Sustainability of Achievements: Lessons learned from Universal Child Immunization

Report of a Steering Committee
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Lessons Learned from Universal Child Immunization
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For more information, please contact:

Director
Evaluation and Research Office
UNICEF, DH-48C 3 UN Plaza
New York, NY 10017
USA
Dedication

On September 14, 1994, several members of the Steering Committee met with Jim Grant to discuss the proposed review of the Universal Child Immunization (UCI) initiative. His eyes still sparkled, but he was clearly failing. He had lost weight and appeared tired. Nonetheless, he stayed with us for almost an hour and a half and stressed the importance of the review. He became more animated and energized as we discussed UCI, political will and the importance of UNICEF's role as an advocate for the health and well-being of the world's children. He closed our meeting with the observation that it was important for UNICEF to learn not only what had gone right but also what had gone wrong, because much more remained to be done.

Jim Grant has passed away, but his advice has helped shape this document. As the study unfolded important problems surfaced, some of which were not very complimentary to UNICEF. These problems could have been glossed over but were not. The Steering Committee has honored Jim Grant's charge and respectfully dedicates this report to his memory.

F. Marc LaForce, M.D.
Chair
Steering Committee for Lessons Learned on Sustainability for Child Immunization
Members of the Steering Committee:

Dr. N. Basu  
Dr. Felicity Cutts  
Dr. Francois Gasse  
Dr. Peter Ndumbe  
Mr. Robert Steinglass  
Dr. F. Marc LaForce, Chair

UNICEF Staff:

Dr. John Donohue  
Dr. Terrel Hill  
Dr. Sawon Hong  
Dr. Nyi Nyi

Country Case-Studies Conducted By:

Dr. Franklin Baer  
Dr. David Pyle  
Ms. Mary E. Taylor

Final Report Prepared By:

Ms. Mary E. Taylor
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List of Acronyms

AFRO  African Region, WHO
BCG    Bacille Calmette Guerin
BI     Bamako Initiative
CDD    Control of Diarrhoeal Diseases
CEE    Central and Eastern Europe
CIDA   Canadian International Development Agency
DANIDA Danish International Development Agency
DHS    Demographic and Health Survey
DMO    District Medical Officer
DOH    Department of Health
DPT    Diphtheria, Pertussis, Tetanus
EPI    Expanded Programme on Immunization
ESARO  Eastern and Southern Africa Regional Office, UNICEF
KEPI   Kenya Expanded Programme on Immunization
FIC    Fully Immunized Child
GOK    Government of Kenya
HIS    Health Information System
ICC    Interagency Coordinating Committee
IMF    International Monetary Fund
JICA   Japanese International Cooperation Agency
MCH    Maternal and Child Health
MENA   Regional Office for Middle East and North Africa, UNICEF
MIS    Management Information Systems
MDG    Mid-Decade Goals
MOHFW  Ministry of Health and Family Welfare, India
MOH    Ministry of Health
NGO    Non-Governmental Organization
NIDs   National Immunization Days
NIS    Newly Independent States
NT     Neonatal Tetanus
OAU    Organization of African Unity
OPV    Oral Polio Vaccine
ORT    Oral Rehydration Therapy
PAHO   Pan American Health Organization, WHO
PHC    Primary Health Care
ROSA   Regional Office for South Asia, UNICEF
SAARC  South Asian Association for Regional Cooperation
SDHS   Strengthening District Health Systems
SEARO  South East Asia Regional Office, WHO
<table>
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<tr>
<td>SIDA</td>
<td>Swedish International Development Agency</td>
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<td>UCI</td>
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<td>UNDP</td>
<td>United Nations Development Programme</td>
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<td>UNHCR</td>
<td>United Nations High Commissioner for Refugees</td>
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<td>UNICEF</td>
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<td>USAID</td>
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<td>VII</td>
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<td>WHO</td>
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EXECUTIVE SUMMARY

A. Background and Objectives

The purpose of this review was to understand factors associated with the achievement of Universal Child Immunization (UCI) and to assess elements critical to the sustainability of immunization programmes since 1990. The specific objectives were:

- Identify conditions within UNICEF, other donor organizations, and counterparts in governments which would improve the design and implementation of immunization programmes with regard to sustainability.
- Identify lessons learned about the sustainability of immunization programmes that have broad applicability for developing expanded primary care and more specifically, achieving mid-decade and year 2000 goals.

This summary begins with recommendations of the Steering Committee for UNICEF and then describes in brief the methodology used for the review and principal findings. Extensive background and detailed findings are found in the main body of the text.

B. Recommendations

The following recommendations address the terms of reference of this review (see Annex A) and are concerned with UNICEF's role in the area of sustainability of immunization. However, many of the recommendations are equally applicable to other donor agencies and counterpart governments. The Steering Committee chose to limit the number of principal recommendations to the six that would have the greatest impact.

These recommendations build on UNICEF's dramatic accomplishments, and highlight strategies that might better guarantee that gains in immunization will be continued and used as starting points for more comprehensive primary health care (PHC). The Committee recognizes that there are conditions, such as wars and natural disasters, which influence immunization programmes and which are beyond the control of any agency.

1. **UNICEF must vigorously maintain its role as a global advocate for improving the lives and health of all children and women.**

UNICEF has played a crucial role in raising political consciousness concerning the status of children and women. No other international institution is likely to assume this responsibility, on this scale, in the near future. UNICEF must continue to use its influence to maintain a constant focus on the rights of all children and women to receive basic, effective health services such as immunizations. UNICEF must continue to champion the premise that there is a global responsibility for ensuring adequate resources for immunizations for every mother and child.
2. UNICEF should explicitly emphasize the importance of sustainability in its programmes by developing and using process indicators that monitor critical is elements of immunization programmes in the context of health systems development.

For immunization to be sustained, UNICEF must revisit how services are to be delivered in perpetuity, and what types of indicators are appropriate guarantee that progress is being made or success is being maintained. The lessons learned from this review may be used to generate process indicators for regional or country offices to design programmes and implement strategies or principles that contribute to sustainability. For example, since effective donor coordination with strong government leadership is more likely to be associated with sustainability, what can UNICEF programmes do to facilitate its development and measure progress in country programmes?

The output and outcome indicators that have been used for immunization, such as coverage and disease incidence, are essential to monitor impact. However, as experience is gained in using process indicators, the connections between process and outcome must also be assessed. This will assist in refining those process indicators that are the most useful measures of continuous and effective immunization system.

3. UNICEF, through its country programme partnerships, should commit to long-term planning for the consistent and coordinated maintenance of inputs, service delivery and support systems, and outputs.

Long-term commitments to and coordination of national plans of action for immunization as part of the basic package of primary health care are needed. Partnerships with countries, particularly the least developed, may require an evolution of strategies which take 10 to 20 years. UNICEF should use its influence to ensure that governments have reliable, consistent inputs over a long period in order to plan and implement appropriately designed programmes, including developing sustainable vaccine procurement systems, effective training and supervision, and ensuring that the recurrent costs of vaccination programmes can be met. Effective donor coordination at country level is essential, and UNICEF needs to facilitate the active leadership of national governments in coordinating bodies. In terms of meeting the needs of children, the concept of ‘good’ donors should be as powerful as that of ‘good’ governments.

4. UNICEF should support major changes in the evolution of health systems such as decentralization, supply of essential drugs, and cost sharing.

Major changes are occurring in the locus of control of immunization activities. Decentralization is being vigorously pursued in many countries, but the managerial skills required for an effective shift in the locus of control of immunization services may not yet be present. It is unlikely that the speed of decentralization will be slowed, and plans and programmes must incorporate the strengthening of local capacity and systems as soon as possible. Part of this strengthening may be
assisting central levels to find and fulfill useful policy-setting, supply and support roles.

The ability to manage routine immunization services is vital to sustainability, particularly as decentralization occurs and disease control activities become more active. In Africa, especially at the district level, countries may need support for human resource development plans, which include basic training, refresher training (based on assessment of specific skills that need improving), career development, methods or monitoring staff placement and performance, and supportive supervision.

The routine use of immunization services is linked with the publics perception of the availability and quality of curative services. For example, availability of drugs was reported to be a major determinant of the utilization of immunization services at health centers. More generally, cost sharing programmes are being instituted to improve service utilization through community participation and resource support. While these programmes are still evolving, community financing efforts such as the Bamako Initiative (BI) offer UNICEF immunization programme planners real possibilities for linking the strengths of one programme to support another. More explicit integration of initiatives and studies of the results may be in order.

5. UNICEF should ensure accountability among all partners, at all levels, by monitoring performance using high quality data.

If programme and funding decisions are to be based on country-specific immunization coverage data, UNICEF, the World Health Organization (WHO) and other donors need an efficient and effective mechanism of ensuring accuracy and comparability between various data sets. Despite the fact that UNICEF has invested considerable human and financial resources in this effort, coverage figures at UNICEF/ New York and at WHO/ Geneva have differed considerably. Moreover, as shown by country case-studies, data from both global agency data sets often differed from that used most frequently by programme managers. Coverage data are fraught with differences and errors in estimates that begin in the field and are multiplied as they move up the system. Coverage surveys are thought to provide more accurate data, but they must be well designed, conducted and interpreted, which has not always been the case. Their role in establishing country-specific rates and trends in terms of sustainability is still unclear and should be resolved. Problems with coverage data are a result of insufficient understanding or of insufficient focus on how the data are to be used for programme management and improvement. Such problems are also a result of overemphasis on particular targets rather than on the process of continuous improvement.

Targets have played an important role as benchmarks to assess progress. They have also been used as political tools for organizational support and for mobilizing resources. However, when targets have been set at unrealistically high levels, they have led to the development of unsustainable immunization strategies and to the manipulation of data. when their political use has taken precedence over their use in managing programmes, they have deterred effective critical assessment. Immunization targets should be ambitious but attainable. While reporting them may be politically necessary care should be taken to maintain sight of their most important purpose.
to improve services to mothers and children.

When targets and data are used for improvement in an atmosphere that encourages problem-solving and innovation, the human resources that deliver immunization may be better brought to bear on sustaining it. Addressing problems of data quality and the use of targets should be important priorities for UNICEF, WHO and countries.

6. **UNICEF should ensure that specific disease control goals and strategies, most urgently those of poliomyelitis eradication and National Immunization Days (NIDs), contribute to sustaining all immunization services and are not artificially separated.**

Poliomyelitis eradication appears to be well on its way and deserves strong support from UNICEF. Several key international organizations and many countries are heavily invested in promoting its attainment. For eradication to be feasible by the year 2000, regardless of underlying coverage, NIDs or subnational days for children under five years will have to begin in many countries by 1997. This strategy will pose serious problems for some countries, especially those with low immunization coverage rates. Nonetheless, the potential for eliminating an important cause of human misery is an attractive opportunity. The contribution that eradication activities will make to sustainability of immunization will depend on how they are carried out. This is where UNICEF should play a leading role by brokering and insisting on country-level adaptations that will best serve the long-term sustainability of all aspects of immunization programmes.

The pressure to establish purely vertical poliomyelitis eradication programmes will be great. However, these efforts must not neglect the burden of death and suffering from other diseases preventable by immunization, especially measles, neonatal tetanus, and hepatitis B. In countries with less developed infrastructure and capacity, UNICEF should be prepared to insist that there be multiple-antigen NIDs. UNICEF should also work to assure appropriate levels of donor support for eradication-specific activities and for the opportunity costs of eradication to health systems development. The process used for eradication should not weaken health systems by paying unrealistically high per diems or by setting up parallel reporting systems. In some countries, NIDs will have to be maintained for eight to ten years to achieve complete eradication. Donor support for this length of time must be ensured, and scarce country resources should not be shifted from ongoing immunization efforts that are maintaining or improving coverage.

The most important challenge to UNICEF is how best to use these efforts to ensure concurrent support to infrastructure and system capacity development in health systems. This will require commitment on the part of those vested in poliomyelitis eradication to help achieve and sustain broader immunization goals of countries. UNICEF might undertake this challenge by assessing current country programmes with counterparts to identify areas of overlap and possible reinforcement between eradication programmes and immunization systems. Furthermore, UNICEF could facilitate planning exercises that give donors and governments opportunities to soil: out and leverage resources to accomplish the greatest good in the most efficient way. If UNICEF is able to focus attention on this now-proactively-there are more likely to be eradication
activities that contribute to sustained immunization.

C. Methodology

A Steering Committee, consisting of outside experts and consultants, was established to conduct this review independently, with support from UNICEF’s Evaluation and Research office staff. The review was conducted from September 1994 to May 1995. The Steering Committee convened three times to review and suggest revisions of key activities, including: terms of reference, study design, selection of countries, data collection instruments and progress of work at key stages. The committee reviewed the final report before publication.

The starting point for the review was the establishment of a working definition of sustainability that would broaden the scope of inquiry from the narrow financial perspective; to be comprehensive, it had to include other essential characteristics within societies and health systems that determine support and continuation of immunization. Sustainability was recognized as having financial, political, managerial, technical and cultural components, all of which need to be assessed. The definition used by the Steering Committee is based on the principles of capacity, effectiveness and self-reliance:

\[
\text{Sustainability of immunization is the capacity of the health system to provide immunizations effectively over time with minimum external input.}^1
\]

Programmes were analysed as systems with a supply aspect and a demand aspect. The supply component consists of technology and development, external donor assistance, politics and government, organizational structure and operations. The demand component consists of cultural and individual characteristics and community demand for services. They come together in utilization of immunization services which directly influence the key outcome: child health.

Information was collected through a desktop review, key informant interviews and in-depth field studies in six countries.

- **Desktop Review**: Documents covering UCI, immunization programmes, key organizations working in the field, and characteristics of the social and health sectors were reviewed (see Annex B). Immunization coverage data were obtained from the Global Programme on Vaccines at WHO/Geneva and from UNICEF headquarters. WHO/Expanded Programme on Immunization (EPI) Information System data were used as the preferred source for most coverage analyses.

- **Key Informant Interviews**: Interviews were conducted with UNICEF headquarters staff, WHO/Geneva staff and other key individuals with significant UCI/EPI experience. Regional and country level UNICEF staff, WHO/EPI technical staff,

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^1 Derived from LaFond, Anne. Sustainability and Health Sector Development. Save the Children Fund (UK), 1994, p. 6.
Ministry of Health (MOH) and other government officials, non-governmental organization (NGO) staff and community representatives were interviewed during the country visits. A total of 48 individuals were formally interviewed at the central level and nearly 150 interviews were conducted at the field level.

- **Country Visits:** During November and December of 1994, six countries were visited: Côte d’Ivoire, Ghana, Kenya, the Lao People’s Democratic Republic, the Philippines and Uganda. These countries were selected on the basis of immunization coverage in 1990, trends thereafter, geographic region, population, programme design and willingness to participate. Countries from the Latin American region were not included because the Pan American Health Organization (PAHO) was conducting a study intended to answer similar questions. An abbreviated case-study was also conducted for India, using a combination of document reviewed limited national level interviews. Using achievement/non-achievement of UCI as one set of variables, and subsequent maintenance/decrease of coverage as the second, efforts were made to include at least one country with each of the four combinations of experience. In practice this proved to be elusive because of the limitations of coverage data.

D. **Findings**

1. **Accomplishments**

Without exception, interviewees took pride in the accomplishments of UCI. The greatest achievement of UCI was reported to be raising coverage of infants to levels of 80 per cent in a few short years. This contributed to a significant reduction of mortality and morbidity in children. UCI brought child health and prevention into the public and political eye. By combining simple and effective technologies in service delivery with the political will necessary to mobilize interest and resources, coverage increased at rates never before seen. This confirmed what was possible and set the stage for further expansion of PHC.

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2 The Philippines achieved UCI in 1990 and has subsequently improved coverage to levels above 90 per cent; in addition to routine BPI programmes, disease surveillance and NIDs have been introduced for poliomyelitis eradication. Ghana, Kenya, the Lao People’s Democratic Republic and Uganda did not achieve UCI in 1990 but have maintained or improved coverage since 1990. The Lao People’s Democratic Republic provides an example of rapid increases in coverage through the use of periodic outreach strategies, while Ghana provides an example of routine systems development for PHC. Cote d’Ivoire did not achieve UCI in 1990 and has experienced declining coverage similar to that of several West and Central African countries (data obtained from CCCD Project).
Many national health systems and donor organizations were essential partners in UCI, but interviews and country visits confirmed the special leadership role played by UNICEF and its late Executive Director, Mr. James Grant. At the country level, UNICEF was viewed as a 'can do' agency that was able to use its influence and resources effectively to energize people and programmes. Support was leveraged to bring immunization services up to scale. UNICEF usually began acceleration activities with a 'Mr. Grant visit' which built support for immunization at the highest political level. Often, heads of state or their designees agreed to take an active interest in service delivery and. UNICEF helped to provide information on progress and needs to those in power.

UCI helped to show that ministries of health could provide services such as immunization to all children. In every country visited, immunizations were the first modern health service to be broadly distributed. UCI also showed that low coverage was not just a medical problem, but pointed to the need for management and administrative changes. This contributed to the improvement of systems necessary for PHC in many countries. UCI was described by some as the 'locomotive that pulled the train'.

The period since 1990 has challenged immunization's proponents to develop an approach geared to sustained achievement. Post-UCI activities are perceived to be less successful because coverage in some countries has stabilized or declined and the more ambitious mid-decade and year 2000 goals are yet to be realized.

2. Immunization Coverage

What has happened to immunization coverage since 1990? Table 1 classifies developing countries for which 1993 data were available from the WHO EPI Information System according to the UCI target and performance since then.\(^3\)

Existing coverage data are the best data for measuring performance at this time, but they are imprecise because of the large number of conflicting sources and frequency of errors in estimates. In order to have confidence that coverage had changed after 1990, the Steering Committee decided that 1993 figures had to be at least 10 percent greater or less than 1990 figures. Those that did not change significantly were considered to have remained the same.

The large majority of countries (70 per cent) that achieved UCI have maintained coverage. Fewer have shown improvement, but partly this reflects the loss of sensitivity in measurement by surveys as coverage exceeds 90 percent, and the definitions of change in coverage selected for this review. A substantial percentage of countries that did not achieve UCI (38 per cent) have experienced improvements. Among those countries that achieved UCI and are now

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\(^3\) Assignment by UCI achievement was based on whether countries had reached 80 per cent BCG, OPV 3 and measles coverage for children under one year in 1990. African countries were considered to have achieved UCI if they reached 75 per cent BCG, OPV 3 and measles coverage for children under one year in 1990. Coverage figures may represent either reported or survey data.
showing coverage declines, there may be some confounding by the comparison of survey and routine data. However, the majority of these countries are in Africa and the declines in them appear to be significant. The countries which did not achieve UCI and are now experiencing declines may be the greatest cause for concern because the Solutions to the proems of establishing successful immunization programmes in them have been elusive. Some of these countries have never had particularly strong systems, such as Chad and Senegal Others, such as Ethiopia, Kuwait, and Yemen, have experienced political unrest or economic disruption.

3. Factors Relating to Sustainability of Immunization

A combination of supply and demand factors act through a web of interlinkages to influence sustainability (Figure 1). No single factor guarantees sustainability. Changes in one factor have an impact throughout the web. Thus, decisions on what and how much to change to make immunization more sustainable require detailed planning and time, with consideration of all factors of the web in national contexts.
Table 1: Developing Countries Classified According to UCI and Change in Measles Coverage in 1993 Compared to 1990

<table>
<thead>
<tr>
<th>Measles Immunization Coverage</th>
<th>Achieved UCI</th>
<th>Did Not Achieve UCI</th>
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<tr>
<td>Improved since 1990</td>
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<tr>
<td>Colombia</td>
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<td>Algeria</td>
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<td>Dominica</td>
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<td>Antigua &amp; Barbuda</td>
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The current state of technology of vaccines, the technical and economic mechanisms for ensuring production, and research for the development of new or improved vaccines constrain current immunization programmes. For example, service delivery strategies had to be designed to take into account limitations in heat stability and the need for series of vaccinations to produce immunity. Similarly, ensuring vaccine supply at the country level has been dependent on investment in production and tiered pricing. Investment in research for new vaccines of limited use in developed countries is difficult to maintain. Countries and organizations which fund and implement immunization programmes all work within these technological and economic boundaries.

