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How Can Elimination and Eradication Initiatives Best Contribute to Health Systems Strengthening?

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Abstract

This chapter reviews major developments in global health over recent decades, in particular, the influence of targeted disease elimination or eradication initiatives on efforts to build sustainable health services in developing countries. It is based on a review of published literature, comments of health care workers, and personal opinion.

The health and development landscape has become increasingly complex with many more actors, far greater funding levels and many, often competing, demands on limited country capacity. As greater attention and resources have focused on specific diseases and interventions, long-standing tensions between targeted and comprehensive approaches to improve health have been exacerbated. Despite positive interactions, much more could be achieved to strengthen health systems.

At the outset, future disease elimination/eradication initiatives should consider potential impacts on the key components of the health system and actively pursue efforts to minimize negative effects and maximize benefits during implementation.

Introduction

Efforts to eliminate/eradicate communicable diseases have been pursued for more than a century. In the 1950s and 1960s, breakthroughs in pharmaceuticals and vector control were translated into malaria, smallpox, and other disease control initiatives (Mills 1983). These occurred at a time of faith in the potential of targeted delivery of solutions based on good science to realize ambitious global goals as well as what were perceived to be quick wins in global health.

Programs were introduced into basic health care systems where immunization was typically limited to BCG and smallpox, where there was no effective national disease surveillance, and where population coverage with essential health care services was limited. Despite the early failure of efforts to eradicate yaws and malaria, the success of smallpox eradication in 1977, after a decade of intense effort, led the World Health Assembly (WHA) to pass resolutions for the eradication of guinea worm in 1986 and polio in 1988. Today, disease elimination initiatives are also underway in large parts of the world against lymphatic filariasis, onchocerciasis, malaria, and measles. In 2008, the WHA tasked the World Health Organization (WHO) to report on prospects for measles eradication. The polio and guinea worm eradication programs have been ongoing for more than twenty years and, in spite of recent reversals, there remains optimism that eradication can be achieved. The literature indicates that these programs have had both positive and negative impacts on national health systems.

Eradication/elimination initiatives share many characteristics with the increasing number of targeted disease-specific control programs that have been launched over the past decade and with which they interact. Here we review the impact of such programs on health systems and suggest ways in which any negative impact can be minimized and benefits maximized.

Overview of Influences on Country Health Systems

International institutions have long influenced global health policy and the development of health services in developing countries. In 1978, the Alma-Ata International Conference on Primary Health Care promoted comprehensive primary health care (WHO 1978). As initially articulated, this revolutionized the way health was interpreted and radically changed models for organizing and delivering care. It aimed to influence the determinants of health that arise in nonhealth sectors and influenced the shift of public health from a narrow biomedical slant to a view of health today which recognizes the central importance of social, economic, and political determinants.

Only two years after Alma-Ata, Walsh and Warren (1980) proposed selective primary health care as an interim strategy for disease control in developing countries. This implicitly considered comprehensive primary health care as too ambitious and focused instead on the provision of a limited number of programs selected on the grounds of cost-effectiveness. This led to the promotion of an array of selective programs in countries which often had limited capacity to deliver. Since then, the tensions between comprehensive (or horizontal) and selective (or targeted/vertical) approaches to improve health outcomes have continued to influence the global health agenda.

Disease elimination/eradication initiatives are time limited and organized in circumscribed programs. Mass campaigns can effectively address diseases

that are widespread, have a high prevalence and incidence, and affect a high proportion of the population. With a well-defined scope, clear objectives, and relatively short duration, such initiatives can deliver quick results. Mass campaigns are straightforward to manage and monitor and are able to attract substantial donor support. Because they have often operated through delivery channels parallel to existing systems, critics in many developing countries have perceived them as diverting human and financial resources from resource-constrained systems, to the detriment of the overall health systems development. Time-limited elimination/eradication initiatives in an underfunded sector can create islands of excellence that place substantial pressures on the health delivery system. In contrast, the health delivery system is a permanent fixture; in theory (but rarely in practice) it is comprehensive, able to adjust to shifting disease patterns, and embedded in community life. The integration of targeted initiatives into the mainstream health system can, in principle, result in greater efficiency, place the initiative within the context of other competing priorities, and generate more sustainable political and community support. The evidence below suggests that these potential gains, however, remain to be realized.

