competes with the prevailing sense that little can be done to ameliorate large-scale suffering in the poorest countries – particularly in the face of AIDS and malaria, for which the successes still are few and far between. And it serves as counterweight to the sense that public sector action in general, and development assistance in particular, systematically fails to make real improvements in real lives.
- **The ingredients of success are within our reach, and are not dependent solely on the vagaries of chance.** Because we did not look systematically at failures, we cannot say definitively that combining the ingredients found in these cases will assure success in future ventures. However, policymakers and planners would be well advised to consider using the common elements we have identified above as a mental checklist: Are these in place when new initiatives are proposed? If not, what would be required to mobilize the predictable and long-term funding, the political support, the information base, the expert consensus, the managerial skills and the other elements that form a common thread across these experiences?

- **We don't know enough about what's worked because scaled up programs are rarely evaluated systematically.** We tapped only a small set of public health successes. In large part, this was because there simply is not solid evidence of health impact for many international health programs. In general, while very small programs (particularly pilot programs) are evaluated, little research is done to estimate the health impacts of "at scale" efforts.

Even for well-known interventions that have received large amounts of donor support over many years, the base of evidence about what has worked (or not worked) in scaled-up programs – in terms of health outcomes, rather than process measures – is quite slim.

The gap in evaluation inhibits the documentation of successes, and prevents policymakers from being able to tell the difference between a well told story and a hard fact as they make decisions about which programs to support. The lack of evaluation also reduces the chances for success in the first place. In many of these cases, high quality evaluations that clearly established the causal link between programs and impact were the impetus for greater investments, broader application and, ultimately, more success. Efforts to assess whether programs were yielding the hoped-for benefits have been instrumental in securing continued funding.

Employing rigorous evaluation methods that link inputs and impact in large-scale programs is far from simple, and often requires financial and technical resources that are otherwise absorbed simply in the operation of a program. But without such evaluation policy decisions are based on scanty information from small-scale experiences combined with a large dose of opinion and politics.

Each year, about 2 million children in poor countries die of diseases that can be prevented by immunization; another 3 million die of the dehydrating effects of diarrheal disease. About half a million women in the developing world die in pregnancy or childbirth. Tobacco-related illness cuts short the lives of 4 million people in less developed countries each year; cardio-vascular disease claims more than 8 million lives. Last year alone, 3 million people in sub-Saharan Africa contracted the HIV virus. These are the millions of reasons, and millions of chances, to succeed.

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Success Case Summaries

Eradicating smallpox. A massive global effort spearheaded by the World Health Organization eradicated smallpox in 1977, and inspired the creation of the Expanded Programme on Immunization that continues today.

Preventing HIV and sexually transmitted infections in Thailand. In Thailand, the government's "100 percent condom program" targeted at commercial sex workers and other high-risk groups helped prevent the spread of HIV/AIDS relatively early in the course of the epidemic. Thailand had 80 percent fewer new cases of HIV in 2001 than in 1991 and has averted nearly 200,000 new cases.

Controlling tuberculosis in China. To address the problem of tuberculosis patients' early dropout from treatment, a national TB program in China implemented a new approach called DOTS – directly observed therapy, short course - through which patients with tuberculosis are "watched" daily by a health worker for six months as they take their antibiotic treatment. The program helped to reduce TB prevalence by 40 percent between 1990 and 2000 and dramatically improve the cure rate in half of China's provinces.

Eliminating polio in the Americas. Beginning in 1985, a region-wide polio elimination effort led by the Pan American Health Organization immunized almost every young child in the Americas, eliminating polio as a threat to public health in the Western Hemisphere in 1991.

Saving mothers' lives in Sri Lanka. Despite relatively low levels of national income and health spending, Sri Lanka's commitment to providing a range of "safe motherhood" services has led to a decline in maternal mortality from 486 deaths per 100,000 live births to 24 deaths per 100,000 live births over four decades.

Controlling onchocerciasis in sub-Saharan Africa. A multi-partner international effort begun in 1974 dramatically reduced the incidence and impact of the blinding parasitic disease, and increased the potential for economic development in large areas of rural West Africa. Transmission today has now been virtually halted in West Africa, and 18 million children born in the twenty-country area are now free of the threat of river blindness.

Preventing diarrheal deaths in Egypt. Using modern communication methods, a national diarrheal control program in Egypt increased the awareness and use of life saving oral rehydration therapy, helping to reduce infant diarrheal deaths by 82 percent between 1982 and 1987.

Improving health in Mexico. (Mexico's PROGRESA/Oportunidades). Since 1997, Mexico's PROGRESA program (now known as "Oportunidades") has provided a comprehensive package of nutritional interventions to rural communities through a conditional cash grants program, resulting in lowered rates of illness and malnutrition and increased school enrollment.

Controlling trachoma in Morocco. Since 1997, the incidence in Morocco of trachoma, the leading preventable cause of blindness, has been cut by more than 90 percent among children under ten through a combined strategy of surgery, antibiotics, face washing and environmental controls.

Reducing guinea worm in sub-Saharan Africa. A multi-partner eradication effort focused on behavior change reduced prevalence of guinea worm by 99 percent in 20 endemic African and Asian countries. Since the start of the campaign in 1986, the number of cases has fallen from 3.5 million to less than 35,000 in 2003.

Controlling Chagas disease in the southern cone of South America. Through surveillance, environmental vector control and house spraying, a regional initiative launched in 1991 has decreased the incidence of Chagas disease by 94 percent in seven countries in the southern cone of Latin America. Disease transmission has now been halted in Uruguay, Chile and large parts of Brazil and Paraguay.

Reducing fertility in Bangladesh. In Bangladesh, strong leadership of the family planning program, a sustained outreach strategy and a focus on access to services brought about increases in contraceptive prevalence from 3 to 54 percent (and corresponding decreases in fertility from 7 to 3.4 children per woman) over two decades, far in excess of what would have been predicted based on changes in economic and social conditions alone.

Curbing tobacco use in Poland and South Africa. Starting in the early 1990's, the transition to a market economy and a more open society paved the way for health advocates to implement strong tobacco controls in Poland, a country that had the highest rates of tobacco consumption in the world. A combination of health education and stringent tobacco control legislation has averted 10,000 deaths a year, has led to a thirty percent reduction in the incidence of lung cancer among men aged 20 to 44, and has helped boost the life expectancy of men by four years.

Eliminating measles in southern Africa. Measles vaccination campaigns in seven African countries nearly eliminated measles as a cause of childhood death in southern Africa, and has helped reduce the number of measles cases from 60,000 in 1996 to just 117 four years later.

Preventing iodine deficiency disease in China. China's introduction of iodized salt in 1995 reduced the incidence of goiter among children, from 20 to 9 percent and created a sustainable system of private provision of fortified salt.

Preventing dental caries in Jamaica. Between 1987 and 1995 Jamaica's National Salt Fluoridation Program demonstrated up to an 87 percent decrease in dental caries in school children and has been regarded as a model for micronutrient interventions.

Preventing Hib disease in Chile and The Gambia. A national Hib vaccination program in Chile reduced prevalence of Hib disease by 90 percent in the early 1990s. In 1997, The Gambia introduced Hib vaccines into their national immunization program and has virtually eliminated the disease from the country.