Figure 1: An Overview of Systems for Immunizing of Children in Developing Countries

The internal structures, leadership, mandates, advocacy and fund-raising activities of donor organizations have an important influence on sustainability of country programmes. Leadership within donor organizations influences internal operations and approaches taken in countries. Mandates form the boundaries within which donor agencies work, and they are used to justify the focus and emphasis of what will be supported in countries. A mandate for sustainability exists in many organizations, but there was little agreement about what it means or the mechanisms believed to be necessary to attain it.

All donor agencies see themselves as advocates for people, programmes and policies. UNICEF sees itself as the principal global advocate for children. Prior to 1990 and since, UNICEF has pushed strongly for national governments to rapidly and intensively expand immunization programmes. At times this advocacy introduced conflicts which undermined the development of local ownership and commitment, both key elements of sustainability. Well-publicized, easily understood initiatives such as UCI and polio eradication have been particularly effective in directing resources into immunization. However, they may cause imbalances in the development of health systems in countries if other priority programmes do not receive adequate resources.

Financing issues were the most frequently identified in relation to sustainability. They included the amount of funding provided to countries; the consistency, timeliness and reliability of funding; and the degree of conditionality of the funds provided. The process of external funding affects the national sense of ownership and ability to plan for the long term. The degree of flexibility and locus of control of funds affect systems development, including operational costs and vaccine procurement.

The level of external donor funding provided affects the ability of the government system to maintain coverage. Donor funding for immunization peaked in 1990 and has declined except where poliomyelitis eradication efforts are being undertaken. Various cost studies have indicated that there are countries which cannot afford, currently or in the medium term, to fully immunize all their children.\(^4\) Yet there is not always donor recognition of these realities.

The source of funds strongly influences the development of ownership and commitment to immunization programmes. During UCI, programmes were developed with heavy external resource support and were felt to be donor driven. External funds covered training costs, per diems for outreach, supervision and social mobilization. These activities are difficult to maintain because local ownership and the funding that would follow strong commitment by governments have not always

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materialized.

The procurement of vaccine is now a key focus of donors and governments that are moving to government responsibility. This will help to ensure one critical input, but does not address the equally critical availability of operational funds for reaching children. The funds needed for supervision and transport are declining as donors withdraw funding and governments and communities fail to take them over. This has decreased outreach and undermined credibility, decreasing coverage in some places for the short term.

At the national level, coordination among donors and governments influences how EPI programmes are funded, designed, and implemented. Donor coordination was reported to be poor, resulting in inefficiency in many instances. In those countries where governments have taken strong leadership roles in coordinating committees and resource prioritization, immunization has been more likely to be sustained or improved. The weakest and poorest countries are those in which donors have the greatest influence and yet the countries' ability to coordinate donors is often the least developed. Coordination itself requires strong leadership and adequate resources of time, personnel and finance.

The level of development of the economy, political stability and physical security within countries affect sustainability, and are usually beyond the control of health programmes. When political administrative systems are more developed, countries are better able to utilize technical and resource inputs to improve outcomes.

The development and maintenance of political will at the highest levels was a hallmark of UNICEF and UCI, and it has continued to be an important factor for sustaining immunization. Mobilization of politicians and, by extension, government workers and social leaders helps to provide credibility and resources to immunization. However, the influence of political will may be limited by the context of the absolute level of resources in a country and the systems in place to use resources efficiently. Political will can also affect sustainability negatively, especially when it becomes singularly associated with one form of government or a particular political group.

Government financial systems were reported to be inefficient and subject to manipulation. Even when they functioned adequately, restrictive rules and regulations made it difficult to undertake some activities important to generating long-term support for immunization. The lack of transparency of government accounting and reporting systems, especially at the central level, was also identified as a problem. Donors have responded by establishing mechanisms that go around central government systems to deliver funds closer to the point of implementation. While this was a common practice, it favors short-term results over maintenance of benefits for the long term, since these mechanisms are not built into systems that must take responsibility for continuing services.
Three themes within the structure of the health system were reported to be related to sustainability, especially after 1990. They are the service delivery strategies employed, integration of programmes, and the working relationship between the public and private health services sectors.

Services have been delivered in a variety of ways in all countries. Some respondents maintained that the campaigns that characterized UCI helped to push services out to the periphery and to revitalize PHC systems. Others stated that campaigns had no lasting impact and at worst were used as tools for individual career advancement. Reports of problems with campaigns generally outweighed reports of advantages. For example, single campaigns or series of campaigns for one year only were described as irresponsible unless plans with guarantees for finances for follow-up activities were made. During campaigns, extra resources such as incentive payments to health workers and communities were given, creating disillusionment when they could not be sustained. Campaigns were implemented quickly in pursuit of targets and often outran the development of essential supply and maintenance systems, causing substantial inefficiency. Informants strongly expressed the opinion that these unsustainable approaches from the 1980s must be avoided in the 1990s. Virtually all who were interviewed agreed that, over the long run, sustainability of immunization services and the expansion of primary care would best occur in the setting of fixed health centers with outreach activities.

Integration of maternal and child health (MCH) services is a common theme for health systems in developing countries. The general perception among those interviewed is that integrated services are more sustainable than single focus services, especially at the community level. This is because community demand is linked to the availability of other services—in particular, drugs—at health facilities.

Some informants argued that polio eradication could be used in the same way that EPI was used—as an important mechanism for building PHC systems in developing countries. While this is a possible scenario for health system evolution, many other informants felt there would be conflicts with national ownership and commitment to programmes, particularly at a time when donor resources for EPI are declining and countries are being charged with the task of sustaining coverage.

The role of the private sector and relationships between the public and private sectors for immunization services were identified by informants as poorly addressed to date, but as an increasingly important issue for sustainability.
Operational elements of the health care delivery system that had the most important influence on sustainability were decentralization, goals and targets, disease surveillance and long-term planning.

The capacity of nations and districts to plan is essential for sustaining immunization. This was a hallmark of successful programmes in the Latin American region. However, planning and implementing in a two- or three-year donor-imposed time horizon can undermine adoption of strategies and approaches required to produce sustained results.

Decentralization or devolution was a recurring theme for all countries. It is happening quickly, variably, and often without solid support systems in place at district level. It is perceived to be positive for sustainability because it enables planning and management of resources to take place more efficiently, effectively and closer to beneficiaries. However, in the short term it has disrupted the delivery of immunization services because of shortages of drugs in health centers, lack of funds for supervision and transport, lack of local expertise in financial management, and confusion over roles and responsibilities. Effective decentralization requires time and support, and to evaluate its impact on immunization programmes and health systems will similarly require a long time-frame.

The incidence of disease and of death due to immunizable disease is recognized as a better measurement of the impact of immunization programmes than coverage. Some argued that incidence of disease is the only adequate measure of sustainability. However, in much of Africa and Asia, disease surveillance is weak and felt to provide insufficient information for programme management purposes.

The issue area of goals and targets generated the most comment during the review. The consensus was that it is important to have goals and targets since they make it possible to monitor and assess the progress of programmes, provide direction, challenge providers and communities to improve, and, most importantly, help gain and maintain the support of politicians and bureaucrats, which in turn makes funding more likely. However, goal and target setting was a double-edged sword. The global pressure to achieve UCI sometimes resulted in short-sighted decisions that were based on meeting a specific 1990 target, with little thought given to whether these results could be sustained in the ensuing year. Overemphasis on goals and targets was reported to have contributed to incorrect reporting and manipulation of data for political purposes in some countries. Great frustration was expressed at the country level, especially during the time the target date of 1990 approached, when reported achievement of 80 per cent coverage was perceived by some as an all-or-nothing proposition.

There are major differences among countries which need to be taken into account in order to set goals at reasonable levels in appropriate time-frames. The biggest concern for applying global goals without adapting them locally was that by outrunning local capacity in the short term, failures for the medium term were more likely. In some places, failures to achieve or sustain UCI were
reported to have created an atmosphere of distrust of the service provision system that has been difficult to change thereafter.

There is a critical need to plan and monitor how goals are achieved, not just that they are achieved. At the global and national levels, concerns were raised about the lack of process and of strategy objectives and indicators. Indicators for measuring sustainability in terms of process and trends are needed.

Community and individual demand for immunization and other services was identified as a critical factor contributing to sustainability. Social mobilization has been the most common activity used to increase demand. It has increased intersectoral collaboration by building ties to NGOs and government agencies outside of health. This brought resources and people together in the pursuit of one goal—immunizing children. Community participation is the stated ideal, but little actual investment in its development through immunization programmes was described. Working with communities takes time and a willingness to wait for local decision-making processes to evolve. This has conflicted with time-driven goals to show results.

The idea of cost sharing by the community was identified as essential for sustaining any type of PHC. Some informants saw this as a major potential contribution to solving the financial problems of decreasing donor or government funding for immunization, even though cost data suggests that this is unrealistic. There are important gaps in understanding among many programme managers, donors and policy makers about what inputs are required to make cost sharing work, what cash or in-kind contribution can realistically be made, and what is needed to negotiate support for immunization as part of a package of desired services. Furthermore, there is even less understanding about other aspects of the potential of cost sharing, such as giving local people control over resources, increasing morale and increasing the accountability of health services to local communities. Practical evaluations of the BI and other financing programmes may not be discussed and communicated widely enough to guide efforts in immunization to build sustainability.

4. Conclusions

The Steering Committee for Lessons Learned on Sustainability for Child Immunization believes that a great deal has been accomplished and learned through UNICEF’s efforts over the past decade. The challenge now is to build on these achievements so that the children born during the 21st century will reap the full benefits of this experience.
I. **Background of Study**

Beginning in 1984, national governments, UNICEF and other organizations undertook a series of initiatives to increase immunization coverage in order to decrease childhood morbidity and mortality. The original initiative was UCI by 1990, defined as providing 80 per cent of the world’s children under one year with six antigens (BCG, DPT, OPV, measles). For Africa, UCI was defined by health ministries as achieving 75 per cent coverage of children. Since 1990, programme strategies have been broadened from a focus on immunization to MCH interventions that will help achieve the year 2000 goals established at the World Summit for Children.

For UNICEF, UCI was a natural outgrowth of the Child Survival and Development Revolution of the 1980s. By combining the availability of simple and low-cost technical solutions to child health problems with the exercising of political will and social mobilization, UNICEF could translate advocacy and resources into saving children’s lives.

Since 1990, UNICEF’s programme strategies have been broadened from a focus on immunization to PHC. EPI Plus adds other child survival interventions to service systems begun with immunization, and the BI establishes mechanisms for community financing and community management to improve the supply of peripheral primary care services.

**A. Universal Child Immunization**

In 1977, the World Health Assembly challenged the countries of the world to increase immunization coverage of children by the year 1990. Although significant progress was made up into the 1980s, it had become clear that donor, government, and societal efforts would have to be accelerated if this goal were to be reached. By 1987, nearly all countries had established accelerated immunization programmes and were utilizing a variety of strategies to improve coverage. These strategies included national campaigns with mobilization of religious leaders, teachers and other community leaders, and intensive media support. They also sometimes included improving the efficiency and capacity of health services, enumerating target children and rigorously tracking each child to assure completion of the vaccination series by the first birthday, and mandating early immunization. Donors contributed substantially to acceleration of immunization programmes through the provision of vaccine, funds, technical assistance and political support.

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5 In some documents EPI Plus is referred to as UCI Plus. For the purpose of this paper they may be considered interchangeable.

6 In some documents BPI plus is referred to as UCI plus. For the purposes of this paper they may be considered interchangeable. 6UNICEF. **UNICEF Health Policies and Strategies: Sustainability, Integration and National Capacity-Building. E/ICEF/ 1992]L.7, May 1992.**
B. EPI plus

UCI has helped to establish systems and service delivery mechanisms that reach over 100 million children under one each year. EPI plus is intended to expand and strengthen the range, intensity and quality of MCH interventions by building on the success of the EPI. Two complementary approaches to extending EPI are being implemented. The first is to use current EPI programme contacts with children and mothers to deliver other interventions, such as vitamin A supplementation. The second approach involves the integration of interventions starting with and expanding the service delivery system established by EPI. These interventions include pneumonia case management, oral rehydration therapy, antenatal care, family planning and health education.

C. Bamako Initiative

The BI was launched to revitalize health care systems in sub-Saharan Africa. Its geographic purview has expanded to include other regions, and in general the BI aims to provide accessible, affordable and sustainable health care delivery systems through an emphasis on the involvement of communities in management and financing. The eight principles which serve as operational guidelines are directed towards the provision of universally accessible PHC. This is to be accomplished through increased national commitment to PHC, decentralization, community financing, essential drug policies, measures for ensuring that the poorest have access to health services, a clear definition of the intermediate health system, and establishment of management objectives and indicators to measure them.\(^7\)

D. Child Immunization

On a global level, the goal of UCI was achieved in 1990: 80 per cent of the world's infants were vaccinated with six antigens before the age of one year.\(^8\) This prevented an estimated three million child deaths in 1990 alone, and significantly reduced the morbidity associated with immunizable diseases, especially measles and polio. However, coverage levels varied significantly by region, with achievements generally lower in Africa than in Asia and the Americas (Table 2). At the country level, variation in coverage was even greater. Measles coverage in 1990 ranged from 18 per cent in Guinea to 100 per cent in Anguilla. The extreme variation among 200 countries for measles vaccination is illustrated as a scatter diagram in Figure 2.

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Table 2: Percentage Estimates of Immunization Coverage of Children Under One Year by Geographical Region, Industrialized and Developing Countries, 31 December 1990

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<td>Europe</td>
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<td>Oceania</td>
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<tr>
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<td>85</td>
<td>79</td>
</tr>
<tr>
<td>Industrialized Countries</td>
<td>87</td>
<td>83</td>
<td>87</td>
<td>83</td>
</tr>
<tr>
<td>GLOBAL</td>
<td>90</td>
<td>83</td>
<td>85</td>
<td>80</td>
</tr>
</tbody>
</table>


Globally, immunization coverage rose rapidly, from about 20 per cent in 1980 to 80 per cent in 1990. Some country programmes began acceleration activities in 1984-1985, but the greatest efforts were made in the last years of the decade, just prior to 1990. Just as there have been large differences in annual coverage by country, there has also been variation in the rate of coverage change during the period of UCI acceleration. Much of the difference in coverage trends from 1985 to 1990 has been attributed to changes in implementation strategies, resource availability and mobilization, health systems infrastructure, social mobilization and political will. In the late 1980s, policy makers and service providers began to query how countries would maintain and improve the high levels of immunization being achieved. Questions about sustainability⁹ began to be raised, although reaching UCI in 1990 was still viewed by most donors and programme managers as the primary objective.

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⁹ For the purposes of this review we define sustaining immunization to mean that a health system continues to provide immunizations effectively, over time, with minimum external inputs. LaFond, A. Op.cit., 1993.
Figure 2: Range of Measles Immunization Coverage of Children Under One Year in 200 Countries, 1990

In late 1990, building on the extraordinary public health success of immunizing 80 per cent of the world's children, the World Summit for Children greatly expanded the scope of health and social sector aims with a set of goals for the year 2000. Immunization is now only one of an ambitious set of activities, and the current targets are 90 per cent coverage of children under one year, eradication of polio, 95 per cent reduction in measles deaths and 90% reduction in measles cases, and elimination of neonatal tetanus (NT).

In order to achieve these goals by the year 2000, immunization of children must be maintained in those countries that achieved greater than 90 per cent coverage in 1990, and improved in those that did not. Originally this seemed to call for an extension of current activities to difficult to reach populations—the remaining 20 per cent. But as subsequent changes in immunization coverage have shown, what is needed for continuous improvement may be much more complex.

Since 1990, immunization coverage rates have fluctuated, declining precipitously or steadily in some countries, reaching plateaux in others, and increasing in yet others. In one UNICEF analysis, out of 74 countries for which 1993 figures were available, 23 have increased immunization coverage for completing the third dose of DPT, 37 have maintained the 1990 level, and 14 have fallen back significantly. Using UNICEF data available as of the end of 1994, changes in coverage by region from 1990 to 1993 are shown in Figure 3. Though these data represent weighted averages of regional coverage, the trend in West Africa appears to be declining coverage, and in East Africa coverage has not risen above 1990 levels. The other regions have maintained coverage or shown some improvement, although not on the accelerated scale of the 1980s. At the country level, changes have been more dramatic, leading both policy makers and programme managers to question why.

As a consequence, there is increased interest in understanding how to sustain immunization programmes and their outcomes. If the year 2000 is to be more than an end point, it is critical to review both successful and unsuccessful country experiences and to use these lessons to plan for the future.

The year 2000 goals are ambitious and require substantial inputs and commitment. While global progress in immunization coverage still needs to be made, 18 developing countries have already reached 90 per cent coverage for the original six antigens. What approaches and strategies are needed now to increase and sustain the levels needed on a global level? Many of the issues thought to be related to sustainability continue to be debated. The relationship of sustainability to

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immunization programmes and their prospects requires further exploration.

Figure 3: Crude Vaccination Coverage of Children Under One Year for Measles by Year, UNICEF Regions

E. Review of Lessons Learned

In September 1994, the Evaluation and Research office of UNICEF headquarters commissioned a review of the lessons learned from UCI and the implementation of immunization programmes since then. This review has been conducted under the auspices of a Steering Committee of international experts with the assistance of three external consultants. The Steering Committee and consultants were assisted by UNICEF staff in the Evaluation and Research Office, as well as by representatives and health personnel in UNICEF country offices. The Steering Committee convened three times to review and approve key activities, including: terms of reference, selection of countries, data-collection instruments, study design and progress of work at key stages. The Committee reviewed the final report.

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15 The Latin American region was not included in this review, although interviews contain some information on lessons learned from BPI experience there. PAHO has recently completed a major review of the eradication of polio and its influence on primary health care systems.
II. Purpose and Objectives

The purpose of this external review was to document lessons learned from the history and evolution of child immunization in developing countries over the last decade. Lessons learned are intended to provide information about factors that influenced the achievement and sustainability of the original goals of UCI in 1990 and which will contribute to achievement and sustainability of the mid-decade and year 2000 goals.

The specific objective were:

- Identify conditions within UNICEF, other donor organizations, and counterpart governments which would improve the design and implementation of immunization programmes with regard to sustainability.

- Identify lessons learned about the sustainability of immunization programmes that have broad applicability for developing expanded primary care and, more specifically, achieving mid-decade and year 2000 goals.

III. Conceptual Overview

At the country level, immunization programmes may be pictured as systems which can be assessed in terms of their characteristics and qualities as they influence sustainability. These are illustrated in Figure 4. It is easy to think of child immunization as the point in time when a health worker administers a vaccination to a child. Multiply this by many children, and we have UCI or year 2000 goals. But the supply systems which are necessary to bring that vaccination to that child and the demand systems which are necessary to bring that child to that vaccination are made up of many processes.

In order to understand what makes child immunization happen and, more importantly, what will continue to make it happen, all the component parts had to be explored. The supply aspects range from external donor assistance to political and administrative systems and to the technical and managerial components of delivering health services. The demand aspects range from literacy of mothers and health beliefs to mobilization of leaders and to community contribution and management of health services. By understanding the supply and demand for immunization, it may be possible to influence utilization of services and, ultimately, the health of children.
Figure 4: An Overview of Systems Factors Related to Sustainability

Adapted from Bertrand, Magnani and Knowles, Outcome, Effect, Impact: The Evaluation Project, 1993, p. 16.
The ultimate goal of immunization programmes is to ensure healthy children. Many factors affect child health; however, PHC programmes in general and immunization programmes in particular have been shown to contribute substantially to the prevention of disease and mortality. Based on the World Summit for Children, the mid-decade and year 2000 goals provide measures of these outcomes (Table 3).