Early elimination/eradication initiatives were implemented in an environment where the aid architecture was far simpler; fewer players were involved at both the international and country level. Developing countries accommodated a number of targeted programs alongside ongoing efforts to develop broad-based health services. Health is just one of many development priorities. With few exceptions, domestic health budgets have increased modestly or fallen behind minimal levels, as defined by the WHO. Economic crises, debt repayment, conflict, and poor governance have exacerbated poverty and inequality and weakened health systems in most developing countries. Policies such as structural adjustment, designed to improve economic stability, often led to cuts in public spending. The globalization of labor markets in the 1990s increased the migration of skilled health workers, and the HIV/AIDS pandemic further undermined already weakened health systems (Rockefeller Foundation 2003; WHO 2006b).

Since the mid-1990s, concerns have been raised over the ineffectiveness of much aid. Proposals have been made for new approaches that provide direct financial support to governments to implement their own prioritized national development plans (Cassels 1997; OECD 2005; IHP+ 2007; DFID 2007).

The Millennium Declaration in 2000 influenced the establishment or expansion of a number of high-profile global health initiatives. This led to massive increases in resources which targeted a limited number of diseases or interventions, particularly against HIV/AIDS, tuberculosis, malaria, and childhood immunization. The expansion of such initiatives in recent years dramatically altered the landscape of aid and public health. Most global health initiatives pursue disease- or intervention-specific agendas in an environment where country health systems struggle to achieve universal coverage with basic services. This is particularly the case in sub-Saharan Africa and South

Asia, where global investments in health have been largely driven by single-disease advocates and commodities.

Although new resources, partners, technical capacity, and political commitment were welcomed, some critics argued that increased efforts to meet disease-specific targets exacerbated the burden on fragile health systems. In 2003, Oxfam published a warning to the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM), advising them to put in place programs designed to strengthen existing health systems, to ensure effectiveness and sustainable impact. The overconcentration of resources for specific programs left other areas underresourced and, where they existed, undermined sector-wide approaches (Oxfam 2002).

Pearson and colleagues highlighted that much disease-specific funding in Cambodia was neither aligned to the national health priorities nor to the national burden of disease. While the national plan prioritized primary health care and provision of a minimum health service package, most (60%) donor funding was allocated to HIV/AIDS and other infectious diseases (Pearson et al. 2008). In 2004, a high-level forum evaluated efforts to achieve the Millennium Development Goals for health and identified shortfalls in the health workforce, lack of donor coordination, and weak information systems as critical barriers to progress (WHO 2004).

The Global Alliance on Vaccines and Immunization (GAVI) recognized early that new generations of vaccines could not be introduced into weak or nonfunctional immunization systems, which had deteriorated since the end of the global push for universal childhood immunization in the 1980s. Thus GAVI introduced a flexible performance-related payment linked to improvements in immunization coverage. The financing mechanisms of the two largest initiatives, GAVI and GFATM, evolved to provide specific financing windows to strengthen health systems. Critics argued that these systems-strengthening funds were selective in targeting the system functions essential for implementation of the global health initiative programs and that they emphasized short-term rather than long-term contributions to systems strengthening.

In recent years, countries and donors have increasingly recognized the need to invest in building sustainable health systems to address all the major causes of ill health and disease, including other communicable diseases, neglected issues that contribute substantially to the burden of disease (e.g., reproductive health including maternal health), neglected tropical diseases (NTDs) such as filiarisais and onchocerciasis, mental health, and the rapidly mounting burden of noncommunicable diseases. The Millennium Development Goals for health will not be achieved without a more concerted and streamlined approach to improving health (IHP+ 2009).

It is possible that ever-evolving donor strategies to improve global health over the past thirty years have inadvertently contributed to the dysfunction of some health systems, which in the poorest of countries fail to deliver the most

basic health care. Thus, on the thirtieth anniversary of Alma-Ata, the WHO has called for a return to the principles of primary health care (WHO 2008c).

The Effectiveness of Aid

The increased profile and resources for global health have coincided with mounting concern over the ineffectiveness of much aid. In comparison with other sectors, donor assistance for health tends to be highly volatile, fluctuating from one year to another, and is poorly coordinated between donors. The large number of health initiatives and competing implementing agencies results in high transaction costs for government. Ministries of Health commonly complain of distortion, duplication, poor coordination, and inadequate sequencing of activities (IHP+ 2010; DFID 2007).