<table>
<thead>
<tr>
<th>Mid-decade Goals</th>
<th>Year 2000 Supporting Goals</th>
<th>Year 2000 Overall Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination of poliomyelitis in selected countries and region</td>
<td>Eradication of poliomyelitis</td>
<td>One-third reduction in under-five death rates</td>
</tr>
<tr>
<td>90% reduction in measles cases and 95% reduction in measles deaths compared to pre-immunization levels</td>
<td>90% reduction in measles cases and 95% reduction in measles deaths compared to pre-immunization levels</td>
<td></td>
</tr>
<tr>
<td>Increase of immunization coverage of six antigens to 80% or more in all countries</td>
<td>Achievement and maintenance of 90% immunization coverage of one-year-old children</td>
<td>Halving of severe and moderate malnutrition among under-fives</td>
</tr>
<tr>
<td>Elimination of neonatal tetanus</td>
<td>Elimination of neonatal tetanus</td>
<td></td>
</tr>
</tbody>
</table>


At the community level, there are cultural, societal and individual characteristics that influence the demand for services. In India and Uganda most of the population is rural, while in the Philippines there are sizeable urban populations. In most countries there are many different ethnic or language groups, and in Africa there are strong ethnic identities. With the exception of more affluent countries with strong commitment to education, the status of women and literacy rates are very low. Women are the backbone of agriculture and combined with household management spend most of their time in manual labour. In many African countries population growth rates are among the highest in the world, ensuring large numbers of newborns requiring immunization for years to come. While some countries, such as Indonesia, enjoyed economic prosperity in the last decade, succeeding economic crises and recessions have eroded income and opportunity in many of the African countries studied.
Given these characteristics and historical contexts, child caretakers and communities develop values and priorities that form the basis of decisions and actions to seek services for their children. This leads to a demand for PHC services and/or specific immunization services on the part of communities and individuals. Demand might be measured by levels of community awareness, participation, and support seen most clearly at the periphery, in health centers and districts. In a few cases, mothers’ acceptance and demand for services appear to be low, as traditional health systems form the basis for most prevention and healing and access to modem health services is limited. Many other countries have instituted organized cost sharing programmes that provide additional insight into community and client participation in the health system.

At a global level the supply of services is partly determined by the current state of technology for immunization, the mechanisms for ensuring vaccine production and supply, and the requirements for research and development of improved or new vaccines. The vaccines that are used today have specific characteristics that affect how they are manufactured, delivered and targeted to various age groups. This constrains how service delivery programmes can be designed. Ensuring the adequate supply (quantity and quality) of vaccines involves long-term investments, markets, and supply and distribution mechanisms. These investments are a function of markets and public-private sector interactions which are complex.

Donor Organizations

International organizations influence the evolution of immunization programmes in developing countries. These factors include internal characteristics of each organization and the ways in which they interact with each other. Internal factors might include organizational structures, leadership, mandates, advocacy, accountability and the requirements of fund-raising for support of programmes. The interactions of international organizations at this level may determine global goal setting, availability of funds, and conditionalities. While all these factors may greatly influence what happens in a given country, countries have little say in modifying them.
External donor assistance includes the provision of resources such as money, technical assistance and vaccine. Many donors have been active in immunization since 1980, but UNICEF has served as a leading donor in most countries. Until recently this has included the greatest share of procurement of vaccine, often with funding from bilateral and NGO donors. Bilateral donors, such as CIDA, DANIDA, Italy, JICA, ODA, SIDA and USAID, have provided funds for development and recurrent programme implementation costs. Some bilateral donors also provide technical assistance, particularly for training, cold chain and management.

UNICEF has been the main donor for social mobilization and communications, while WHO has been a technical partner, providing most of the training materials and assistance in information systems, cold chain, disease surveillance, and evaluation. NGOs have been an important source of funds, vaccine and cooperation for social mobilization at the national level. Rotary, with its Poliomyelitis plus Initiative, has been active in the push for poliomyelitis eradication, while Save the Children (UK) has facilitated a systems strengthening approach to extending services.

External donor assistance also includes the implementation of policies that can greatly influence the organization, operation and commitment to services within a country. The World Bank and the IMP have played a major role in shaping social sector priorities and in financing within countries, in the context of structural adjustment programmes. In some countries, bilateral donors tie funding to broader governance and humanitarian reforms. On a national level most countries have developed and committed to Programmes of Action for Children developed since the World Summit for Children. Regional level conferences, such as the Organization of African Unity (OAU) Dakar Conference in 1992 and SAARC meetings in the 1990s, reaffirm country commitment to children and to the year 2000 goals. More recently, many countries have signed the Convention on the Rights of the Child. This brings children's access to health services into the realms of law and human rights.

In all countries and at the global level, donor coordination for immunization and health greatly influences the allocation of resources and programme directions. Relationships among donors within a country and the level of participation by the host country government vary considerably. Coordination at the global level between multilateral and bilateral agencies sets the stage for country relationships.
At a policy level, donors interact with the political and administrative systems of countries, while at a technical level they may interact directly with programme staff. In most countries donors work with the Ministry or Department of Health, with the Ministry of Finance and/or planning, and in some cases with government agencies involved in media and communications. In the case of the Lao People's Democratic Republic, donor relationships with government are highly centralized and formal, while in Kenya and the Philippines donors may maintain regional offices. Donors may also interact with the private sector, especially NGOs, which provide a significant proportion of services.

The interactions of donors with governments are sometimes characterized by incompatibilities and sometimes by donor-imposed conditionalities. System incompatibilities can be seen when the needs of donor systems and government systems conflict. The most visible examples are in accounting and financial management. In some cases donors go around government systems to avoid incompatibility, as when donors disburse funds directly to districts. The most obvious incompatibility found is in the definition of the 'fiscal year'. Each donor may operate on a different fiscal year, which may also be different from that of the host government.

‘Conditionalities’ are conditions and expectations imposed by donors on governments as part of the process of negotiating project or programme agreements. One of the most extreme examples of conditionality was seen in Kenya, where the donors insisted on the government’s commitment and follow-through for financial and personnel support of the immunization programme before donor support was provided.

National political and administrative systems reflect levels of political will, support and commitment. In all countries senior political leaders have been involved in publicly promoting immunization and in monitoring coverage progress. This participation was felt to be important and directly related to visits and advocacy by the late Mr. James Grant. Political commitment extends down through the system to local participation.

National systems also manage resource allocation processes, including budgeting and planning, and disbursement of funds. In most countries, accounting and disbursement functions are complicated and inefficient processes. Their most notable characteristics are the long periods necessary, the rigidity of rules and the dearth of decision-makers. In many places, these systems have been disrupted by the process of decentralization or devolution.

Many countries have developed policies for and implemented decentralization in health, although the process has been going on for different lengths of time with different levels of commitment. In countries such as Kenya, progress has been slow, while in Uganda block grants have
already been made to districts. In Africa and in some parts of Asia, health committees or management boards with community representation have been established, but participation is very variable.

General political stability has influenced the consolidation of immunization programmes. Within countries that are currently stable, the inadequacy of reforms in the public sector, such as the size and accountability of the civil service can influence programme development. There may also be instability and system stress introduced by the influx of refugees, as in Tanzania and Zaire. There are also examples of the destruction of health systems in countries torn by civil war or violent political strife.

The organizational components of national and district health systems include infrastructure, such as facilities, roads and transport, and means of communication. The availability of health facilities is lower in underdeveloped areas, but in places that are better served there are also issues of aging and poorly maintained public facilities.

Other organizational components include integration with PHC services, service delivery strategies, and the mix of public and private (especially NGO) organizations that participate in PHC and immunization. In most countries, services to children are integrated at the health centre and outreach levels. The range of community-based services offered for PHC varies, but usually includes a basic package of child survival and maternal care. In some countries only one or two services, such as control of diarrhoeal diseases (CDD) or vitamin A supplementation, are offered. In others primary and curative care are offered together all the time. Despite a high degree of integration at the field level, central level offices are often vertically oriented and the links among the centre, provinces and districts may be weak.

The strategies used to deliver services have changed over time and vary by country situation. They include routine service delivery at fixed sites, usually health facilities, regularly scheduled outreach services, mobile teams, campaigns, NIDs and the 'routine' pulse or periodic outreach activity. In general, campaigns were used prior to 1990 to expand coverage rapidly, create political will, mobilize resources and create public demand. In some cases these campaigns used a single antigen, but now more often use multiple antigens. NIDs are used as part of the strategy to eradicate poliomyelitis, primarily in countries that have high levels of poliomyelitis vaccination coverage. After 1990, the expansion and strengthening of routine service delivery as part of an integrated package has been the norm.
Operational components are both managerial and technical, including the establishment of goals and targets as well as the processes for monitoring them, personnel skills development, information systems, communications, training, logistics and supervision. Most programmes maintain operational units in training, supplies, logistics, vaccines, cold chain, social mobilization, management information systems (MIS) and administration. Some maintain separate sections for disease surveillance.

The operations of the health care delivery system, such as the service mix provided and hours of service, directly influence the demand for services. They result in service outputs such as the numbers of immunization sessions or child contacts, information provided, and the numbers of vaccinations given. In some countries outputs are routinely monitored at the central level, particularly in the context of vaccine consumption. In others, information is limited by the lack of development of simple management systems.

Looking more closely at the process of health care, the quality of services may be measured by absence rates, waiting times and clarity of information. These processes might directly influence demand and service utilization. There have been some operations and qualitative research on these issues in selected countries in both Africa and Asia, although the mechanisms for feeding information into programme redesign are not always well developed. Improving the quality of services has appeared frequently in all programme reviews and reflects issues that need to be addressed for both the curative and preventive health care systems.

Utilization of services is measured by coverage of under-one-year-old children with the original six EPI antigens. Utilization can be more specifically characterized by measures of accessibility (BCG or DPT 1), acceptability, efficiency and quality of services (drop-out rates). In most countries, these indicators are monitored through routine reporting of immunization coverage, although in some there is heavy reliance on national coverage surveys. Coverage surveys are conducted at national and district levels as tools to validate the quality of routine reporting.

In most countries that are politically stable, access to immunization services is high, although there may be isolated, rural, sometimes nomadic populations that are more difficult to reach. In a few countries, such as the Lao People's Democratic Republic, access to services remains an important constraint, which can deal with by the development of pulse or periodic remains an
important constraint, which can be dealt with by the development of pulse or periodic outreach strategies. There may be more variation between countries in terms of population access to the full range of child health care services. In the Philippines there is a well-established and staffed PHC system, while in Nepal have to walk long distances over difficult terrain to find both staff and facilities.
IV. Methodology and Data Collection

A. Study Design

For the purposes of this study, countries were grouped by achievement of UCI and trends in immunization coverage since. The intent was to identify associations between indicators of sustainability and the maintenance or improvement of immunization coverage.

The indicators used to describe the issues and factors related to sustainability are provided in Annex C. Indicators were qualitative and quantitative, and they characterized global, national, district and community levels. Qualitative data has been collected primarily through interviews with knowledgeable individuals and groups, and secondarily from reports.

B. Data Sources and Methods of Collection

Information was collected through a desktop review, key informant interviews and country case-studies. Data collection instruments, including national and district level questionnaires, central level interview, field level interview, district level interview, health centre provider interview and health centre client interview instruments are contained in Annex C.

1. Desktop Review

Documents covering the UCI, immunization programmes, key organizations working in the field, and characteristics of the social and health sectors, both globally and in the six country case-studies, were reviewed from August to December 1994. Documents were obtained primarily from UNICEF, donor and technical assistance organizations and host country governments. Regional and global level documents were obtained from multilateral and bilateral development organizations, as well as government and non-governmental organizations. Among the documents reviewed were sustainability studies, policy documents, UCI and EPI evaluations, country plans, programme reviews, coverage surveys and situation analyses. From these sources it was possible to trace the history of UCI and immunization, as well as case-study programmes, since 1990, and to put them in the perspective of overall health sector development.

Immunization coverage data were obtained from the Global Programme on Vaccines and Immunization at WHO/Geneva and from UNICEF headquarters. WHO data updated as of January 1995 and provided in a database file, were used as the source of choice for most coverage analyses.

16 They have been drawn from the collective experience of those who have designed, planned, implemented and evaluated immunization programmes since 1985. These indicators should be interpreted with caution as some may have stronger relationships to sustainability than others, and because they may interact with each other.
Country data were obtained from several sources and were often conflicting. Data identified as the most reliable and accurate by knowledgeable individuals who had worked or were working in-country were used for analytic purposes.

Background data for country studies were also collected through national and district level questionnaires. Knowledgeable individuals were asked to clarify and explain parts of the health system and the EPI programme. Historical information was not easy to obtain in any country, in part because of turnover of personnel and in part because of limited time. Financial data were incomplete and of variable accuracy.

An in-depth desktop review was also conducted for India, because it is one of the most populous nations and was one of the flagship countries in developing UCI/EPI programmes.

2. Key Informant Interviews

Interviews were conducted at two levels.

- Central level policy makers, including UNICEF headquarters staff, large donor organization staff, staff at WHO headquarters in Geneva, and individuals with significant UCI/EPI experience who were affiliated with other organizations, were interviewed by one consultant.\(^{17}\) For purposes of confidentiality the names of informants are not provided in any reports. However, a list of agencies contacted are noted in Table 4. A total of 48 individuals were formally interviewed at the central level.

- Regional and country level people from UNICEF offices, technical officers from WHO and other donor field offices, Ministry of Health and other relevant government officials, NGO staff and selected community representatives were interviewed for six country case-studies.\(^{18}\) One additional case-study included interviews from the national level only. While most interviews were with individuals, there were occasional group interviews of two to four individuals. These interviews were done by three consultants and were

\(^{17}\) Potential informants were suggested by Steering Committee members, UNICEF staff and other informants during the course of interviews. Each informant was then contacted by letter and telephone for consent to participate with a formal understanding that strict confidentiality would be maintained. At the time of the interview, consent to tape was requested. All interview notes, tapes and transcripts are stored by code number by one external consultant, supervised by the Chair of the Steering Committee. All raw data will remain with these two individuals until it is no longer needed, at which time it will be destroyed.

\(^{18}\) Potential informants were suggested by Steering Committee members, UNICEF country offices, other donors and EPI programme staff. Whenever possible, these interviews were also taped and transcribed. Taping was a sensitive issue in some countries and informants often seemed uncomfortable at district and community levels. whenever informants preferred, notes were taken and entered in word processing files afterwards.
organized by country. A total of nearly 150 interviews were completed in all countries. Interviews are stored by code number.

Table 4: List of Agencies Contacted for Interviews and Information

<table>
<thead>
<tr>
<th>Agencies Contacted at Global Level</th>
<th>Agencies Contacted in Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>BASICS Project</td>
<td>Christian Health Association of Ghana</td>
</tr>
<tr>
<td>Centers for Disease Control</td>
<td>DANIDA / Country Mission</td>
</tr>
<tr>
<td>Canadian Public Health Association</td>
<td>Government of France</td>
</tr>
<tr>
<td>Global 000</td>
<td>JICA</td>
</tr>
<tr>
<td>Centre Internationale de l'Enfance</td>
<td>Ministries of Health</td>
</tr>
<tr>
<td>Johns Hopkins School of Public Health Rockefeller</td>
<td>MCH or PHC Programmes</td>
</tr>
<tr>
<td>Foundation Rotary International</td>
<td>EPI Programmes</td>
</tr>
<tr>
<td>Save the Children Fund (SCF)/ UK</td>
<td>Ministries of Finance</td>
</tr>
<tr>
<td>Swedish International Development Authority</td>
<td>Ministries of planning</td>
</tr>
<tr>
<td>Task Force for Child Survival, Carter Center</td>
<td>SCF/ UK Country Offices</td>
</tr>
<tr>
<td>UNICEF/ Headquarters UNICEF/ ESARO</td>
<td>UNICEF/ Country Offices</td>
</tr>
<tr>
<td>UNICEF/ MENA</td>
<td>USAID/ Country Missions WHO/ Country Offices</td>
</tr>
<tr>
<td>UNICEF/ CEE &amp; NIS</td>
<td>World Vision Country Office</td>
</tr>
<tr>
<td>US Agency for International Development</td>
<td>(Local non-governmental organizations)</td>
</tr>
<tr>
<td>US Dept of Health and Human Services</td>
<td></td>
</tr>
<tr>
<td>World Bank</td>
<td></td>
</tr>
<tr>
<td>World Health Organization/ Geneva</td>
<td></td>
</tr>
<tr>
<td>World Health Organization/ AFRO</td>
<td></td>
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<tr>
<td>World Health Organization/ PAHO</td>
<td></td>
</tr>
</tbody>
</table>

Throughout this report and in subsequent reports, quotations are occasionally used to illustrate consensus or a range of points of view on a particular subject. Attribution is not made and identifying information has been removed.

3. Country Visits

During November and December 1994, six countries were visited as part of this review: Côte d'Ivoire, Ghana, Kenya, the Lao People's Democratic Republic, the Philippines and Uganda (see Annex D for individual country reports). They were selected on the basis of immunization coverage experience in 1990, trends thereafter, geographic region, population, programme design, and willingness to participate. For the purposes of this analysis the six countries classified by coverage experience are shown in Table 5. Efforts were made to include at least one country with each of the four combinations of experience, although in practice this proved to be elusive because of rapid changes in coverage data provided.
Table 5: Classification of Countries by Immunization Coverage Experience in 1990 and afterwards*

<table>
<thead>
<tr>
<th>Immunization Coverage</th>
<th>Achieved UCI</th>
<th>Did Not Achieve UCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same or improved since 1990</td>
<td>Philippines</td>
<td>Ghana, Kenya</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Laos, Uganda</td>
</tr>
<tr>
<td>Declined since 1990</td>
<td></td>
<td>Côted'Ivoire**</td>
</tr>
</tbody>
</table>

* Source of data for classification, WHO / EPI Information System
** Source of data for classification, CCCD Project.

Within each country, efforts were made to visit two districts (including provincial or regional level if appropriate) and two health centers within each district. These sites were selected by criteria such as different levels of immunization coverage, accessibility, and the focus of current strategies. Site characteristics and interview activity are summarized in Table 6. There were separate questionnaires for district level interviews which emphasized more practical topics, and health centre interviews, with both providers and consumers, which were less structured around service delivery strategies and community participation.

C. Limitations of the Study

The limitations of this study reflect the complexity of the subject. In many respects this review may raise more ideas or hypotheses to be tested than will provide definitive answers to questions. The following issues should be considered in appraising the results of this review and in extending conclusions to current immunization programmes.

- The scope of this review included only child immunizations. Reviewing the issues of services to women, especially tetanus toxoid, greatly expands the information needed, and it was not possible to assemble these data in the time-frame provided.

- There is a great mass of documents about sustainability, immunization and the organizations involved, while many were reviewed as part of the background to the study it was not possible to locate and read them all, nor were they necessarily all considered equally and appropriately.

- Coverage data were obtained from several sources, and given differences in collection methods, data management procedures, timing of updates, acceptance of figures, and reporting formats, there were many inconsistencies among sources. We were not able to reconcile these sources in the time allotted for this review.