The opportunities to use targeted resources to maximize the provision of a wider package of health interventions have generally not been realized. New terminologies have emerged, including the concept of a "diagonal" approach or "campaign vertically, spend horizontally." Proponents argue that resources earmarked for a particular disease, such as HIV/AIDS, can serve to spearhead improvements in health systems (WHO 2007a).

A number of formal international commitments have centered around improved coordination, alignment behind nationally led plans, and efforts to make development assistance more predictable and sustainable (OECD 2005) across all sectors as well as in health, in particular (DFID 2007). At the launch of the International Health Partnership in 2007, the U.K. government described the health environment—with 40 bilateral donors, 90 global health initiatives, 26 UN agencies, and 20 global and regional funds—as being overly complex (DFID 2007).

In 2008, the High-level Taskforce on Innovative Financing for Health Systems reviewed the constraints on health systems, the costs of scaling up health care, possible sources of additional finance, and options to channel such funding. It explored opportunities to make aid more predictable and better linked to results. From this process emerged a "common health systems funding platform" for the GFATM, GAVI, and the World Bank, the largest providers of support for health systems development. It accepted that the major investments in HIV/AIDS, tuberculosis, malaria, and childhood vaccination and maternal health are constrained by the quality of the underlying health system, recognized the fragmented and disorganized state of development assistance for health, and stressed the need for an improved relationship between disease-focused programs and the development of comprehensive health systems. The common platform is intended to support a single country plan and budget as well as a single implementation process and results framework. It builds upon the Paris Declaration and Accra Principles on aid effectiveness and the International Health Partnership (DFID 2007). The platform will be

performance based and take an incremental approach to reducing bottlenecks to service delivery, reducing transaction costs, and rationalizing the number of duplicative initiatives in the health sector. However, in 2010, it is difficult to see any progress by individual organizations in balancing their agendas with the needs of countries.

The importance of coordination and accountability is heighted by the narrow focus of many global health initiatives and the growing adoption of output-based performance measures that may inadvertently encourage targeting at the expense of wider systems strengthening. The continuing competition for public attention and funding as well as the emphasis on short-term "deliverables" may undermine efforts to ensure a more organized system of mutual accountability, coordination, and partnership (Buse and Harmer 2007).

Implementation of the Paris Principles has met with limited success. A 2008 review by the OECD found that many donors still insist on using their own parallel fiduciary systems, even in countries that have good-quality systems. This review reported on 14,000 donor missions that were conducted in 54 recipient countries in one year, with Vietnam fielding an average of three per day (OECD 2008b).

In 2003, Unger et al. (2003) proposed a code of best practice for disease control to avoid damaging health care services in developing countries. They recognized that these programs only meet a fraction of demand or need for health care, contributing to inefficient facility use by recipients and gaps in care. External funding can undermine government capacity by reducing the responsibility of the state to improve its own services. Unger et al. concluded that most, but not all, vertical disease programs should be integrated into general health service delivery, and that their administration and operations should be designed with reference to existing systems and planned to integrate into these rather than establish new systems. They emphasized the need to avoid conflict with health care delivery, including advance planning for potential damage control.

In addition, Garrett (2007) highlights the dangers in the continuing lack of coordination, competition among providers, and the disproportionate sums directed at specific high-profile diseases rather than in improving public health in general. While substantial aid is tied to meeting narrow disease targets, critical systemic needs (including the world shortage of four million health workers) remain largely unmet.

For diseases of poverty (i.e., largely communicable diseases), Buse and Harmer (2007) identify the positive contributions that global health initiatives have made by:

- helping specific health issues get on national and international agendas,
- mobilizing additional resources,
- stimulating research and development,

- improving access to cost-effective health interventions among populations with limited ability to pay,
- strengthening national health policy processes and content, and
- augmenting service delivery capacity and establishing international norms and standards.

However, they also highlight habits that result in suboptimal performance and negative externalities:

- skewing national priorities by imposing external ones,
- depriving specific stakeholders a voice in decision making,
- inadequate governance practices,
- misguided assumptions on the efficiency of the public and private sectors,
- insufficient resources to implement partnership activities and costs,
- wasting resources through inadequate use of country systems, and
- poor harmonization and inappropriate incentives for health care staff.