- Financial data were incomplete and were not reconciled among sources. We cannot describe either the actual expenditures on programmes in countries or overall from the perspective of UNICEF and other donors.
<table>
<thead>
<tr>
<th>Country</th>
<th>Provinces or Districts</th>
<th>Selection Criteria</th>
<th>Category of Interview Conducted</th>
<th>Numbers of Interview completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Côte d'Ivoire</td>
<td>Health District A</td>
<td>High coverage</td>
<td>District health staff</td>
<td>7 National</td>
</tr>
<tr>
<td></td>
<td>Health District B</td>
<td>Low coverage</td>
<td>NGO</td>
<td>6 Regional or District</td>
</tr>
<tr>
<td></td>
<td>Health District C</td>
<td>Additional district level data</td>
<td>Health center</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Vaccination clinic</td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>District A</td>
<td>High coverage</td>
<td>Regional health staff</td>
<td>6 National</td>
</tr>
<tr>
<td></td>
<td>District B</td>
<td>DMO only</td>
<td>District health staff</td>
<td>3 Regional</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Health centre</td>
<td>3 District</td>
</tr>
<tr>
<td>Kenya</td>
<td>Province A</td>
<td>Low coverage</td>
<td>Provincial administration</td>
<td>14 National</td>
</tr>
<tr>
<td></td>
<td>District A-1</td>
<td>Less accessible</td>
<td>District administration</td>
<td>12 District</td>
</tr>
<tr>
<td></td>
<td>Municipality</td>
<td>Focus of measles initiative, mid decade campaigns</td>
<td>District health team</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Minority, traditional ethnic group</td>
<td>Municipality health team</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cost sharing scheme</td>
<td>Health centers</td>
<td></td>
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<td></td>
<td></td>
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<td></td>
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<td>High coverage</td>
<td>Provincial administration</td>
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<td>Near Nairobi</td>
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<td></td>
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<td>District health team</td>
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<td>Pilot EPI-related project</td>
<td>Municipality health team</td>
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<td>Accessible within time-frame of visit</td>
<td>Provincial administration</td>
<td>17 National</td>
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<td></td>
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<td>Higher Coverage</td>
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<td>Active NGO</td>
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<td>Lower coverage</td>
<td>Health workers</td>
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<td></td>
<td>Province A</td>
<td>Minority Groups</td>
<td>Health volunteers</td>
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<td>District A-2</td>
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<td>Selection Criteria</td>
<td>Category of Interview Conducted</td>
<td>Number of Interviews Completed</td>
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<td>Urban, More prosperous, Coverage high</td>
<td>Municipal authorities, City health staff, Provincial health team, Provincial authorities, Barangay health workers</td>
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<td>Manila City District B</td>
<td>Urban, More depressed, Migrants</td>
<td>District administration, District health team, Health centres, NGO providers, Mothers at HCs, Health committee chairs</td>
<td>16 National, 12 District</td>
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<td>Rural, More prosperous, Coverage high</td>
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</tr>
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<td>High coverage, Decentralized first, NGO support to district system development, Near Kampala, MIS pilot project, Strong district administration, Staff available</td>
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<td>District administration, District health team, Health centres, NGO providers, Mothers at HCs, Health committee chairs</td>
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</table>
Interviews were conducted with informants depending on availability in the time-frame for the review. While nearly all suggested informants were interviewed, there were some who were not reached, especially among bilateral donors and smaller NGOs.

Only a small number of countries were visited for case-study reports. Some countries which may have been representative of other important approaches were not included. Specifically, no countries that reached UCI and then declined significantly were reviewed.

The Latin American region was purposely not included in this study because of concurrent evaluation of poliomyelitis eradication and PHC systems by PAHO. Since the PAHO study was not available at the time of the writing of this report, we have not been able to include a discussion of potentially important regional differences.

District and community level information from country case-studies is very limited. In practice, health centre interviews were not always arranged with sufficient lead time. Interviews focused on clients rather than the community at large. Also, the range of subjects discussed with clients was limited, and the interviews were short, with providers present for most of the time.

This review focused on immunization programmes, which are now mostly incorporated in broader PHC programmes. Many of the issues that concern sustainability are also relevant to the broader picture, but detailed information on the package of services/programmes provided was not collected.

The current delivery of immunization in emergency situations, such as natural disasters, war and refugee camps, was not reviewed. Both sustainability issues and programme approaches would be considerably different than in the national country programmes included here. Thus, the conclusions stated here do not apply to emergency situations.

Limitations that arise from the various data collection methods, reviewers' skills, and time constraints also apply. Finally, this review was commissioned by UNICEF with a primary purpose of informing internal policy and programme decisions. Questions were asked and informants responded in this context. There may be some differences in the openness of response by individuals internal or external to the organization, depending on where and when they were interviewed.

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V. Findings

This section is divided into five parts. These parts describe informants' views on the definition of 'sustainability', global and national accomplishments, coverage trends, measuring sustainability, and combined global and country case-study results.

A. Definition of Sustainability

When key informants used the word 'sustainability' during interviews, they were asked for their own definitions. Policy makers and health managers claim that the word (and concept) came into use for immunization in the late 1980s. Many people made the point that it was necessary for the definition to include not only financing but services and benefits, and to take into account the juxtaposition of external inputs and ownership.

*It means that you have reached 90 per cent coverage.*

*Sustainability is not just the financial part. It's a mentality ... I mean, it's the managerial issues, and it's the community issues, and it's the financial issues.*

*What I am saying is that whatever goals we've achieved, whatever successes we've put up, whatever foundation really we've laid, whatever perception from the community, and whatever would be listed as positive aspects that have been created from the beginning, should be sustained with decreasing costs.*

While there was consensus on needing a broad, more encompassing definition, there were differences in ideas about the role of external inputs, the decisions that donors make, national ownership and commitment, and the role of the community. These differences seemed to reflect the approaches taken by the organizations that informants worked in, whether they were donor, national government or NGO.

*It's a level that the country can maintain over time for not just status quo, but something that doesn't require a tremendous amount of external persistence that's propped up by external resources.*

*There is one aspect of the definition which our concept of sustainability does not qualify. The cost element of providing vaccines is something which is still beyond the resources of this country.*

*For a country to be able to pursue their own development by themselves without the support of external donors or countries or governments.*

*A sustained programme is one that is in the national consciousness of every government.*
As various definitions were proposed, it became clear that a working definition that was simple and responded to these elements would help focus further discussions. A definition was adapted from Save the Children (UK) studies on sustainability of PHC.20

**Sustainability of immunization is the capacity of the health system to provide immunization effectively over time with minimum external input.**

In order to get a sense of the appropriateness of the working definition at the country level, informants were asked for their opinions and reflections on it. With very few exceptions informants responded positively. The most tentative response was:

*The word sustainability is for us quite new. You know we have not yet thought a lot about this. Our objective now is to achieve the goal of 80 per cent coverage first of all.*

Some informants felt that immunization should not be separate from other PHC interventions and that sustainability definitions ought to include the 'basic package'. The other important addition proposed was community demand.

*The one that is missing is the public clamour for the immunization per se.*

As in the central interviews, the most controversy was generated by the phrase 'with minimum external input'. Some thought that 'minimum' meant no donor support, and this was felt to be unreasonable. Others took it to mean that national governments should be as self- sufficient as possible, but that donor also had obligations.

*Je comprends par là qu’il y a un minimum de ressources qui devrait être mobilisé pour avoir les activités nécessaires d’immunisation, et ce minimum de ressources devrait être soumis avec le budget du pays de manière a ce que l’activité continue, si un jour l’aide ou l’assistance extérieure s’arrêtait.*

There was one caution about the growing importance of incorporating 'sustainability' as a prerequisite to projects and programmes. It raises questions of our ability to project outcomes, and the role of success in maintaining activities.

*I think that we’ve often used sustainability as a reason for not doing something—that if we can’t show ahead of time that it’s sustainable, we won’t do it. I think that’s wrong, because I think we o/ten times don’t know what we can do until we try it, and that it’s success itself that leads to sustainability.*

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B. Global and National Accomplishment

I. Universal Child Immunization

The achievements and shortcomings of UCI have been documented in technical evaluations and public relations documents. Informants were generally pleased that UNICEF was taking the time to revisit UCI and carefully assess what has happened since. There were differences on what activities and approaches were felt to be weak and where UCI may have failed to reach its potential.

What was UCI?

... this wasn't really a health story, or isn't simply a health story. Yes, it's saved three million lives a year. But really this is an extraordinary endeavour, a human endeavour of cooperation between public/private sectors, peoples in all walks of life, governments in every country, even UN agencies working together more than they usually do. ...this is a kind of a human story of the triumph of the human spirit.

UCI was critically important in bringing child health and prevention into the public and political eye. Mr. Grant was the visionary who provided the leadership necessary to accomplish it, and UNICEF was an organization that could follow through in the countries. This attracted resources and commitment, and provided legitimacy to a public health effort.

I can appreciate what UCI did, which was to put child health and immunization high up on the political agenda, without which we would still be toiling in the wilderness, trying to get 30 per cent of the kids immunized every year.

The greatest achievement of UCI was to raise coverage to levels of 80 per cent in a short amount of time. This contributed to significant reduction of mortality and morbidity in children, and was the springboard for continuing efforts. UCI also brought awareness of immunization coverage to politicians and government administrators. Social mobilization began with high-level meetings of Mr. Grant with heads of state. The fact that it was possible to mobilize leaders and to obtain commitment and interest was notable.

This is a real niche that UNICEF has fixed, particularly through Jim Grant. I mean, he has been able to mobilize an amazing amount of political energy...

UCI also showed that low coverage was not just a medical problem but was also a managerial problem. This contributed to the development of management systems in country programmes. Some described UCI as the 'locomotive that pulled the train'.

The period since UCI has challenged its proponents to develop an approach that sustains achievement. Post-UCI activities are perceived to be less successful because coverage is no longer accelerating rapidly or has declined, and the more ambitious year 2000 goals are yet to be realized. UNICEF's attention is spread over more areas, such as education and water, and resources are being allocated for new humanitarian needs and diseases.
Programmes are deteriorating because of fewer resources UNICEF is now doing 80 things instead of 10.

The problems with UCI have to do with what was done and how it influenced other programmes, decisions and outcomes. They also have to do with what was not done to ensure continued success. UCI was perceived to have advocated campaigns as the most important global strategy to increase immunization coverage. This meant that what seemed to work in one country early on was transferred to other countries. This lack of flexibility persisted for many years.

UCI was also believed to be 'cheap' and this was communicated to country leaders. Many external resources were brought to bear on immunization in a very short period of time. Sometimes programmes that were being built slowly with community input were swept away with external resources and target-driven approaches for quick results. This was reported to be a significant problem in Africa.

We have money for that now, so we'll just do it instead of negotiating with communities for support or participation.

The most debated problem with UCI was whether it detracted from or contributed to the development of PHC systems. In practice the effects varied by country and programme, and it is difficult to make global generalizations.

UCI was disruptive for the entire development of programmes. It was very bad for the rest of us stopped the slow development of PHC through BPI.

In some countries it may have weakened the national capacity and national systems because you are trying to do things quickly. There was perceived not to be the time to fix fundamental institutional problems, so these problems remain.

UCI was extremely effective when health systems were working, but was ephemeral where the health systems were dysfunctional.

Part of the effect of accelerating immunization rapidly with less attention to building systems was to work against the development of national capacity I especially in countries with limited infrastructure and human resources.

In rushing around and trying to do things, people didn't take the time to analyse the situation properly or to develop that skill in the local people. Those attitudes have prevailed past UCI.

The goals and targets of UCI were clearly stated in terms of coverage. As coverage rates rose they became less useful indicators of programme achievements. Some felt that it was critical for disease control goals and targets to take the place of coverage for further improvements to be made. This required development of disease surveillance systems to
provide information, activities that were undertaken in Latin America and only lately in other regions.

The most important weakness of UCI was that there was never an explicit strategy that addressed sustainability, and what did exist was not effectively communicated to global organizations and national governments. In part, this review attempts to provide the basis for these kinds of efforts.

There is an inability of large organizations like UNICEF and WHO to place sustainability within the global conversation on development issues, and to sensitize the developed world on its importance.

2. National Accomplishments

The immunization programmes in all six countries visited have accomplished much over the last decade. Services were initiated and extended throughout each country providing protection against death and disease to thousands of children. Success with immunizations built confidence in public services and set the stage for expansion of other important MCH interventions.

- **Côte d’Ivoire**: Immunization coverage was accelerated through the use of campaigns during UCI. Basic service delivery systems, including cold chain and vaccine supply, were established. More recently efforts to participate in the Vaccine Independence Initiative (VII) and to improve the coordination of management have been made. Decentralization and BI projects are beginning to be implemented and are believed to hold promise for stabilizing coverage.

- **Ghana**: The accessibility to and utilization of the immunization programme is very high (88 per cent). Since 1989, there has been a marked improvement in coverage, and staff morale at the district and health centre levels has risen. Services are perceived to be valuable and community participation through management committees and cost sharing is increasing.

- **Kenya**: Immunization coverage is higher than in many African countries and has been maintained. Services and information about immunization have been extended out to the periphery, and child caretakers are aware and willing to obtain them. Services are integrated at the most peripheral levels through fixed service delivery points, and cost sharing with communities for facilities improvement and supply of consumables is functioning.
The Lao People's Democratic Republic: Policy makers and politicians have been mobilized, the cold chain is in place, and health staff is trained. The immunization effort has been able to reach remote villages which have never seen a government worker much less received health services. Several people referred to immunization as the 'cutting edge' of PHC, leading the health services into the communities where other MCH interventions will follow. The initial success in immunization has demonstrated that the Department of Health (DOH) is capable of delivering services, increasing confidence in health services and personnel.

The Philippines: The policy makers and DOH staff have been mobilized, a cold chain put in place and maintained, and personnel at all levels trained. The immunization effort has reached the remotest villages. Public knowledge of and attitudes towards immunization have been greatly improved so that immunization services are actively sought. The immunization effort in the Philippines has accomplished more than high coverage rates. It has given the DOH a new reputation for effectiveness and credibility. This has benefited other PHC interventions such as growth monitoring and MCH services. Hepatitis B has recently been added to the programme and is government financed. As a result of a competitive tender and bid for vaccine, the international price was driven down substantially.

Uganda: Services and information about immunization have been extended out to the periphery and have led the development of other child health interventions. Given the limitations in infrastructure in the country, the establishment of the cold chain and vaccine supply system are noteworthy achievements. During the UCI initiative there were high levels of political commitment from the President and others, and this has made social mobilization of villages easier, since district political figures give immunization attention and support.

C. Immunization Coverage Trends

On a global level, coverage for DPT 3, OPV 3 and measles increased rapidly from 1985 to its highest point, in 1990. After 1990, there was a decrease of about 5 per cent overall until 1992. Immunization coverage appears to be on a slow but steady upward trend since then, although definitive analyses require more time. Global figures may be important for understanding the magnitude of the overall effort in immunization, but they obscure the different trends in coverage experienced by different countries. Reported coverage for Ghana, the Lao People's Democratic Republic, the Philippines and Uganda are shown in Table 7 and in Figures 5, 6, 7, and 8.

In the Philippines, the immunization programme was started earlier than in other countries. By 1986, coverage surpassed 50 per cent for all antigens, accelerated rapidly through 1987, and has since improved slowly to levels of about 90 per cent. In 1993, there appears to have been a slight decline, but given the small amount of change this could simply
be due to annual variation. The addition of 1994 data may clarify whether coverage has reached a plateau. From 1986 onwards, measles, DPT 3 and OPV 3 coverage have remained fairly close together, suggesting that nine-month-olds are brought back to complete the EPI series. In addition, the drop-out rate in the Philippines is low when compared with other countries, and in 1992-1993 it decreased.

In Ghana, coverage rose from very low levels to a peak for measles and BCG in 1989, followed by a peak for DPT and OPV 3 in 1990. The Ghana immunization programme was begun with a mass measles campaign in the early 1980s, after which all antigens were added. Coverage declined in 1991, when the government made a conscious decision to do away with mass campaigns. These declines may also reflect adjustments made to population denominators, which increased the target group of children by 25 per cent. Since that time, coverage has steadily moved towards 1990 levels.

In the Lao People's Democratic Republic, coverage increased from under 10 per cent in 1986 to between 20 and 30 per cent in 1989. From 1988 to 1990, OPV 3 increased steadily and more quickly than DPT 3 as a result of single antigen NIDs to eradicate poliomyelitis. From 1990 to 1993, coverage increased rapidly to levels between 40 and 50 per cent for measles and BCG. In 1993, DPT 3 was 25 per cent, a result of a more slow and incremental increase. After 1990, OPV 3 declined and then rose in step with DPT 3. This coincided with the switch from single antigen to multiple antigen programming. In the case of Laos, measles coverage far exceeds DPT 3 and OPV 3. This pattern is the same for most programmes in their early phases, when children may have their first immunization contact after nine months, and when there is likely to be a large backlog of unimmunized children.

In Uganda, coverage of all antigens rose rapidly after 1986, when civil order was restored and health system rebuilding began. Coverage for all antigens peaked in 1990 and has stabilized since. There appears to have been a small decline in 1992, but 1993 data returned to 1991 levels. Measles coverage also exceeded DPT 3 and OPV 3 coverage in the first four years of the programme. Since 1989, coverage for all three antigens has remained close. The most notable problem with coverage in Uganda has been the consistently high drop-out from BCG to measles. Access to newborns and young infants appears to be better than to older infants.
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Figure 9 and Table 8 show that coverage in Côte d'Ivoire has increased and decreased significantly on an annual basis. In part this may reflect variable data quality from year to year. Coverage for all antigens peaked in 1987, when immunizations were delivered by mass campaign in pursuit of UCI. Coverage declined from a high of near 60 per cent to a low of 25 percent for measles in 1988. After 1988, coverage increased to levels near 55 percent until 1990, when declines again set in. Current coverage rates remain below 60 per cent. As in Uganda, the dropout rate has continued to be high, comparing DPT 1 to measles.

Figure 5: Reported Vaccination Coverage in the Philippines, Children Under One Year

Figure 6: Reported Vaccination Coverage in Ghana, Children Under One Year


Figure 7: Reported Vaccination Coverage in the Lao People's Democratic Republic, Children Under One Year

Figure 8: Reported Vaccination Coverage in Uganda, Children Under One Year


Figure 9: Crude Vaccination Coverage by Year in Côte d'Ivoire, Children Under One Year, DPT1, OPV3, Measles

Table 8: Immunization Coverage (%) for Children Under One Year, Survey and Reported Data

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<tr>
<th>Country</th>
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<th>DPT3</th>
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**Source: KEPI Coverage Surveys, DHS 1993

Trends in coverage data in Kenya are difficult to interpret because it is necessary to use survey data. Differences of 10 per cent in any direction might simply be due to variation in measurement. In addition, surveys in different years defined coverage according to different age groups, age at immunization, and validity. The crude vaccination coverage of children under one year from 1990 to 1994 is illustrated in Figure 10. Kenya raised coverage to relatively high levels until 1990, followed by a continued increase at a much slower pace. While DPT 3 and OPV 3 now exceed 80 per cent targets, measles lags behind, close to 70 per cent. Drop-out rates are nearly constant in all years.

The coverage figures for India, as reported by the Ministry of Health and Family Welfare (MOHFW) and UNICEF, are shown in Table 9 and Figure 11. Coverage increased rapidly until 1990 and then stabilized.

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21 Crude vaccination coverage is defined to mean documented by card or verbal history. Valid vaccination coverage is defined to mean documented by card, age and dose interval-appropriate.
Figure 10: Crude Vaccination Coverage with the Six EPI Antigens by Year, Children Under One Year, Survey Data, Kenya

Source of Data: KEPI Coverage Survey Reports, KDHS.