Fragile Health Systems

Health systems that are too fragile and fragmented to deliver the volume and quality of services to those in need constitute a primary bottleneck to achieving the Millennium Development Goals in low-income countries. The World Health Report 2000 described a health system as "all the activities [including all organizations, institutions, resources, people and activities] whose primary purpose is to promote, restore or maintain health" (WHO 2000b:5) and outlined four essential functions: service provision, resource generation, financing, and stewardship. In 2006, WHO defined health systems strengthening as "building capacity in critical components of health systems to achieve more equitable and sustained improvements across health services and health outcomes" (WHO 2006b:10). In practical terms, this means addressing the key systemic constraints related to the health workforce, infrastructure, health commodities (e.g., equipment and medicines), logistics and supply, tracking progress, and effective financing necessary to provide services that are responsive to need and financially fair. There is an overwhelming need to address the perception that health systems are complex, to demystify the health systems strengthening agenda, and to improve governance and strategic planning that underpin performance. Two areas of the "health systems agenda" warrant particular attention: the complex financing of health and the global health workforce crisis.

Global health funding increased from USD 2.5 billion in 1990 to almost USD 14 billion in 2005 (World Bank 2007). In addition to the increase in official development assistance, private funding for global health now accounts for a quarter of all health development aid (Bloom 2007). The increasing number of global health actors has made tracking global health funding

increasingly difficult. McCoy and colleagues (2009) highlight the complexity and fragmentation of global health financing and inadequate monitoring and tracking. The proliferation of actors and the convoluted financing channels lead to substantial transaction costs and greater difficulty in ensuring accountability to the public. The World Bank has stated that "unless deficiencies in the global aid architecture are corrected and major reforms occur at the country level, the international community and countries themselves face a good chance of squandering" the rise in attention and money directed at improving the health of the world's poor (World Bank 2007:149).

There are concerns that "substitution" through increased international aid leads to reductions in government funding for health. Lu et al. (2010) showed that for every dollar of aid, government funding falls by USD 0.43–1.14. Ooms et al. (2010) propose that governments compensate for exceptional international generosity to the health sector by reallocating government funding to other sectors, that they anticipate the unreliability of international health aid over the long term by stalling increases in recurrent health expenditure, or that they smooth aid by spreading it across several years. International assistance for health is generally unpredictable and poorly suited to fund recurrent costs.

A second major systems challenge is the health workforce crisis attributable to a combination of circumstances: inadequate production, poor salaries and working conditions, increased migration, and losses through AIDS. The Joint Learning Initiative (JLI) initiated by the Rockefeller Foundation, the World Health Report in 2006, and the creation of the Global Health Workforce Alliance in 2006 raised the profile and scale of the problem and helped to build consensus on possible effective responses (Rockefeller Foundation 2003; WHO 2006b). The JLI Working Group on Priority Diseases highlighted the impact of a substantial number of global health initiatives in developing countries.

Until recently, the donor community has been reluctant to provide the necessary structural support to the health workforce beyond the funding of short training courses. Important donors, such as the Bill & Melinda Gates Foundation (BMGF) and GFATM, have been very restrictive despite the recognition that the successful implementation of initiatives is severely hampered by workforce limitations. A trained workforce is at the core of the health system. A typical country devotes just over 42% of total government health expenditure to pay for its health workforce, though there are regional and country variations. In Africa, 3% of the global health workforce struggles to manage 24% of the burden of disease (WHO 2006e). Low-income countries face common challenges: how to effect a rapid increase in the number of appropriately skilled and motivated health service providers and ensure that they are equitably distributed; how to maximize the productivity of the workforce; and how to motivate health workers to stay and serve their communities and reduce losses.

Mounting evidence indicates that the following approaches have yielded success:

- shift tasks to lower skilled workers,
- change the skills mix of the workforce,
- expand and increase the capabilities of cadres of community-based workers, and
- influence staff distribution through targeted use of incentives.

Support for health workforce planning and management information systems has slowly increased, as have efforts to improve productivity (WHO 2006e).

Elimination/eradication initiatives have attracted "philanthropic volunteers" to raise funds and support activities (e.g., immunization days for polio and measles, mass drug distribution campaigns against NTDs). Building on the success of community-directed treatment in reaching remote populations, the African Program for Onchocerciasis Control (APOC) studied the potential to use this approach to deliver other interventions and had considerable success in delivering malaria treatment, insecticide-treated mosquito nets, and vitamin A (UNICEF et al. 2008). Many other health and nonhealth programs also make extensive use of volunteers, and thus opportunities exist for greater coordination around training, sequencing of activities, and harmonizing incentives across initiatives.

The U.S. Global Health Act of 2010 is a response to the recognition that health systems in many low-income countries are broken. It includes a new global health workforce initiative to support a comprehensive approach meeting health workforce needs. This is part of a wider global health initiative, which promises a radical change in the development model of the United States, the largest donor, with a possible move from a targeted approach to one that aims to better coordinate efforts across the U.S. Government and with other donors and contribute to the development of sustainable health systems (U.S. Global Health Initiative 2010).

How Have Disease Eradication Programs Affected Health Systems?

Each eradication initiative has provided lessons to inform future efforts (Henderson 1998; Taylor et al. 1997; Aylward et al. 2000a; Hopkins, this volume). The next generation of elimination/eradication initiatives will look for guidance from the Global Polio Eradication Initiative (GPEI; see Aylward, this volume), and perhaps to the measles elimination initiative (see Andrus et al., this volume). Elimination/eradication initiatives offer major opportunities to improve coordination among partners, dialog across countries, and the realization of wider health benefits, but these opportunities have not been fully exploited.

More recent elimination efforts, such as those against NTDs, have demonstrated considerable awareness of the wider health systems challenges and have increasingly adopted an integrated approach linked with other programs (Gyapong et al. 2010). There are indications that the large budget global health initiatives, such as GAVI and GFATM, are following this path.

GPEI has helped generate substantial, additional resources and commitment from groups such as Rotary International. NTD elimination programs have attracted significant in-kind donations of drugs from the pharmaceutical industry. However, while most financial resources have been provided through external partners, elimination/eradication initiatives incur substantial local costs, and these have been poorly quantified.

In its review of the expanded program of immunization and early polio eradication initiatives in Latin America, the Taylor Commission concluded that the program delivered mixed effects and missed opportunities (Taylor et al. 1995). It highlighted the need for implementation to be part of a systemic program to build health infrastructure. Substantial benefits were, however, evident: There was cooperation across sectors and improved links between health workers and communities. The initiatives also generated pride in national achievement, raised the profile of health, and fostered intercountry collaboration, even across war zones. Management capacity was strengthened, and donors directly funded districts for the first time. The coordinating mechanisms established were used to manage other disease epidemics, and there was some co-delivery of other interventions (e.g., micronutrients). There was cooperation across laboratories and enhanced disease surveillance in the Americas. However, Taylor et al. (1995) cautioned that the benefits could only be applied to countries with established and sustainable health systems, strong leadership at central and district levels, a well-organized infrastructure, and local ownership and decision making. They warned against generalizing findings from more-developed to less-developed regions of the world, and described negative effects of global immunization goals that were in conflict with local demands and priorities, an issue also reported in relation to polio eradication in Nigeria. Training was often described as disrupting services and diverting the workforce from regular tasks. There was often little coordination with other priority programs, and most training was through in-service courses rather than through early adaptation of basic curricula. Their literature review highlighted the dearth of documentation on lessons learned to guide best practice. This situation continues today with the failure to view the collective impact of many such targeted programs on the health sector.

In 1997, concern was raised on ethical dilemmas related to polio eradication (Taylor et al. 1997). The balance of global goals and local priorities was put into question: Should poor countries, which have many priority health problems that are controllable using the available low cost-effective interventions, divert limited resources to pursue a global goal that has perhaps lower priority for their own children? Taylor et al. (1997) raised concerns about promoting

eradication as a single focus activity rather than using the opportunity and financial benefits to build sustainable health systems. Other views have ranged from detraction from routine delivery and detrimental to a sound integrated approach to health systems development" to a view that "benefits have outweighed minor untoward effects (Lee et al. 1998).

The 1997 Dahlem Workshop highlighted the need to ensure that eradication efforts do not undermine the development of general health infrastructure as well as the need to sequence or integrate with other disease control efforts and to complement public health approaches (Dowdle and Hopkins 1998). In 1998, Melgaard et al. (1998) set out a framework around key elements of health systems of particular relevance to eradication initiatives, to help ensure that future eradication programs are designed to accrue the greatest benefits to health systems development.