Figure 11: Reported Vaccination Coverage by Year in India, Children Under One Year, BCG, DPT3, OPV3, Measles

In all of these countries, programme managers acknowledge large variations in coverage between regions and districts which are obscured by national data. Low coverage regions tend to be less accessible, with fewer means of transport and communication, fewer services and less security. They may also contain isolated or minority ethnic groups. For example, prior to 1990 in the Philippines, there were still pockets of low coverage -- 45 per cent of the provinces and 58 per cent of the cities reported fully immunized children below 80 per cent. The principal reasons for this were lack of midwives, difficult terrain and security problems. In Kenya, 17 districts 'on the lake or on the sea' have been designated, and seem to remain low coverage areas despite the continued extension of service delivery points into them. Fifty-three per cent of the population of the Lao People's Democratic Republic resides in Zone 3, which means they live more than one day's travel from the nearest government health facility. By implementation design, it is not possible to reach children in these areas more than three times per year.

Immunization coverage surveys have been carried out in most countries in order to evaluate routine information systems and programmes in general. In Kenya and Côte d'Ivoire they are the only reliable source of coverage information because of poorly developed routine reporting systems. In India, over 900 district level surveys have been conducted, providing audit information to compare with routine reports.

Standard thirty cluster coverage survey manuals and data analysis programmes developed by WHO and others are generally used, although Demographic and Health Surveys (DHS) report similar data based on different sampling methods. When national survey data are available and deemed appropriate, WHO and UNICEF officially report these
coverage figures for the year in which the survey is conducted. This is because coverage survey data are believed to reflect more accurately than routine reports the true situation. Surveys are usually conducted for children 12 to 23 months old. Coverage figures are based on which age and interval-appropriate immunizations these children received before the age of one.

Coverage survey data are compared with routine reported data for measles in four of the six country case-studies in Figure 12. In general, caution should be exercised in comparing data from different methods of collection, partly because of differences in definitions of valid coverage and reliance on cards and verbal histories. In Ghana in 1987, and in Kenya in 1990 and 1993, survey coverage was greater than reported coverage. In Kenya, only -55 per cent of districts actually reported data, and coverage surveys are used both to understand programme effectiveness and to reformulate service delivery strategies. In 1987 in Ghana, immunization services were delivered by mass campaign, and routine information systems were not in place. By 1990, as Ghana switched to fixed site service delivery, reported data exceeded survey data by about 20 per cent. In part, this may reflect the fact that as coverage increased rapidly, survey data lagged 12 to 23 months behind programme changes.

In Uganda, one national level coverage survey was carried out in 1991. Reported coverage data exceeded survey data by one third to one half for every antigen. In the Philippines, the 1993 DHS found the percentage of fully immunized children at 12 months was 62 per cent, with 72 per cent immunized against measles. This compares to a reported figure of 88 per cent for measles, which exceeds survey coverage by more than 20 per cent.

In India, coverage survey data differ from reported data. In 1989, more than 50 per cent of the antigen coverage figures were found in the surveys to be more than 25 per cent lower than the values reported in the routine government figures. The distribution of discrepancies is noted in Table 10.
Figure 12: Comparison of Reported and Surveyed Measles Vaccination Coverage of Children < 1 Year in Ghana, Kenya, Uganda and the Philippines

Country and Year

Source of Data: KEPI, UNEPI, DHS, WHO Reports.

Table 10: Summary of Discrepancies Between Survey and Routine Reports of Immunization Coverage in India

<table>
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<tr>
<th>Difference in Reported Coverage</th>
<th>Number of Surveys in which Vaccination Coverage was within Stated Differential</th>
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<td>BCG</td>
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<tr>
<td>&lt; + 10%</td>
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<td>+ 11-25%</td>
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<td>+ 26-50%</td>
<td>16</td>
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<tr>
<td>&gt; + 50%</td>
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Source: UNICEF/New Delhi, History of EPI in India, 1990.
According to UNICEF, the situation improved in the late 1980s, and the discrepancy between the routine report estimates and survey figures has been substantially reduced. However, in a study published in 1991, survey data from the four most populated northern states were compared with routine figures reported by the respective state governments. Taking measles as the surrogate for full coverage, the survey rates were disturbingly low: 28 per cent for Bihar, 52 per cent for Madhya Pradesh, 36 per cent for Rajasthan, and 43 per cent for Uttar Pradesh. Studies continue to report discrepancies.

D. Measuring Sustainability

There are enough questions about the accuracy of coverage data that establishing an absolute cut-off point of 80 or 75 per cent maybe a misleading measure of UCI. Looking at trends in coverage is also problematic. The limited number of data points are difficult to interpret given the annual variation. Interview data also indicated that the coverage figures reported to WHO and UNICEF were higher than actual coverage. But there is no reason to expect the level of over reporting to be different over time, with the exception of data collected for 1990, when global pressure for achieving UCI was qualitatively different than in other years. Given this assumption, developing countries can be classified according to the UCI target and their performances since then. Table 1 classifies developing countries for which 1993 data were available from the WHO/BPI Information System according to the UCI target and performance since that year.\(^{22}\)

In this analysis, we have used an estimate to determine whether a change in coverage levels is due to chance, and have set plus or minus 10 per cent as a measure of change in measles coverage levels.\(^{23}\) The selection of 10 per cent could be debated. More precise measures of error could be calculated for reported data based on the number of survivors under one and the number of immunizations given in anyone year. However, many of the source figures are estimates, and performing such tests might inappropriately lend false precision to the final numbers. Thus, this is only a crude and rough analysis of figures on a global level, which suggests that caution should be used in interpreting short-term changes.

The large majority of countries (70 per cent) that achieved UCI have maintained coverage. Fewer have shown improvement, but partly this reflects the loss of sensitivity in measurement by surveys as coverage exceeds 90 per cent, and the definitions of change in coverage selected for this review. A substantial percentage of countries (38 per cent) that did

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\(^{22}\) Assignment by UCI achievement was based on whether countries had reached 80 per cent BCG, OPV3 and measles coverage for children under one year in 1990. African countries were considered to have achieved UCI if they reached 75 per cent BCG, OPV3 and measles coverage for children under one year in 1990. Coverage figures may represent either reported or survey data.

\(^{23}\) Twenty per cent might also have been selected on the precision attributable to coverage survey methods. The effects would have been to decrease the number of countries showing improvements or declines in coverage.
not achieve UCI have experienced improvements. Among those countries that achieved
UCI and are now showing coverage declines, there may be some confounding by the
comparison of survey and routine data. However, the majority of these countries are in
Africa and the declines in them appear to be significant. The countries which did not
achieve UCI and are now experiencing declines may be the greatest cause for concern
because the solutions to the problem of establishing successful immunization programmes in
them have not yet been found. Some of establishing successful immunization programmes
in them have not yet been found. Some of these countries have never had particularly strong
systems, such as Chad and Senegal. Others, such as Ethiopia, Kuwait and Yemen, have
experienced political unrest or economic distribution.

One of the difficulties with using this analysis to study factors related to sustainability
is that the quality of the data used to classify countries is fraught with problems. These
problems involve the accuracy, reliability and application of data at global, national and
subnational levels of the system.24

If we return to the differences in survey and reported data, why are they so different?
Cluster survey methodology has important limitations that are often overlooked in
interpreting data. At the 50 percent coverage level, the precision of the coverage estimate is
plus or minus 10 percent, with 95 percent confidence. This means that relatively large
differences in figures are needed to show significant change. As coverage rises above 80
percent, the survey becomes less useful as an instrument for measuring progress. For
example, if a survey determined that coverage was 80 percent at one point, a follow-up
survey would have to show 90.6 percent coverage to claim improvement. At 90 percent
coverage, the follow-up would have to show 97.3 percent coverage.25

Cluster surveys retain a priority place in coverage analysis. However, the quality of
survey data is also problematic. Surveys are not always implemented properly with good
population information, random selection of starting houses in clusters, standardized
questioning and effective supervision. Analysis of survey data may vary significantly among
surveys that are nonetheless compared, due to confusions between valid and crude coverage,
age at immunization and proper intervals between doses.

Despite these problems, programme evaluations are littered with veiled references to
scrutinizing and improving data accuracy based on comparison of survey and routine reports.
Donors and technical assistants rely heavily on coverage surveys to 'evaluate' programmes
and document 'impact', and global reports automatically prefer them. Software packages to

24 Burkhalter, Miller, Silva and Burleigh. Variations in Estimates of Guatemalan Infant
Mortality, Vaccination Coverage, and ORS Use Reported by Different Sources. Bulletin at PAHO

analyse coverage survey data predated standardized automation of routine reporting systems. Several common reasons are postulated for problems with routinely reported data.

- **Inaccurate denominators:** Most immunization programmes determine target populations centrally by projection from a national census. In places where the census is old or inaccurate or where fertility and mortality rates are changing rapidly, the number of infants may be seriously over- or understated. Catchment areas for workers or facilities may also be poorly defined and overlapping. Finally, migration can drastically change the population served, especially in urban areas. There are very few reports of country programmes which enumerate infants to accurately determine target populations.

- **Counting for the numerator:** In many of the countries, immunizations are given to children above the age of one by policy or despite restrictive policies. Routine data systems normally distinguish age cut-offs, and immunizations given to children under one are counted in calculation of crude coverage. However, there are many opportunities to miscategorize immunizations by age. The mother may not know the birth date, the vaccinator may guess incorrectly, or the supervisor may add all counts together. Reported data may also include children in the numerator whether they have or do not have vaccination cards and whether they received vaccinations at appropriate ages and intervals or not. If children over one enter into the numerator, reported coverage will rise. In the first year of any programme, coverage will automatically be higher since nearly two annual cohorts of children will actually be available for counting in the numerator.

- **Falsification, misinterpretation, misapplication:** Interviews in nearly every country raised the problem of data inflation. This was most often discussed in the context of the pursuit of goals and targets. In most health systems, performance is judged on the basis of which targets have been reached and which objectives have been fulfilled. When there is the added push of political interest and perceived donor conditionality, a situation is created in which data is manipulated to protect the workers in the system. While this is often identified as a problem at the national and district levels, interviews also suggested that this was a problem at the global level.

- **Lack of agreement or understanding about why the data are being collected:** when used appropriately, data should inform programmatic decisions and management at every level of the health system. However, in many cases data are collected primarily for donors. In very few countries were data fed back on a regular basis to district and health centre levels. In special areas where NGOs or health projects are interested, there appears to be more use of data for local management. In most places, district and health centre staff collect and report data to fulfill a requirement. This results in low data quality and value. This is usually perceived to be a result of lack of
orientation, training and supportive supervision.

From an implementation perspective, the crucial issue is whether reported data really overstate coverage levels, and if so at what order of magnitude. Should reported data be compared to surveys conducted to reflect the same time period? Should the entire trend line for most countries be shifted downward? This problem is important because immunization strategies that need to be employed to raise coverage may be different at different orders of magnitude of coverage. For example, addressing inequities in coverage in districts may be appropriate at higher levels of coverage, while addressing high drop-out rates nationally may be appropriate at medium levels of coverage. As coverage levels surpass 80 per cent and become more difficult to raise, it becomes even more important to have accurate and detailed information, and to shift into surveillance for disease control.

The importance of disease surveillance was stated forcefully by informants, especially by those with experience in smallpox or poliomyelitis eradication in the Americas. National level interviews in the case-studies showed that health managers understand that cases and deaths due to disease will be better overall measures of whether immunization programmes are working. A surveillance system that works well will allow programmes to assess the quality of services and gaps in population coverage. It will also provide the information necessary for targeting services and alternative service delivery strategies.

While many are well aware of the importance of disease surveillance systems, several reiterated the need for good process information (such as coverage) to manage programmes on a daily and monthly basis. In Lao People's Democratic Republic, the Philippines and Uganda, consultants were asked to propose process indicators that would help to monitor progress, especially in relation to sustainability. At the national level there was a clearly expressed need for combining process, outcome and impact measures to better understand how to improve programmes. Informants felt that the global level values outcome and impact information more highly than process information.
E. Results

The findings from global level interviews and national case-studies are described according to systems and components of immunizing children in developing countries. The issues described were emphasized by informants in relation to sustainability at all levels of the system: global, national, and community. Those that were reported to be most important to immunization from the perspective of sustainability are summarized below.

**Technology and Development**

At a global level there are issues relating to the current state of technology for immunization, ensuring vaccine supply, and research and development of improved or new vaccines. Just as international organizations and nations are planning and budgeting for programmes that bring together children and vaccines, so there is a need for planning and budgeting at a global level to bring new vaccines together with programmes.

- **Investment in vaccines:**

  The adequate supply (quantity and quality) of vaccines for the present and the future is critical to all programmes. Ensuring supply within countries is a function of national systems, which include forecasting of needs, resource allocation for purchase or production, and supply and distribution systems. At the same time, the development of new vaccines, such as a more heat stable poliomyelitis vaccine, is ongoing. This development requires long-term investment on the part of private companies and governments. These investments are a function of markets and public-private sector interactions which are complex and outside the sphere of influence of many programmes. The actions of those connected with immunization programmes in the developing world (UNICEF procurement, tiered pricing) must be seen in that context.

  *We are not very far from...where we will have very important vaccines which are of value or utility only in Third World countries. None of the industrialized countries are going to want to purchase enough of that product to help any private sector producer.*

- **Limitations of technology:**

- The vaccines used as the basic six antigens currently have characteristics that affect how they are manufactured, delivered and targeted to various age groups. These characteristics include the complexity of their manufacture, the need for cold chain and how they act within the body to provide immunity. The efficacy and
effectiveness of vaccines vary, and place boundaries on programmes. Until technological advances are made, the options for service delivery are similarly limited.

... the refrigerators weren't keeping things cold. And it was a marvelous set of cables ... one from Mali came in that said, "The trucks don't keep vaccine cool" and so the cable came back .... "Park in the shade." A cable came back from Mali "Send trees."

Within the context of current vaccines, technological changes for improved management, such as vaccine vial monitors that illustrate temperature exposure, can also influence sustainability positively.

› Technology transfer:

There are international agreements for technology transfer to developing countries. In the context of exploring and investing in the development of vaccine production capacity, decisions will be based not simply on cost and efficiency, but also on the principle of transferring capacity to less developed countries. Transferring technology may be more expensive but may also have spin-off effects for systems strengthening and sense of ownership and commitment.

Donor

International organizations such as UNICEF, WHO and various bilateral donors strongly influence the evolution of immunization programmes in developing countries. Influences are determined by internal characteristics of each organization and the ways in which they interact with each other. While all these factors operate, the least developed countries have little control or input in modifying them. Since this review focused on UNICEF and its actions in immunization, there is more information about it than about other organizations. Thus it may appear that issues surrounding UNICEF were more influential than they may have been in a specific national context.

1. Internal Issues

› Internal Structures:

All organizations are structured and work in defined ways. UNICEF is a decentralized organization, with autonomy and authority vested in country representatives and offices. This has meant that application of UNICEF policy in countries has been flexible, although plans of operation must be approved by headquarters. It has also meant that UNICEF programmes depended heavily on the strengths and skills of individual staff, and strong
personalities sometimes had disproportionate influence. Decentralization has also been positive, as it has allowed more rapid and flexible disbursement of funds to projects.

At the central level (including representatives), UNICEF has a horizontal management structure with, in theory, 150 individuals reporting directly to the Executive Director. The efficiency and effectiveness of this design have been the subject of recent management reviews, and influence the way decisions are made. Informants from other donor agencies report that this structure makes it difficult to know who to contact to discuss particular issues, even through informal coordination mechanisms.

UNICEF is structured to work with governments as partners. This is reflected in the development of plans of operations which may include NGOs but are always central-government based. Governments sometimes perceive UNICEF funds as belonging to them, and UNICEF's work in the private sector may be circumscribed.

UNICEF staff were described as generalists in development. During the UCI initiative, UNICEF recruited and placed officers for the specific purposes of EPI. These individuals were considered crucial to acceleration activities because they could apply undivided attention to one programme. Many had technical backgrounds in health. However, informants stated that UNICEF staff with strong technical backgrounds were limited, and this has contributed to poor direction and decision-making for immunization programmes in some countries. This was also identified as a problem for UNICEF headquarters, where there are reported to be several very respected technical staff who are spread too thin to provide the support needed. Poor or insufficient technical support was felt to contribute to inefficiency.

WHO is structured very differently than UNICEF. It is a specialized, technical agency with many technical divisions. These divisions do not always integrate or cooperate closely, and often pursue goals and targets as if the others did not exist. WHO operates slowly, through a highly developed bureaucracy, and there are strongly held personal allegiances and connections which influence decisions. Regional offices are very strong and exercise considerable autonomy with regard to Geneva-initiated policies. WHO has limited resources for programme implementation, and these are concentrated in technical areas such as training, information systems, evaluation, cold chain and disease surveillance. WHO provides an essential technical complement to UNICEF and to bilateral donor-funded projects in countries. The strongest region in WHO is PAHO, which unlike the other regions has had considerable resources to implement programmes.

We are extremely bad at integration. We run into a problem, which you don't have in UNICEF, I think, that if you're a specialized technical agency, in order to maintain that speciality you have to have specialized units. And the danger, the big danger, is that that level at Geneva will be reflected at the regions and will transmit to the countries as well.
Bilateral donors also have particular structures, rules and regulations. For example, USAID provides policies and strategic guidelines centrally and maintains country missions to develop and implement projects. CIDA often works through other organizations, especially NGOs such as the CPHA, or provides funds through UNICEF. JICA has yet a different structure, which is highly centralized and geared to specific priorities determined in Japan. The effects of the structures of bilateral donors on immunization programmes is seen most clearly at the national level, where one or several will be the major actors in the health sector.

NGOs vary, from those affiliated with religious organizations to development organizations to business groups. It is difficult to generalize about their structures because of great variation. In general they are considered less hierarchical and less rigid, and reach communities more directly.

I think it’s hard for countries that are dependent on foreign aid to actually learn about each donor and its peculiarities, so it’s disruptive when you have a change in a major donor for a programme.

Leadership:

The nature of leadership in UNICEF and WHO has a profound influence on the internal operations of both organizations and their approach to countries. The intensity with which mandates are pursued depends on leadership. The late Mr. James Grant was frequently referred to as visionary, exercising strong political influence with national leaders and holding countries up to global standards to benefit children. This vision was strongly communicated to professional staff in the UNICEF system. Informants perceived that representatives to countries were selected and promoted based on achieving targets, especially through social mobilization and political commitment.

A new rep comes in and is given his marching orders. “This is what you have to do, and if you can’t do it…”

There are very difficult times at WHO now, especially in terms of their leadership.

You know it’s promoting the notion of mediocrity. ...Bureaucrats in D. C. and other governments don’t want to take strong stands...neither do ambassadors, but when they do, there is a big difference.

Mandates:

All international organizations have mandates that determine the scope and content of their work. UNICEF’s mandate is promoting the health and well-being of children. WHO’s mandate is providing technical guidance and standards for health, training and disease control. As multilateral agencies, their mandates are broad and are determined by boards or assemblies of many nations.
Bilateral agencies serve the interests of national governments, and their mandates may change more rapidly over time. The mandate of SIDA is to support development of systems for comprehensive PHC. The mandate of USAID is to provide assistance that is aimed towards sustainable development, with specific emphases on population, child survival and maternal health. Levels of support for these activities are determined through the political process, in which leadership and values may change with new elections. Mandates form the boundaries within which donor agencies work, and they are used to justify the focus and emphasis in what will be supported in countries. They may also partially determine how donors work with national governments.

Well, you know, sustainability is not really one of the issues that we’re particularly interested in. What we’re interested in is providing the appropriate technical support to these programmes; and from our technical contribution it will be sustained.

I see the NGO community…[as] an organization of people whose principal role is to be adversarial it is to be controversial, it is to present a different reality.

What Grant has said is that we’re decentralized in implementation, but we’re very centralized in terms our mandate, our policy. We’re out there to make a maximal reduction in child mortality and to make a maximum improvement in child nutrition, in basic education.

Advocacy:

All donor agencies see themselves as advocates for people, programmes and policies. In Africa, the World Bank and the International Monetary Fund (IMF) have advocated successfully for economic reforms such as structural adjustment and public investment planning. Disease control priorities and the World Development Report 1993 are now being used as tools to re-frame national PHC policy. UNICEF sees itself as the advocate for children. This is most clearly expressed in the declarations of the World Summit for Children and the Convention on the Rights of the Child.