Several studies emphasize that synergies, such as coordinated planning and surveillance between GPEI and health systems, could have been better exploited (Loevinsohn et al. 2002; Møgedal and Stenson 2000). Møgedal and Stenson found that polio eradication produced mixed effects: it improved cold-chain infrastructure and increased capacity, but also caused delays and disruption to routine services. Linkages were generally not exploited. Greater focus was placed on national immunization days than on strengthening routine services. GPEI did, however, mobilize new donors and provided additional external resources. Møgedal and Stenson call for a renewed emphasis on routine immunization to exploit polio eradication for other health purposes. They found that polio campaigns undermined pressure to correct a dysfunctional system, slowed the flow of health information, hampered family planning activities, and disrupted other priority training. Financial incentives provided for polio led to an escalation of demand in other programs. Where systems were weak, GPEI helped create unsustainable, parallel systems of financing, vaccine supply, transport, and supervision. These were suitable for short-term campaign needs but insufficient for long-term immunization requirements. Routine immunization fell after national immunization days, with community fatigue and high volunteer dropout rates reported (Mogedal and Stenson 2000).

The reversal in polio eradication experienced in northern Nigeria in 2003 (Yahya 2006; Jegede 2007; Rosenstein and Garrett 2006; Obadare 2005; Renne 2006) offers insight into how eradication initiatives interact with health systems, and highlights the challenges of incorporating global-level decisions into national health plans and budgets. In northern Nigeria, community leaders rejected polio immunization and/or the approach taken, which brought the initiative to a standstill for 16 months. Perceived to be in response to fears that the vaccine was contaminated with HIV and contraceptives, their unwillingness also reflected a resentment with the top-down decision-making process in international health, which prioritized polio over other diseases that Nigerians saw as far more pressing health concerns for their community (Bates et al., this volume). The impasse in northern Nigeria was resolved by involving

traditional leaders. This led to the inauguration of the Northern Traditional and Religious Leaders Forum for Primary Healthcare and Polio Eradication, which has three primary objectives:

- to improve immunization coverage and ensure interruption of wild poliovirus in Nigeria,
- to support the strengthening of routine immunization in northern Nigeria, and
- to contribute to the development of an effective primary health care system in northern Nigeria.

From January to November, 2010, Nigeria reported a >90% decrease in polio cases from 2009 (WHO 2010f).

The polio initiative resulted, however, in many system benefits. Tasks were shifted to lower skilled workers, new technologies (e.g., vaccine vial monitors) were introduced, new strategies were adapted, and simple management tools were introduced to fit local settings. The immunization infrastructure and capacity was replaced or refurbished in many countries; however, inadequate attention was given to building a sustainable supply and logistics systems suitable for routine immunization. There was enhanced cooperation between laboratories, and surveillance capacity influenced responses to outbreaks of measles, meningitis, cholera, and yellow fever. The initiative mobilized a wide range of workers and transport support from the military and education networks through the use of both nonmonetary and monetary incentives (Aylward and Linkins 2005), although massive campaigns may have impacted negatively on provision of other health services. Opportunities to deliver wider benefits could have been maximized if potential partners had been co-opted from the start. The reversals in polio eradication in Nigeria as well as in India (Arora et al. 1999; Arora et al. 2010; Sathyamala et al. 2005; Sinha 2008; Vashishtha et al. 2008) undermined belief in the feasibility of eradication (WHO 2002). While no single factor can explain why people accept, refuse, or resist polio vaccination, a number of strategic shifts have been suggested (see also Bates et al., this volume):

- There is a need for a comprehensive communication strategy to deliver accurate messages through credible agents at the local level.
- The unifocal and intense nature of the program must be offset by delivering quality child health and other health services, using existing government and NGO resources through sustainable approaches.
- Social mobilizers need to be trained at all levels, but specifically at the community level, to counteract growing fatigue among service providers and communities and the perception that the eradication goal is elusive and that providers are not full partners in the program.

The GPEI provides six crucial lessons (Aylward et al. 2003; see also Aylward, this volume):

1. An eradication initiative needs to be based on technically sound strategies with proven operational feasibility in a large geographical area.
2. An informed collective decision needs to be negotiated by an appropriate international forum to minimize long-term risks in financing and implementation.
3. Sufficient resources need to be deployed at the community level in a partnership.
4. Appropriate financing strategies are vital.
5. At the outset, those countries or populations likely to delay achievement of the global goal must be identified to ensure provision of sufficient resources and attention.
6. International health goals, such as polio eradication, must be designed and pursued within existing health systems if they are to secure and sustain broad support.

The evaluation of the impact of an eradication initiative on health systems has been hampered by the lack of baseline data, the absence of control groups, and the concurrent implementation of major health reforms.

While the elimination/eradication model is time limited, GPEI demonstrates that the time frame can extend to the point where doubts are raised on the feasibility of eradication. The endorsement of global goals by the WHA in 1988 may not be translated into prioritization in country health programs and budgets over many years, and in light of continuing and new challenges to the health of the population and the advent of new well-funded global health initiatives.

How Can Future Elimination/Eradication Initiatives Best Contribute to the Strengthening of Health Systems?

The WHO resolution that launched the GPEI stated that eradication should be pursued in ways that strengthened the delivery of specific health services or the development of health systems (WHO 1988). Although there is no shortage of advice for future elimination/eradication initiatives in terms of methodology, there is little evidence on how to apply that guidance. Melgaard et al. (1998) set out a framework for the design of future eradication programs to ensure the greatest benefit accrues to health systems development. Aylward et al. (2003) has highlighted key lessons from past programs. Key recommendations to guide interactions between global health initiative and country health systems have been delineated by the World Health Organization Maximizing Positive Synergies Collaborative Group (2009).

Perhaps it is appropriate to first question whether elimination/eradication initiatives can contribute to health systems strengthening or whether, because of their very nature, they are in conflict with long-term systems building.

Can initiatives that promote globally defined health priorities, as determined by international institutions, effectively engage with and support national governments, which seek to deliver universal access to services specific to the priority health needs of their populations?

The global health environment of 2010 looks very different from that of the 1970s or 1980s, when the current generation of elimination/eradication initiatives were conceived. At present, the international- and country-level settings are far more complex: many more stakeholders, small projects, funding, and complex financing channels exist than in earlier decades. This creates many more opportunities to do good, but also the potential for interactions to do harm.

Health priorities will continue to evolve. In all regions except Africa, noncommunicable diseases account for the greatest share of the burden of disease. Climate change is expected to result in uncertain health impacts, and the emergence of newly emerging infectious diseases remains a constant threat.

Viewed in 2010, the Millennium Development Goals are unlikely to be met by 2015, and the post-2015 global development agenda is unclear. Aid priorities and modalities of donors and global health initiatives will continue to evolve, and new actors (e.g., China, India, and Brazil and large multinational corporations) will further influence the development landscape. Earmarking of future aid for globally defined priorities may, as today, not bear a relation to the major causes of the burden of disease in a country.

The debate on the merits of vertical and horizontal approaches will continue. Countries will likely continue to pursue a pragmatic mix of approaches that blend targeted, disease- or intervention-specific and horizontal, health system-strengthening strategies. They will likely continue to struggle to achieve the right mix and maximum benefits.

Underfunded and dysfunctional health systems, fragile political alliances, disruptions through conflict, weak governance and communities with little faith in government will likely continue to be the norm in the poorest countries. National health and development budgets in the poorest countries will remain stretched despite increased aid.

Sustaining hard won gains will be a challenge. History suggests that the recent high levels of investment in health are unlikely to continue with many other development priorities (e.g., economic growth, food and water security) demanding attention. Over recent decades, donor support for malaria and immunization has varied widely as new funds have been allocated to new challenges. The introduction of new, more expensive vaccines, initially subsidized by GAVI, will increase pressure on national budgets. GAVI has not yet achieved downward price leverage on new vaccines to the degree expected, and the global economic downturn may limit the level of ambition and the acceptance of relatively high cost vaccines.

Future elimination/eradication initiatives must balance their specific goals against the common threats to health and life in the poorest countries. They

need to deliver short-term gains (results) while maximizing opportunities to co-deliver a range of interventions (efficiency) and build a health service over the longer term (sustainability)—one that is able to respond to the current and future needs of populations. When GPEI was launched, the major health challenges that children faced in low-income countries were pneumonia, diarrhea, measles, malaria, and malnutrition. With the addition of HIV/AIDS, these remain largely unchanged today.