Our advocacy is much strengthened now by the existence of the Convention on the Rights of the Child: we now believe that we have law on our side. It’s not only you ought to do this; you’ve got to do it. You signed. ...So there’s a new self-righteousness in our approach.

Prior to 1990 and since, UNICEF has pushed very strongly for national governments to expand rapidly and intensively to implement immunization programmes. This is done to save children’s lives and decrease suffering. At times this advocacy introduces conflicts. Does UNICEF use its advocacy to force or supercede local decision-making on programme priorities or strategies, thereby undermining development of ownership and commitment? In one country, a current campaign strategy was developed and authorized outside of participation by key players in the MOH, who were then obliged to support it anyway.
I am one of those who found myself where I didn't want to be. One hundred percent of kids to be immunized ... are we doing the right thing? I wasn't consulted ... I had to be a part of it even though I didn't think it was the right way ... It's the same thing as any campaign. It can make you lose sight of something else.

Another conflict involves the trade-offs that UNICEF may make in advocating for today's children with less emphasis on children of the future. In 1990, immunization programmes were intensified to expand coverage in the very poorest countries in such a way that systems were not established. At best this was a missed opportunity to build something that would continue to serve new cohorts, and at worst it achieved coverage for one or two at the expense of later cohorts. In Kenya, strategies employed in 1994 have set up expectations for the continuation of additional resources for workers in low-performing districts, and disincentives for workers who had performed well in other districts.

A second aspect of this conflict is how decisions to circumvent government systems or UNICEF guidelines encourage unsustainable short-term solutions to problems. In the Lao People's Democratic Republic, an executive decision to support operational costs was made, and coverage increased almost immediately. What is being done to ensure operational costs after a few years? In Kenya, UNICEF became a strong advocate for EPI programme funding as the lead donor was engaged in negotiations to ensure follow-through on government funding commitments. Does this undermine long-term government support for immunization year after year, or is it sufficient that this year's children get their immunizations? Where is the balance?

And it's difficult to attach conditionalities when children are dying. And if there's a measles outbreak somewhere, we have to respond. And even though we are cognizant of everything else that the donors are talking about we cannot just sit back and say, "Let them go unimmunized."

Constituencies and Accountability:

One significant difference between bilateral and multilateral organizations is their responsibilities to their constituencies. Bilateral organizations are accountable to legislators and to taxpayers, who query inputs and results. Multilateral organization constituencies are more general and because of that these organizations may have more flexibility in approach and procedures. This means the way country programmes are developed will reflect whether they have predominantly more of one kind of aid than another or whether they have coordination of donors.
The bilaterals are tougher, the multilaterals softer. UNICEF is preoccupied with meeting coverage targets. We are much more accountable to the home front. Regardless of what [...] said, when push comes to shove UNICEF is not beholden to anyone.

They [donors] ask what about transparency and being accountable yourself and monitoring yourself ... but what about this process in the donors? I mean, have they responded to any of the problems that have been documented and even admitted over and over again in the last decade or two decades?

› **Fund-raising:**

International organizations must raise funding to support national programmes. Initiatives such as UCI, the World Summit for Children and poliomyelitis eradication have been effective at directing resources into immunization. It then becomes very important for UNICEF or Rotary or WHO to ensure that results are achieved and visible to those who provide the resources. This sets the stage for continued funding for these organizations.

The competition for funding and documenting success influences how programmes are set up, the relative emphasis on long- and short-term goals, and strategies for continuation. There were some reports that Rotary funding of poliomyelitis vaccine will be tied to conditions for single antigen NIDs, since poliomyelitis eradication is their goal. This will not influence the sustainability of poliomyelitis eradication, which has a defined end-point, but how will it affect the sustainability of immunization overall?

2. **Interactions of International Organizations**

› **How They Relate to Each Other:**

WHO and UNICEF coordinate immunization activities through formal and informal mechanisms. These mechanisms are reported to be close, collegial and effective, although there have been differences of opinion over time. What may be less clear is how secure this relationship is and whether it will outlast individual staff.

The working relationship [between WHO and UNICEF] in the immunization area has been exemplary ... they were willing to accede to joint ownership.

But [...] made a comment that immunization is WHO’s greatest failure because of the role UNICEF played in it, that they lost control of it, that it was taken from them.

However, cooperation at the global level masks real differences, as is evident from interviews of representatives at the country level. WHO personnel are very concerned with the level of development of disease surveillance systems and efforts to eradicate poliomyelitis, especially in Africa. WHO perceives UNICEF as being more concerned with coverage. This
is almost a complete reversal of approaches taken by the organizations for UCI in 1990. At that time, UNICEF actively encouraged campaigns to raise coverage while WHO pushed to build systems for routine services.

But the problem with WHO was always that they didn't have the resources to do that. ... You see the technical input was there but the resources were not, and in those days UNICEF was not willing just to pay for the music which somebody else ordered.

Finally, who gets the credit for the remarkable achievements of immunization programmes over the last decade? The politics of recognition for these achievements feed into decisions to support country programmes and particular strategies.

It was unbelievable that even the church groups were competing with each other on a local level for who gets credit for this or that.

3. Political Realities

- Relative Importance of Countries:

Depending on the donor, the programme and issues which may have no relevance to children or immunization, nations may be relatively less or more important to donors. Countries differ by population, contribution to the world economy, form of government, political visibility, ethnic and language groups, historical ties and regional leadership. These differences are used to justify external assistance, whether it be material or otherwise. Given that resources are limited, priorities are set and both important and 'unimportant' country programmes are influenced. Applying the concept of equity at the global level is problematic.

Pakistan was being urged to go into a mass programme. ..it did not have vaccines and it particularly did not have poliomyelitis vaccine. And Pakistan is a big country. And suddenly UNICEF supplies for other countries were diverted to Pakistan. ..and I think there was a three-to-six-month period, in Africa in particular, where countries did not get UNICEF supplies of poliomyelitis vaccine because of the Pakistan effort.

4. Interactions of Regions with National and Global Levels

- Strength of Regions:

A strong region provides a voice and forum for attracting assistance and providing support. Regional organizations can be political (Organization of African Unity (OAU), South Asian Association for Regional Cooperation (SAA.RC), Organization of American States (OAS), etc.) in which case they may be a locus of political will for services for children. They also include regional offices within donor organizations, such as the Pan American Health
Organization (PAHO) and the African Region (AFRO) in WHO and the Eastern and Southern Africa Regional Office (ESARO) or the Regional Office for Latin America and the Caribbean (TACRO) in UNICEF. Regional offices may coordinate activities and translate policy and practice for other levels, or they may provide technical or public relations support. Within WHO, they play an important role in the aggregation and interpretation of coverage data, and in the subsequent planning and funding of country programmes.

The WHO regional offices are little kingdoms of their own.

In Latin America, PAHO is more of an implementor than in other regions.

So the first and biggest SAARC meeting was on children...and with that Jim Grant took the SAARC thing and he said, "Look, SAARC is doing this.” So he went to the OAU and said, "Why don't you put children on your agenda?"

Level of Coordination and Representation:

The coordinating role played by regional offices within donor organizations and the perception of how representative they are of regional interests have played an important role. The clearest example of this is PAHO and poliomyelitis eradication efforts. PAHO, as a regional office for WHO, coordinates nations in a participatory process of multi-donor, multi-year planning for programmes, procuring vaccines and disease surveillance. Regional coordinating committees exist. The active participation and facilitation of PAHO has created a supranational effort. It might be argued that many functions necessary to programmes are more efficiently and effectively carried out at regional level. For example, there has been considerable success with the revolving fund for procurement of vaccines as well as the coordination of surveillance and outbreak control, which supercedes national boundaries.

Because we created in PAHO a revolving fund for the procurement of vaccines.
..they have to present to PAHO every September their needs for the following year, and that allowed us to open a dialogue with the country.

External Donor Assistance

Issues surrounding external donor assistance were the starling point for many informants. These included financing, technical inputs and donor coordination. 'Listening' was also discussed by several informants as an input that is often not considered but which may be the basis for working towards sustainability.

Donors have to be flexible about their policies and especially to listen to the countries don't tend to listen to the countries.
1. Financing

Obtaining financial information from host government or donor sources on immunization programmes was extremely difficult. In general, information prior to 1990 was not available. Staff turnover, even among accountants, has been high for both donors and governments. There were also difficulties with definitions of types of costs, disentangling costs of integrated programmes, and conflicting fiscal years. Interviews indicated that some costs will never be fully understood. Financial data were collected for the country case-studies through the national level questionnaires which were usually compiled and sent after the field studies were conducted. It was not possible to review and standardize all of the data into dollar figures and budget percentages. Financial information at the donor level was obtained through documents and was incomplete and conflicting. Though many financing studies have been carried out previously, many questions were posed by informants about underlying assumptions and rapid changes over time. This area deserves further study, as this review does not provide sufficient information.

However, there were several important issues related to financing that were raised in interviews. They include the absolute level of funding that countries require to carry out immunization programmes, the source of funds (past and present), and their influence on national ownership of activities. Much attention has been paid to vaccine procurement in the past year, and there are issues concerning the type of programme costs that can be funded by external sources. Finally, the role of communities and the potential for cost sharing or cost recovery are major themes in the health systems observed.

- Level of Funding:

In most developing countries, the level of funding for immunization from all sources increased rapidly from 1985 until the end of 1990. In many, the highest levels of funding within the last decade were tied to UCI in 1990. The resources expended by UNICEF for UCI during this time period are illustrated below in Table 11.

The six country case-studies provide specific examples of what has happened to funds since 1990. The external funding levels in the Lao People's Democratic Republic have increased more rapidly since 1990, as they have in the Philippines. Since 1991, external funds available to immunization appear to have decreased in Côte d'Ivoire, Ghana, Kenya and Uganda. While government funding has increased, it has not kept pace with external decreases. This may be somewhat misleading given the shifting of funds to integrated, decentralized, programming that may also benefit immunization.
Table 11: Expenditures of General Resources and Supplementary Funds for UCI, 1986-1990, by UNICEF

(in millions of U.S. dollars)

<table>
<thead>
<tr>
<th>Type of Funds</th>
<th>1986</th>
<th>1987</th>
<th>1988</th>
<th>1989</th>
<th>1990</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Resources</td>
<td>57.0</td>
<td>40.4</td>
<td>28.2</td>
<td>44.2</td>
<td>62.0</td>
<td>231.8</td>
</tr>
<tr>
<td>Supplementary Funds</td>
<td>45.5</td>
<td>56.0</td>
<td>69.7</td>
<td>73.0</td>
<td>244.2</td>
<td></td>
</tr>
<tr>
<td>Total for UCI</td>
<td>57.0</td>
<td>85.9</td>
<td>84.2</td>
<td>113.9</td>
<td>135.0</td>
<td>476.0</td>
</tr>
</tbody>
</table>


Among the poorest countries, funds are now reported to be insufficient to maintain programmes with adequate vaccine supply, cold chain, supervision and transportation. Training, outreach, supervision and maintenance and repair of equipment are the first programme components that have been curtailed. Most of those interviewed felt there would not be enough saved from improvements in efficiency to make up for the declines. Further declines are projected.

As funds available to immunization programmes decrease in countries, there is an attempt to shift costs to governments and to communities. There is some recognition that some governments can afford to support programmes, while others cannot for the foreseeable future. However, there is little hard data on what levels of costs are reasonable to obtain, and in what time-frame. In addition, encouraging governments to bear these costs will require considerable change in perceptions of donors and responsibility. Based on the experience of UCI, governments know that donors are willing to put large amounts of resources into programmes that make up the most important global targets.

Why has the level of funding provided to developing countries declined in general? Informants cited donor fatigue and the growing scope of development problems served by the same sources of fund. While funds can be attracted to new causes (poliomyelitis eradication), the sense of those interviewed was that less rather than more funds were likely to be forthcoming in the near future. The possibility of encouraging new donors to join the team was recommended.

---

26 Day, Laurence. Toward Ensuring the Financial Sustainability of EPI. REACH Project, October 1990
Interest of European donors in supporting EPI, the WHO is declining since UCI...because of staleness.

Get new donors in at the table-Korea, Taiwan, other growing economies.

Source of funds and ownership:

Since immunization programmes were accelerated, most country governments have provided personnel and facilities, and therefore many of the costs associated with salaries and buildings. In some cases, donors supported additional personnel within the government system, especially for campaigns. The relative size of this extra workforce was small in countries such as India, but significant in places like Nepal, where most trained, technical staff were classified as 'development' budget workers. Prior to 1991-1992, most of the costs in low income country programmes were funded by external donors. UNICEF was one of the leading donor agencies providing both a significant portion of country office general resources and serving as a conduit for bilateral aid (Table 12).

Table 13 provides a partial list of donors to immunization. The range of non-governmental donors is far greater than what is illustrated in this table, and the true value of their contribution has never really been calculated.

Since 1990, it is clear that external donor funding for immunization in the six country case-studies decreased even as costs increased, in all countries except the Lao People's Democratic Republic and the Philippines. The Lao People's Democratic Republic's case represents a funding situation reminiscent of the 1990s. Until very recently they have been completely dependent on donor funding for everything from vaccines to syringes and needles, training of the health staff, transport/vehicles and operating costs. In Uganda which was highly dependent on a single donor (UNICEF), knowledge of decreasing donor funding is widespread, as some highly visible activities such as outreaches are not occurring because recurrent cost support for per diems and transport are gone. The situation in Kenya reached crisis proportions in 1994, including national stockouts of vaccine, as the primary donor (DANIDA) and the GOK negotiated conditionalities for continued funding. The crisis was averted with a one-time allocation by the World Bank, but as of the beginning of 1995 negotiations were ongoing.

The results of declining donor funding and variable increases in government and/or community contributions raise the possibility that the availability and accessibility of services are declining. If so, coverage of infants is likely to decrease. Furthermore, it suggests that coverage will continue to decrease until reliable financing mechanisms are identified and implemented. Reversing the trend may involve a time lag, since health worker morale and community expectations will have to be addressed. Are some of the annual fluctuations in coverage that are evident in those countries that 'stayed the same' over a three period
reflective of disruption in annual funding? Increase in coverage over time may require rapid and effective compensation for fluctuation in external donor funding. One valuable role played by NGO’s in this context is that they are often able to make funds available more quickly and flexibly than either bilateral or multilateral donors.

Table 12: Supplementary Funds Contributed to UNICEF for UCI, by Donor, 1986-1990, Income Year in Millions of U.S. Dollars

<table>
<thead>
<tr>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>-</td>
<td>0.3</td>
<td>0.5</td>
<td>1.2</td>
<td>0.6</td>
<td>2.6</td>
</tr>
<tr>
<td>Canada</td>
<td>2.0</td>
<td>10.5</td>
<td>10.1</td>
<td>5.6</td>
<td>6.8</td>
<td>35.0</td>
</tr>
<tr>
<td>Italy</td>
<td>13.0</td>
<td>19.2</td>
<td>19.7</td>
<td>16.3</td>
<td>0.6</td>
<td>68.8</td>
</tr>
<tr>
<td>Netherlands</td>
<td>0.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>6.5</td>
<td>6.7</td>
</tr>
<tr>
<td>Nigeria</td>
<td>-</td>
<td>-</td>
<td>3.7</td>
<td>2.3</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>0.5</td>
<td>5.0</td>
<td>3.7</td>
<td>4.3</td>
<td>13.8</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>0.6</td>
<td>21.9</td>
<td>16.3</td>
<td>18.7</td>
<td>18.1</td>
<td>75.6</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>0.4</td>
<td>7.6</td>
<td>1.9</td>
<td>-</td>
<td>-</td>
<td>10.1</td>
</tr>
<tr>
<td>United States</td>
<td>2.0</td>
<td>4.1</td>
<td>23.5</td>
<td>6.0</td>
<td>5.3</td>
<td>60.9</td>
</tr>
<tr>
<td>EEC</td>
<td>-</td>
<td>4.0</td>
<td></td>
<td></td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Canada National Committee</td>
<td>-</td>
<td>2.0</td>
<td>6.0</td>
<td>3.1</td>
<td>1.0</td>
<td>12.1</td>
</tr>
<tr>
<td>Canada NGO</td>
<td>-</td>
<td>1.6</td>
<td>5.3</td>
<td>2.0</td>
<td>0.5</td>
<td>9.4</td>
</tr>
<tr>
<td>Rotary International</td>
<td>0.6</td>
<td>0.2</td>
<td>7.9</td>
<td>18.9</td>
<td>17.0</td>
<td>41.6</td>
</tr>
<tr>
<td>Other</td>
<td>6.3</td>
<td>5.8</td>
<td>3.5</td>
<td>3.5</td>
<td>2.4</td>
<td>21.5</td>
</tr>
<tr>
<td>Total for UCI</td>
<td>28.9</td>
<td>77.4</td>
<td>99.7</td>
<td>80.1</td>
<td>65.6</td>
<td>348.7</td>
</tr>
<tr>
<td>Italy for Procurement</td>
<td>30.7</td>
<td>25.5</td>
<td>21.0</td>
<td>18.3</td>
<td>0.3</td>
<td>86.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Multilateral Donors</th>
<th>Bilateral Donors</th>
<th>Non-governmental Donors</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Union</td>
<td>AIDAB</td>
<td>AGFUND</td>
</tr>
<tr>
<td>IADB</td>
<td>Belgium</td>
<td>CPHA</td>
</tr>
<tr>
<td>UNDP</td>
<td>CIDA</td>
<td>BandAid/ LiveAid/ SportsAid</td>
</tr>
<tr>
<td>UNDRO</td>
<td>Chile china</td>
<td>OPEC Fund</td>
</tr>
<tr>
<td>UNICEF</td>
<td>DANIDA Finland</td>
<td>Rockefeller Foundation</td>
</tr>
<tr>
<td>WHO</td>
<td>Government of France</td>
<td>Rotary International</td>
</tr>
<tr>
<td>World Bank</td>
<td>Germany (GTZ)</td>
<td>Save the Children (UK)</td>
</tr>
<tr>
<td></td>
<td>Government of Italy</td>
<td>Soroptimist International</td>
</tr>
<tr>
<td></td>
<td>JICA</td>
<td>UN Women's Guild</td>
</tr>
<tr>
<td></td>
<td>Kuwait</td>
<td>Tetsuko Kuroyanagi</td>
</tr>
<tr>
<td></td>
<td>Netherlands Government</td>
<td>Van Leer Foundation</td>
</tr>
<tr>
<td></td>
<td>NORAD</td>
<td>World Vision</td>
</tr>
<tr>
<td></td>
<td>ODA</td>
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<tr>
<td></td>
<td>Saudi Arabia</td>
<td></td>
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<tr>
<td></td>
<td>SIDA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td></td>
<td>USAID</td>
<td></td>
</tr>
</tbody>
</table>

The source of funds strongly influences the development of ownership and commitment to immunization programmes. In some countries, immunization is referred to as UNICEF’s programme, especially when it provides nearly all of the funds, as in the Lao People's Democratic Republic and Uganda 'whoever pays the piper calls the tune.' In Ghana, the relationship between donor-driven priorities and funding has been conflictual.

*Because the MOH depended on UNICEF almost entirely, UNICEF had a big role in promoting immunization. Teams were formed from regions and districts and they were going around for mass campaigns that took all the time. Everybody really had the feeling that they were forced to do EPI.*

In Côte d'Ivoire, the sense of ownership is perhaps more complex given the split in responsibilities among government agencies, and despite the fact that agencies purchase vaccines they depend on allocations from donors for operating expenses.

*Our wish is to train everyone, but we don’t have the funds, and our donors tell us that in that area of the city we only take two people. They should make the effort to respond to our coverage need.*

This situation is similar to that in Kenya where responsibility for funding is perceived as belonging to donors, and where government funding commitments have not been met until just this year.
Some donors are also very eager ...they earmark funds for immunization ...then the government officials. ...will say, "Oh, that money is coming from the donors. Why should we bother about immunization?"

- **Vaccine Procurement**

The focus of most donors, especially UNICEF, WHO and USAID, has been in the area of increasing government contribution to vaccine procurement. The reason for the focus is that an uninterrupted supply of quality vaccine is critical to all programmes. Procuring vaccine requires adequate planning and budgeting for a substantial level of funds in exchangeable currency. UNICEF has recently developed a new strategy backed up by an Executive Directive which is intended to assist countries to become self-sufficient in vaccine procurement at the same time that UNICEF’s resources are targeted to the most economically needy countries.\(^\text{27}\)

WHO reinforces these efforts and co-ordinates support of developing local production where appropriate? Part of this strategy is to develop countries' abilities to forecast vaccine needs and to strengthen supply and distribution systems. USAID has been active in assisting countries to develop the capacity to project and plan for vaccine needs.

*Get governments self-sufficient in procurement!*

There are several mechanisms available to countries to procure vaccine, involving direct purchase, procurement through UNICEF and procurement through a revolving fund established by PAHO. A mechanism similar to that used by PAHO, called the Vaccine Independence Initiative (VII), was established in 1991.\(^\text{28}\) The VII has been successfully utilized by several medium-income countries, including Morocco and the Philippines.

*VII worked in Morocco partly because donor co-ordination worked ready well at country level.*

Vaccine procurement in Latin America has been very successful, and while some donor funds were used to capitalize the fund in part, the fund is now largely supported by the region. The success of this mechanism is not only reflected in the increased self-sufficiency for vaccine in the region, but it has also provided a forum for regional planning and operations. These activities were just as important for sustainability as ensuring continuous supply of affordable vaccine.


The revolving fund was one of the most important things in the sustainability of [PAHO] programmes... If it was not for the revolving fund, [Latin America] would not be able to have national plans, because for a country to buy through the revolving fund, they have to have a forecast of vaccine needs. ...that allowed [PAHO] to open a dialogue with the country, to say, "But why do you need that much or that little? What's your target group? How are you planning to use this vaccine? How are you going to evaluate if the people are vaccinated or not?"

The focus on vaccine is, in part, a reflection of the high cost of vaccine borne by donors. In 1993, UNICEF spent US$64 million for developing countries. However, vaccines only account for approximately 10-15 per cent of overall costs of programmes in many countries. Some country informants thought that the current emphasis on supply of vaccine alone was not enough to ensure the financial sustainability of programmes. There is also the possibility that, in the intense attention paid to ensuring supply, more intractable issues of finding funds for transport and supervision to ensure delivery to the child will not be resolved.

Plans and projections to increase government share of purchase over the next five years have been drafted. What remains to be seen is whether governments add funds to BPI programme budgets for this cost, or whether they reallocate from within health programmes. The hope is that they will reallocate from less cost-effective activities in curative care to preventive activities such as immunization, but there is not enough experience to know whether this will be the case.

Funding Support for Different Types of Costs in EPI Programmes

Most external donors prefer to fund what they consider to be the 'development' costs of programmes, and bilateral donors often negotiate plans for 'phasing out' with government take over of funding responsibility. Developing country budgets are also often divided into categories where 'development' budgets and 'government' budgets are separate. In practice these categories may be based more on the history of interactions between donors and governments in given countries than on standard definitions.

After 1990, donors became more selective about what activities or items they would fund. There is some funding for the replacement of cold chain equipment, but vehicles are problematic because they are expensive investments and are subject to misuse. Governments have been expected to provide replacements since 1990, and the result has been moribund transport fleets. A substantial amount of resources prior to 1990 was put into training, and there is now a larger pool of skilled workers capable of providing ongoing training. However, in Africa, especially West Africa, programme managers believe that a new generation of workers needs training support because of loss of public sector manpower to the private sector and to AIDS.
The most problematic areas of what types of costs external donors will fund involves travel and transport. In the Lao People's Democratic Republic, a major breakthrough occurred when the Executive Director approved of UNICEF funding for immunization operational costs. The positive impact of these funds on programme performance was seen almost immediately. This proved to be essential if remote villages were going to be reached. In Uganda, outreach services, supervision and supply systems have deteriorated as allowances are not available, and in some Kenyan districts supplies of gas for cold-chain backup are no longer being distributed. The only country where this did not seem to be a problem with regard to donor funds was the Philippines.

Programme managers have assessed areas where government should increase its funding commitment. Aside from Côte d'Ivoire and the Lao People's Democratic Republic, these were reported to be vaccine procurement, locally available consumables and maintenance of the cold chain. However, it should be noted that the decisions about where to advocate for government funding are complex, because they are not simply an issue of recurrent or capital expenses or foreign exchange. The government does not always release the funds it budgets for programmes, and programme management may have more leverage for getting certain line items than others. Also, the timely release and receipt of some line items are critical for programme implementation at district and community levels, while others are more elastic. Donor funding is seen as more reliable and timely, in part because it bypasses the government disbursement system, and it may be rational for programme management to make decisions about how to use both systems to most effectively get the job done.

There are also issues of the utility of line items and how they are perceived by those that work in the system and donors alike. Vaccine is a commodity that is necessary but of no personal value to health workers. Allowances, per diems and transport also function as personal benefits and the lack of one may be valued differently than the lack of another regardless of programme impact. Whether these items are funded by donors or governments may disproportionately affect programme implementation because of the value placed upon them by health workers.

Interestingly, some of the same issues arose in Latin America in the context of disease surveillance programmes and donor inputs. Donors provided funds for 'mobility'. Are these funds still being provided, and if not, have surveillance activities been affected?

*So if you get now the resources of the government in terms of manpower and you train them and you give them mobility with transport and per diem, then you can start talking about surveillance. So that's a major input from donors to make the people work.*
Accountability and Responsibility

Accountability, especially for donor funds, and responsibility for ensuring accountability are issues that were obliquely and directly raised during interviews. Kenya provides an extreme example. The accounting for funds used in the Kenya Expanded Programme on Immunization (KEPI) at all levels is a major problem. One of the hallmarks of technical assistance to this programme has been the provision of an expatriate accountant to document finances provided by donors. The government health system seems to have a culture of acceptable behaviour with regard to finances, work time and service provision that constrains the growth of responsibility and leadership. As in other countries, such as Ghana and Uganda, this may be partly a reflection of economic conditions and low salaries. The most visible problem was whether staff on salary were actually working. Many staff at all levels were actively engaged in their own work, and simply were not there.

These issues are usually not directly discussed in mixed groups of donors and government workers. Donors were more likely to recount anecdotes of misuse and abuse of funds, although drivers, health centre workers and district medical officers also referred to them. The magnitude of the problem is not clear from this review or any evaluation. The problem is that decisions on funding both at the donor and the government level are often made directly in relation to personal perceptions of 'honesty' and 'commitment'.

2. Technical Inputs

Donor organizations differ over what they believe to be the need for and supply of technical assistance for immunization programmes. WHO and USAID have been the strongest advocates for more technical input, while UNICEF has been more interested in building political and social support. Before UCI, there were many technical requirements for establishing programmes on a wide scale, the most important of which were cold chain, sterilization and evaluation. As programmes have developed, needs have changed and relate more to information systems, disease surveillance, efficiency and quality. However, it is difficult to generalize about the specific need for technical support in countries today. Programme development has proceeded at different speeds as political and economic circumstances have changed. Countries may require technical adjustments of service delivery strategies, vaccine supply and distribution, or training. Some technical capacity was built during UCI in countries, especially those with stable personnel and some infrastructure. However, in Africa, where trained personnel have moved into the private sector and where decentralization has shifted the locus of control, there are staff who have not yet been reached by training programmes.

The quality of technical assistance was reported to be variable by field staff. The appropriateness and utility of various consultants was questioned and anecdotes of recommendation for inappropriate strategies recounted. Dependency on short-term
consultants rather than long-term technical partnerships contributed to the situation. There were felt to be few mechanisms for ensuring accountability and effectiveness of technical input.

3. Donor Co-ordination

The most important theme after funding raised by informants was donor co-ordination. It involves the relationships, mechanisms and importance of co-ordination among donor agencies, government agencies and NGOs in immunization programmes. These relationships have to occur at global, regional, national, and district levels. In general, the national level is the most important locus for co-ordination. There are some mechanisms, which supercede individual relationships among organizations. The Task Force for Child Survival was established to promote child survival and to provide a forum for global discussion on relevant issues. The question that was raised for this kind of mechanism is how is it evaluated or held accountable for the considerable influence it wields in advocating goals and strategies?

*The Task Force for child Survival was an important step at the international level to get [global] cooperation.*

UNICEF and WHO have been key players in UCI and immunization programmes since 1990. Co-ordination is reported to be good, although there are points of conflict. Some of these are geographical, and others are initiatives and the relative intensity with which they are pursued. UCI, poliomyelitis eradication and disease surveillance are examples.

*UNICEF and WHO have worked hard to try to co-ordinate their policies and donor aspects of [them].*

The level and success of donor co-ordination seems to follow patterns by region. Within WHO, PAHO and the South East Asian Regional Office (SEARO) co-ordinate more effectively than the Western Pacific Regional Office (WPRO) or AFRO. Within Latin America, countries co-ordinate around PAHO mechanisms, and this is a hallmark of their success. The Asian countries included in the case-studies for this report did not find problems with co-ordination once committees were established in countries. In India, there was one plan for the immunization programme and most donor funds were channelled through one mechanism in UNICEF. However, informants in other Asian countries reported that formal mechanisms on paper did not reflect actual working situations.

In Africa, donor co-ordination was roundly criticized, with the exception of several countries with strong governments. In the four African countries studied, donor co-ordination was agreed to be poor, confusing and wasteful of resources. In Uganda, co-ordination was disorganized and informal, in part because there had been no strongly felt need in the relatively small donor community and little direction from the government. In
Ghana and Kenya, donor relationships and donor-government relationships are sometimes conflictual, and there can be difficulties in getting people together. In Côte d'Ivoire, co-ordination of EPI at the national level is the number one concern of donors and a high priority of district personnel who are frustrated in not knowing who is in charge.

In Kenya and Uganda, BPI personnel pointed out they were often excluded from coordinating committee meetings because they were designed for interactions with higher level staff. This meant that the most knowledgeable individuals were not participating in problem resolution or planning with regard to immunization.

In Ghana, informants thought that donor inputs would be more efficiently coordinated through assistance to health districts, and sustained (at least in part) by emerging cost recovery initiatives. In Uganda, policies of decentralization were expected to make co-ordination more difficult, and some were worried about district divisions by donors. Not surprisingly, there were very few concrete ideas about how donor co-ordination was going to be improved, and little sense of urgency about when.

*Donor co-ordination in Africa stopped in the late 1980s, early 1990s.*

At the country level, donor co-ordination is critical, and mechanisms are inadequate. Interagency co-ordinating committees (ICCs) have been encouraged and established in many places, but they are reported to be personality dependent and only as effective as the government and donors want them to be. Donor conflicts were reported often for Africa and the Newly Independent States (NIB).

*Occasionally programmes are really hurt by squabbles between AID and UNICEF. Donor co-ordination needs to occur at the country level.*

The most important aspect of co-ordination that was identified involves government-donor relationships. Governments must play an active and leading role in managing co-ordination committees and activities for them to be effective, yet many governments do not.

*Donors had their own programmes, which they were implementing ... all the donors had their own methods of implementation, they had their own record systems which had been developed before they came here. So the only co-ordination that one could do at that time was to see that there was no duplication of effort ... donors ... were not participating in the national programme.*

*Our country has been Balkanized. We are split up. The provinces have been split up and given into the hands of different donors.*

Countries first focused on preventing or correcting gaps and duplications. But just as donors had their own agendas, sometimes governments had their own agendas.
Governments play one agency against the other to get everything they want, not necessarily what the problem needs. I think clearly there is a certain amount of irresponsibility on the part of the government which is encouraged by the donors.

Ownership and commitment to programmes were felt to be reflected in how governments participated in the co-ordination process. The programmes that have worked the best and have been sustained have had strong government leadership that guides donors in planning for resource allocation.

And when they found it for themselves, they said, "oh yeah, that works here, too. that too many people...just didn't feel that they were part of the process. "It's that too many people...just didn't feel they were part of the process.

Often donors were part of the problem. Their style of working prevented interchange between counterparts, slowing the building of capacity.

One of my biggest arguments for UNICEF is putting their UNICEF staff into UNICEF offices rather than putting them into ministries of health. Even though it is somewhat less efficient, it does contribute to sustainability.

In a lot of countries that did not sustain it, there was a very strong individual (UNICEF or WHO or USAID) that sort of ran the immunization programme.

The major partner for donors in health is usually the MOH. For many reasons, MOHs tend to be among the weakest divisions of government. Government decision-making in setting priorities or allocating resources is done by the Ministry of Finance or Planning. Donors that involve these other ministries find that issues important to sustainability, such as finances, are more effectively addressed.

It is important to involve the Ministry of Finance or planning because the MOH doesn't make cost-effective source avocations.

Donor co-ordination is a misnomer because it amplifies the importance of donors in the planning and management of programmes, It might better be described as Immunization Programme Co-ordination, an activity that should be undertaken by governments, donors, NGOs and communities together. This would contribute to sustainability by improving planning, efficiently allocating resources and opening up options for solving problems.

Guinea is a good example. It's one of those countries, which said, "Sorry, we are not going to bend to donor activities. We want to develop our health systems, and once we have our health systems developed we win carry out vaccination within our health system."
Political and administrative systems involve both the underlying economic, political and historical characteristics and systems of nations, and most importantly the exercise of political will in relation to child health.

1. Political will

The development and maintenance of political will at the highest levels was a hallmark of UCI and has continued to provide support for immunization programmes. UNICEF, especially the late Mr. James Grant, played the pivotal role in developing political commitment, country by country. Representatives have remarkable access to presidents and prime ministers and meet regularly with them to monitor immunization coverage. UNICEF has worked to extend political commitment down into provinces and districts, and to encourage local administrators to review coverage at their own levels. Well planned use of the media has been an important element of making political will more effective in those countries with televisions and radios, as visibility of leaders' support is what lends credence to services at the community level.

They're calling the world's attention to the importance of carrying on these kind of programmes So I think that kind of worldwide advocacy, ...I must say, that's what UNICEF does best of all.

While political will has been most visible at the national level, UNICEF has worked to develop it at the global level also. Worldwide meetings served the purpose of calling political attention to children and their needs. These activities influenced the actions of other donors, and provided an environment that was more favorable to supporting child survival activities.

If it hadn't been for Jim Grant and for the World Summit I think during the last part of the Bush administration. ..I think health would have really fallen down. It helped us tremendously in terms of our resources and that perspective of sustainability.

One of the strengths of UNICEF's work to increase and maintain political will was that there were planned and effective methods of following up with Heads of State and other political leaders. In India, for example, a system to monitor coverage and report it to the Prime Minister's office was put in place. Follow-up communications were simple, and, the systems that delivered them worked. Activities that were visible through the media were carried out, and credit was given to those providing the political leadership.
This is one of Mr. Grant's great principles. You get people to make promises, but you get them also to build a mechanism in to see whether the promise is being kept.

In the Lao People's Democratic Republic and the Philippines there are presidential proclamations supporting child immunization as priority programmes. In Kenya, presidential commitment was established in the past year. In Uganda, the president was singled out as being intensely interested in the programme since it was initiated.

In Kenya and Uganda, presidential and high level political commitment is essential to mobilization of district and community politicians and ultimately the community. Ugandans believe that UNICEF should re-energize politicians to whom it has access when the effect of political will wanes as interests broaden to other sector issues. Informants in both countries would encourage UNICEF also to increase the scope of its role to advocate for more practical commitment, such as increased government funding.

In Ghana, mobilization and sustainability of political will needs to be strengthened at the decentralized level, especially the district assembly and local commerce. In theory, the district assembly is to become the 'co-manager' of the district, although this has yet to be successfully implemented. Mr. Grant's visit to Côte d'Ivoire resulted in a renewal of political commitment for EPI and a promise to closely monitor the programme. Informants here suggested that given the wen developed infrastructure, innovative approaches to mobilize the 'commercial' as well as the 'political' sectors might be encouraged.

À Adzopé, il y deux boulangeries qui ont environ 20 véhicules ensemble et qui transportent a eux deux le pain dans les villages. Est-ce que l'on ne peut pas organiser avec ces gens le transport des portes-vaccins avec une certaine quantité de vaccins ? Ce sont des mesures qui coûteraient moins chères.

Informants also warned about the costs to engaging politicians in these kinds of activities. In one country, a particular political leader took up immunization as a cause. After the next elections the new leader did not want to be associated. when political will is engaged it is necessary to use the political apparatus within a country. It can become associated with one form of government and politics or another. This can affect sustainability negatively, as quickly and strongly as it can affect sustainability positively.

Political will is important but I don't like bypassing the democratic process, and it has happened. ...What was done with the Organization of African Unity [OAU] and the mid-decade goals was a bit like that.
2. **Economy**

   - **Level of Development:**

   The level of economic development of a country is one of the determinants of capacity to provide and maintain health services. Various economic indicators are used by most donors to determine levels and types of aid provided. UNICEF has recently carried out an analysis of need for external support of vaccine procurement based on economic and demographic indicators.²⁹

   *Three key factors influence the type of support needed for a sustainable vaccine supply: the relative wealth of the country (GNP/capita), the total population size and the total GNP.*

   Countries such as Ethiopia, Ghana, the Lao People's Democratic Republic and Mozambique have low GNP per capita relative to most other countries. By contrast, India, Indonesia, Morocco and the Philippines have more resources, and PHC systems receive greater support. Lack of economic development does not prevent immunizing significant proportions of children, as was proved by UCI, but service delivery strategies and external donor assistance must match local capacity and need at a given time.

   The GNP per capita, the percent of central government expenditure allocated to health, and literacy rates are shown for the six case-study countries in Table 14.

   **Table 14: Economic and Social Indicators for Six Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>GNP Per capita 1992 (US $)</th>
<th>% Gov't Expenditure on Health</th>
<th>Adult Literacy Rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Male</td>
</tr>
<tr>
<td>Philippines</td>
<td>770</td>
<td>4</td>
<td>94</td>
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<tr>
<td>Côte d'Ivoire</td>
<td>670</td>
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<tr>
<td>Ghana</td>
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<td>Kenya</td>
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<td>5</td>
<td>80</td>
</tr>
<tr>
<td>Laos</td>
<td>250</td>
<td>NA</td>
<td>92</td>
</tr>
<tr>
<td>Uganda</td>
<td>170</td>
<td>2</td>
<td>62</td>
</tr>
</tbody>
</table>


Uganda is the poorest country by these definitions, and government spending on health is a tiny proportion of government expenditures. What is spent goes primarily to curative care, and one study estimates that only US$1.70 per capita per year is spent on public health. Even with improvements in efficiency and reallocation from curative to preventive care, Uganda is unlikely to have enough resources to immunize its children. Conservative estimates of from 10 to 20 years of continued donor support are considered necessary. By contrast, the Philippines, with a GNP per capita four times that of Uganda's, has assumed much of the recurrent cost of its EPI programme. As has been shown in other health and demographic literature, economic levels do not necessarily predict success in health programmes. Côte d'Ivoire is better off than Kenya, but has not been able to achieve the same coverage.