In addition to meeting time-bound disease reduction targets, elimination/ eradication initiatives will need to respond better to aid effectiveness challenges and maximize investment in national capacity and the wider health system. This implies alignment behind the national development plan, support for meaningful country ownership, and the division of labor with others. Initiatives will thus need to consider the predictability of finance, minimize transaction costs, and ensure that their efforts complement those of other priority interventions to reduce duplication and overlap.

At the outset, an initiative must understand the country context within which it will operate, including the policy environment and national priorities, the complex financing flows, the challenges that governments face in managing multiple stakeholders, and the gaps in a country's ability to carry out essential public health functions. Of particular importance are approaches to disease surveillance, health education and information, monitoring and evaluation, workforce development, enforcement of public health laws and regulations and public health research. Each initiative should carry out a health system impact assessment in advance of operations and judge their contribution to the collective impact of many such targeted programs on the health sector. The reversals in polio suggest that advance management of damage control should be part of the planning process.

Future elimination/eradication initiatives need to be placed from the outset in a long-term framework designed to strengthen health systems, one in which there is a clear fit with the national health strategy and in a way that offers maximum benefits to systems strengthening without jeopardizing eradication achievements. Wherever possible, initiatives should work through and build upon existing systems of planning and management, logistics and supply, finance, and information. They should actively seek co-delivery of other health interventions using a range of platforms inside and outside the formal health system. It will be important to maximize planning and implementation links with partners at the country and international level that target diseases/ interventions (GAVI, GFATM) and those that address systematic bottlenecks (GHWA, Health Metrics Network). Greater focus needs to be placed on building the capacity of routine systems (immunization, surveillance, service delivery) in the weakest environments from the onset.

In 2010, a major candidate for eradication is measles (WHO 2010a), which will build on long, if intermittent, investment in improving routine immuni-zation systems to achieve high levels of national coverage. Supplementary

immunization activities, however, cannot replace the lack of routine services. Investments in improving surveillance and laboratory capacity are being designed to provide the widest possible benefits from the start and complement investments from other targeted programs, such as the Health Metrics Network (health information) and HIV/AIDS and NTD programs (laboratories). The experiences from universal childhood immunization programs and GPEI provide lessons on how to ensure that synergies are maximized and to strengthen delivery of health services in the poorest districts of countries.

Elimination/eradication initiatives should set targets and indicators to measure their impact and performance against key points of interaction with the health system: service delivery, financing, governance, health workforce, health information, and supply management. WHO developed such a framework for optimizing the impact of polio activities on expanded immunization programs, although this was not fully implemented (WHO 2001a), and the International Health Partnership (DFID 2007) developed a set of health systems indicators as part of a common monitoring and evaluation framework.

The polio experience demonstrates that the initial global endorsement of an eradication goal may not translate into country plans and budgets over decades. Thus, there will need to be continued investment in advocacy at the global and country level. The best way to maintain support over the long term, particularly at the community level, may be through demonstrating the positive impact of the elimination/eradication initiative on the provision of wider services and the overall health system.

It is important to temper disease- or intervention-specific advocacy with recognition of the dangers of narrow earmarking, which may undermine wider health objectives. Wherever possible, investment should be made in systematic improvements using targeted funds to build and strengthen existing systems.

Future elimination/eradication initiatives must also invest in building evidence early. The WHO Maximizing Positive Synergies Collaborative Group (2009) makes a number of recommendations that are applicable to elimination/eradication initiatives as well as to the studied global health initiatives. These include the need to:

- Infuse the health systems strengthening agenda with the same sense of ambition and speed that has characterized the global health initiatives.
- Extend the health remit of narrowly focused global health initiatives and agree to indicators for health systems strengthening.
- Improve the alignment of planning processes and resource allocations among global health initiatives as well as between global health initiatives and country health systems.
- Generate more reliable data for the costs and benefits of strengthening health systems and evidence to inform additional and complementary investments to those of global health initiatives.

- Ensure a rise in national and global health financing and in more predictable financing to support the sustainable and equitable growth of health systems.

Conclusion

Disease eradication and elimination initiatives will continue to be a part of the development landscape but need to demonstrate compatibility with health care planning, financing, and delivery in poor countries. They need to contribute to efforts to build health systems and should unite the delivery of short-term, discrete targets against individual diseases with investment in building the capacity of health services to deliver universal, affordable access to care. Deliberate policy decisions are needed at the onset of new disease elimination/eradication initiatives. The evidence and arguments set out in this chapter should help in this task.

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