Stability

The stability of the economy, within a country and perhaps even within a region, influences the resources that are available through governments to programmes. It may influence the decisions of health workers and parents about delivering and seeking immunizations for children. In the 1970s, the Kenyan economy was destabilized by the sharp increase in the price of oil, coffee and tea. From 1980-1985 GDP growth slowed because of world recessions and a local drought. The period 1986-1990 brought structural readjustment. In the 1990s the rate of growth declined steadily because of poor performance in main exports and declines in external resources. This situation contributes to serious underfunding of the public health sector, and immunization programmes survived largely because of the insulating effects of donor funding.

Living Wages:

Public sector wages in some countries are low vis-a-vis the cost of living. In Ghana, the Lao People’s Democratic Republic and Uganda, health workers and managers must earn a living outside government service in order to support families. The effect of this is to diminish the actual working time available to supporting or providing immunization services.

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3. Politics

- Security

Physical security within a country influences what services can be provided. In Kenya, the Philippines and Uganda, there are areas that are not secure due to political or ethnic tensions. This means that there are pockets of unimmunized children who may only be reached by the use of special service delivery strategies. Much has been made at UNICEF about the willingness of leaders and communities to suspend hostilities in order to immunize children, even in war. This is unquestionably a laudable activity, but these situations cannot be assessed in terms of sustainability.

- Government:

The form and activities of governments influence the support of immunization programmes because they also influence donor-government interactions and resource availability. In 1991, donor aid in all sectors for Kenya was significantly curtailed for political reasons, including pressures to encourage multiparty democracy and human rights. The government of the Lao People's Democratic Republic maintains diplomatic relations with some governments but not with others, and thus bilateral aid may be limited. An area not explored by this review is whether forms of government influence community participation and contribution to activities such as immunization programmes. This would involve reviewing complex cultural and political structures, a task, which exceeded the scope of this study.

- Refugees:

Informants cited the presence of refugees in a country as a problem for providing and maintaining immunization services. Ghana, Kenya and Uganda all have refugee populations that are protected by the United Nations High Commissioner for Refugees (UNHCR). In Uganda, the EPI programme handled vaccine storage and transport but did not directly deliver services, and the sense of burden was expressed more by economic planners than by health personnel. Refugees are felt to be a temporary problem by many donors and thus not relevant to questions of sustainability. However, most refugee populations are now in poor developing countries and repatriation is an elusive goal.

4. Health as a Component of Government Systems

- Historical Development:

The history of health system development may influence current decision-making. In Uganda, immunization was restarted during the active rebuilding period, and service delivery strategies were designed to respond to an 'emergency' atmosphere. When systems were
needed quickly in order to deliver immunizations, shortcuts were taken by introducing new, focused procedures that bypassed or became parallel to defunct systems. In Ghana, there has been a commitment to PHC since the 1980s which has formed the basis for much of district health system strengthening and participatory policy-making processes. Immunizations must be delivered in the context of this system.

- Credibility with Population:

The credibility of the public health system is important to utilization or services. With the possible exception of the Philippines, government health services in the six country case-studies were perceived to be poor by clients and evaluators. This means that they are most likely being utilized for specific problems or as a last resort rather than routinely. One recurring theme in all country case-studies was that supplies of simple drugs were essential to public perceptions or credibility and quality. When health facilities or workers did not have drugs, populations did not consult them. Depending on the country involved, they often consulted private practitioners instead. While immunization is most often a service delivered by the public sector, demand may be determined by perceptions of other services.

5. Government Financial Systems

Government financial systems in some countries were thought to be inefficient, wasteful and subject to manipulation. Even when they function, there are restrictive rules and regulations which may make it difficult to undertake some activities important to generating long-term support for immunization. Several informants described the need to go around central government systems to deliver funds closer to the point of implementation.

Now, the secretary in the health department never wanted UNICEF to give the money for these meetings to the health department.

This was really the beginning of our own decentralization, where a central government realized that we could get the money out where it was needed to run workshops, to do communications, to handle cold-chain repair…. It was clear that we could help facilitate things by making resources available without bureaucratic hang-ups.

How governments actually expend the programme resources influences sustainability. Planned expenditures as shown in budgets and actual expenditures may be far apart, particularly for critical line items such as transport and per diems. Expenditures can be frozen without notice, never released or diverted to other activities. The full impact of these kinds of problems varies by country, but there is a pattern of actual expenditures being significantly lower than planned.
Except in Ghana and the Philippines, donors in the case-study countries had bypassed government systems in order to release money to operational levels such as the district or community. There was a difference of opinion among informants as to what would contribute to sustainability. One side believes that the government system must be changed through the process of insisting it be used in order to achieve long-term sustainability. The other side believes that it will always be necessary to maneuver outside systems at least with small amounts of money. However, with increasing government contribution expected, it was clear to programme managers that something was necessary to expedite the release of salaries, allowances and consumable line items.

Several themes within the structure of the health system were reported to be related to sustainability of programmes, especially after 1990. They are the level of infrastructure and human resource development of the health system, the service delivery strategies employed, integration of programmes and the working relationship between the public and private health services sectors.

1. Level of development

Health systems in developing countries vary in terms of infrastructure development and human resources. Crude measures of this might be the number of physicians or nurses or facilities per population served. While the quantitative measures do not clearly reflect the level of development, informants would identify countries as having 'well-developed' or 'poor' infrastructures. These judgements appeared to be consistent across informants. In general, it was felt that those countries with well-developed health systems were better able to absorb and effectively apply resources during UCI and consequently to maintain or sustain coverage.

2. Service Delivery Strategies

Services have been delivered in a variety of ways in all countries. Strategies included fixed facilities, fixed site outreach, mobile teams, NIDs and mini-mass campaign or pulse outreach. The late 1980s and 1990 were characterized more by mass campaigns and mobile team activity in countries with low coverage. These strategies grew out of what had been successful for smallpox eradication and what people believed would accelerate coverage rapidly and efficiently.

During UCI, international organizations became identified as advocates for particular strategies. UNICEF was seen to be the major proponent of campaigns particularly in Africa.
and low-income Asian countries, while WHO and other bilateral donors preferred technical systems strengthening. NGOs such as the Save the Children Fund (UK) emphasized the institutionalization of PHC systems. Since 1990 and with the establishment of the poliomyelitis eradication goal, WHO has become associated with NIDs, a campaign-like strategy that does not fit well with UNICEF’s new systems development strategy.

Reports of problems with campaigns during UCI generally outweighed reports of advantages. For example, single campaigns or series of campaigns for one year only were described as irresponsible unless plans with guarantees for finances for follow-up activities were made. During campaigns extra resources such as incentive payments to health workers and communities were given, creating disillusionment when they could not be sustained. Campaigns were implemented quickly in pursuit of targets, and often outran the development of essential supply and maintenance systems, causing substantial inefficiency.

In some cases, campaigns or periodic outreach or pulse strategies are the only mechanisms that reach large segments of the child population. Many rural communities in Africa do not have easy access to health facilities, and the same is true for some countries in Asia. The pulse strategy of the Lao People's Democratic Republic comes at a time when most countries have redirected efforts towards building routine services in fixed facilities. This is a reflection of the low level of infrastructure development in the Lao People's Democratic Republic and there are some similarities with other countries which, prior to 1990, used EPI as the cutting edge of PHC services into the community. Long-term plans for provision of services are not yet clear in Laos. What may be important is to identify that time at which the approach should be changed to reflect increasing infrastructure.

Campaigns can only be done if you make a long-term commitment of annual campaigns from five to seven years. You certainly need campaigns in areas where there is no access and no availability.

But nobody really ever thought of the issue of sustainability. I mean the feeling was that ... you could continue to do mass campaigns forever.

In Kenya, the campaign approach currently being used is problematic for some donors and the government, especially in relation to sustainability. While many felt that it had been implemented as part of a target-driven effort, it may also have been done to cope with the increasing difficulties of the KEPI management unit in supplying services.

Some have argued that UCI campaign strategies helped to push services out to the periphery and to revitalize PHC systems that were not very effective. Connections to communities were forged and remain to be built upon for more sustainable services. NIDs are reported to function in the same way, and, by expanding the use of other sectors, stimulate community demand. NIDs are so successful at energizing health workers in some places that they have been used for other health interventions, such as vitamin A supplementation. Certainly large numbers of children are receiving immunizations, especially
poliomyelitis, through this mechanism. But there is also a sense that the demand they stimulate may be ephemeral, and programme managers believe that they detract to some extent from routine systems.

**WHO with poliomyelitis eradication was negative—I think without it we could have maintained the full coverage better. I don't really support the NIDs ... I was worried it would displace the routine immunization.**

**Eradication campaigns properly orchestrated can be used to help generate and strengthen broader-based immunization campaigns.**

The debate over service delivery strategies is likely to intensify with global plans to increase NIDs over the next several years. It is not clear what impact they will have on systems development in Africa, for example, because the lessons learned from UCI may not be strictly applicable. UCI was characterized by increasing and more flexible donor funding, while BPI programmes now are characterized by decreasing and less flexible donor funding. Governments are being required to take on funding and managerial responsibility at the same time that conditionalities for NIDs will be applied. Perhaps the most important lesson learned from UCI to extend to the use of NIDs is that the goal is not only to eradicate poliomyelitis, but to sustain the ability of the system to deliver all antigens.

**Supporting, seeking out, paying particular attention to strategies that can be applied routinely and become a habit rather than an effort. It becomes part of the system without requiring exceptional pushes ... My own point of view is that I am very interested in building machinery that takes care of the job rather than inspired activity or special intensity.**

3. **Integration of Immunization with Other Services**

In principle, nearly all those interviewed accepted integration of MCH services as the appropriate strategy for delivery of PHC services. Integrated services are thought to be eventually more sustainable than single-focus services at the community level. However, differences of opinion over the more vertical approaches taken during UCI and those now being taken for poliomyelitis eradication focus not on the desired service design (integrated) but on the benefits of starting with one and building on it with another. The short- and long-term costs and benefits appear to have different utilities for different people.

The Philippines is a good example of a health system that has delivered a range of health services through multi-purpose workers for some time.

*It's tied to integration with other services. Mothers are able to plan their day. Especially so in market centres...to get all those services at the same time. Travelling is expensive. ...*
In practice, all programmes in Africa began with immunization and added other interventions over time. In Ghana, Kenya and Uganda, growth monitoring, CDD, simple treatments and antenatal care are offered. The theme of integration was discussed from different angles—integration of services at fixed centres, integration of activities at outreach sites and integration of planning at the district level. At the district, the extent of integration was tied to how far decentralization had progressed and was providing a buffer to centrally driven vertical projects. Even so, prior to the district becoming the focal point for management, district medical officers used what resources they had for everything they needed to do. At this level, the effect of vertical project priorities was to skew allocation of worker time to different services. This was more pronounced prior to 1990 and accounts for the feeling that EPI predominated. Now districts have more control.

We need to have an integrated itinerary so that we can make maximum use of manpower, financial resources and transport. This should include immunization, discussion with the village health committee, supervision of the clinic, etc.

Integration at the central level is said to be a case of immunization leading the revitalization of the PHC system. While this may be the case, this description is used to mask the intensely vertical and isolated nature of the national level BPI. In Côte d’Ivoire, Kenya and Uganda, BPI is a separate entity with little communication among managers and technical directors of related PHC services. There is a strong sense of territoriality and control, but there are also legitimate concerns about being able to deliver an output or an outcome while being dependent on other, less well-functioning parts of the MOH.

Clearly, there were some high costs to UCI; at the central level these were money and other tangible resources, while at the field level they were opportunity costs: how workers spent their time providing services.

Oh, it had tremendous costs. I mean you take the campaigns. They close down ORT units, they close down hospitals. Kids were dying of diarrhea and pneumonia because people were out doing campaigns. There’s pretty good evidence in Côte d’Ivoire and possibly Senegal. ... There’s no question that the cost was tremendous in diversion of resources.

The concern with costs extends to the national level. In times of donor funding earmarked to particular programmes, governments will choose to allocate their resources elsewhere. The effect of this was to limit government investment in immunization, and as donor funding is now decreasing there has not always been a reinvestment by government.

In the 1980s, UCI drove national resources out of BPI into other things, and now they’re away, they don’t come back.

While there was agreement on the costs, there was disagreement on whether diversion of resources really took away important benefits.
Doing immunization has inevitably meant money was siphoned off from some other things, and what those were varied from country to country. I would wager, however, that whatever the money was being sucked away from, it was from something that was less cost-beneficial to something that was more cost-beneficial.

You see, of the child survival interventions, the one that's out there in operational things that's proved to have impact is immunization. You've got to go hard to find an operational programme with diarrhoea that's doing it.

The vertical nature of BPI programmes at the beginning of their acceleration also had advantages. To some extent, the technical requirements of BPI required centralized, vertical control particularly for cold chain and distribution of vaccine. It would not be possible to discuss sustaining benefits if potent vaccine were not available to children. The intense time and resources devoted to BPI at all levels also contributed to its success. This success was visible and helped to bring credibility to health systems that were experiencing severe problems in providing services.

Within UNICEF, some countries have moved forward and built upon EPI in the initiative they call EPI plus or UCI plus. Essentially, the basic package of MCH services is added to the health system that was originally strengthened by work in EPI during UCI and immediately thereafter.

And EPI plus means we need a recurring contact with mother and baby, both prenatally and postnatally which must extend through the first year, should extend through the first couple of years, and during which you get a comprehensive array of services which includes everything from family planning to nutrition and growth monitoring, you know, our whole package. Exactly how you do it and what you do will be determined locally.

Some have described the initiative to eradicate poliomyelitis as a new 'vertical' programme within BPI. Some of the same discussions of costs and benefits to an intensive, single-focus approach were raised by informants. Poliomyelitis eradication may provide considerable resources to governments, but these resources are specific to the needs of eradication, including poliomyelitis vaccine, surveillance and information systems. The end result should be the eradication of poliomyelitis with its attendant savings in human lives and prevention of disabilities, and in eliminating the need to fund the production and delivery of this vaccine.

The poliomyelitis programme...has shown a tension existing between the poliomyelitis eradication group and EPI because technically to eradicate poliomyelitis one can look more into the smallpox campaigns which were called vertical programmes and that would tend to conflict with the infrastructure development.
It has the capacity to draw resources away from other immunization activities.

There's this irony—if you eradicate poliomyelitis, that's probably the most sustainable thing you could ever do.

Some informants argued that poliomyelitis eradication could be used in the same way that EPI has been used for EPI Plus—as an important building block to PHC in developing countries. This would happen through the institution and expansion of disease surveillance, which could have spin-off effects for mobilizing health workers and improving the quality of services. While this is a possible scenario for health system evolution, it is not felt to respect national ownership and commitment to programmes, particularly at a time when donor resources are declining and countries are being taken to task for sustaining coverage.

If you want us to eradicate poliomyelitis for the sake of eradication around the world, you're going to have to pay for it. Not that we're not sympathetic, but in our list of priorities it falls somewhere down off the bottom of the affordable list.

Some informants provided useful examples of the relationships between integrating services and sustaining them. It might be possible to plan for and evaluate vertical strategies such as poliomyelitis eradication to see if they incorporate them.

One of the keys to sustainability is integration, and one component of EPI that needs to be integrated is the health information system (HIS).... Combine resources ... rather than several training courses, fit them together ... Programmes join forces so that the funding success of one programme is linked with the other. This is a more effective use of funds and MOH resources. Another example is sharing service delivery opportunities for preventive services. I'm surprised this has not been explored more... using EPI contacts in the first year of life for family planning ... This is more sustainable only because the programme is being supported by a net, the strands are always linked. It's like the stock market, not depending on EPI as being the only programme ... Keep careful track of how successful new policies are as they are introduced.

In the West African countries an interesting parallel was drawn between the vertical and disproportionate development of EPI services prior to 1990 and the currently disproportionate development of support systems vis-a-vis each other and vis-à-vis services. While support systems are usually thought of as cross-cutting all services and therefore strengthening them, it may be true that selecting one component, such as logistics, and ignoring all others may destroy the balance needed for sustainability.
4. Public and Private Sectors

The role of the private sector and relationships between the public and private sectors for immunization services was identified by informants as a poorly understood but increasingly important issue for the evolution of PHC programmes in developing countries. In African countries, NGOs provide a significant proportion of services in rural areas (40-50 per cent), and in India, the majority of health services may be provided by one type of private practice or another. Nonetheless, immunization is felt to be the responsibility of the government. Thus may reflect a bias in this study, where NGO interviews were limited and tended to elicit only those things that were done to support the government. It may also reflect the dependence of all providers on government and donor mechanisms to procure vaccine.

Partly because of decentralization, the mechanisms and opportunities for NGOs and government agencies to collaborate effectively in all programmes are increasing. In the long run these mechanisms may replace or join partnership coordinating mechanisms developed by UCI through social mobilization. At the same time, there is expanded donor interest in working with private aid and charity groups since they have demonstrated greater efficiency, than many international organizations. The balance of partners, including donors, NGOs, local authorities and communities, in terms of resources and responsibility is shifting. It is not clear how this will influence sustaining immunization or, more broadly, PHC programmes, but the interaction of public and private sectors deserves more attention and study.

But you must not give up on state services and certainly you shouldn't give up on it sectorally the way we gave up family planning through the NGO community. Or, NGOs are wonderful, let's give them all the money.... I think this is having a major impact, a potentially disastrous impact, because it means NGOs will spring up all over the place simply because they know there is money to be accessed.

Findings from the global and national levels about the operations of the health care delivery system were somewhat different (Table 15). At the national level, informants and evaluation documents emphasized decentralization, goals and targets, and some key strengths and weaknesses in systems. At the global level, there was much greater concern with goals and targets, disease surveillance, information systems, long-term planning and quality. Decentralization was occasionally mentioned, especially in conjunction with integration, but was not as strong a theme as at the national and community levels.
**Table 15: Strengths and Weaknesses of Operations: Consensus of Informants at Central Level**

<table>
<thead>
<tr>
<th>Strong Programme Elements</th>
<th>Weaker Programme Elements</th>
<th>Priorities for Improvement for Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training</td>
<td>Vaccine Procurement</td>
<td>Vaccine Procurement</td>
</tr>
<tr>
<td>Cold chain</td>
<td>Planning</td>
<td>Planning</td>
</tr>
<tr>
<td></td>
<td>Financial Management</td>
<td>Financial Management</td>
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<tr>
<td></td>
<td>Disease Surveillance</td>
<td>Disease Surveillance</td>
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<tr>
<td></td>
<td>Information System</td>
<td>Information System</td>
</tr>
<tr>
<td></td>
<td>Quality</td>
<td>Quality</td>
</tr>
</tbody>
</table>

Informants in countries were asked to identify systems within immunization programmes that were strong and weak, and to identify those that were most important to improve in the near future. Since the questionnaire emphasized sustainability, Informants usually discussed systems improvements in relation to what would contribute to sustaining immunization coverage (Table 16).

**Table 16: Consensus of Informants on Strengths and Weaknesses of Systems of Operations in Immunization Programmes in Six Countries**

<table>
<thead>
<tr>
<th>Country</th>
<th>Strong Systems</th>
<th>Western System</th>
<th>Priorities for Improvement for Sustainability</th>
</tr>
</thead>
<tbody>
<tr>
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1. **Vaccines and Cold Chain**

In general, all six case-study countries had strong cold chain systems because of intensive technical and financial inputs in this area. They were also able to maintain stocks of vaccine in most places on a regular basis. Issues of stockouts appeared to be related to funding crises or to isolated instances of breakdowns in the logistics systems. Information systems for vaccine and cold chain were also good.

The need to develop capacity to project needs and procure vaccine at the national level was discussed in the context of external donor assistance. It is a system that global policy makers identify as critical to developing vaccine self-sufficiency at the national level. While national level commitments to providing funds for the purchase of vaccines is evident, plans for the development of procurement capacity were less so. Those countries that have participated actively in VII may provide case examples, but they are few in number.

2. **National plans of Action**

The capacity of nations and districts to plan in a minimum of a five-year time-frame was reported to be essential for sustaining immunization. One of the reasons for the success of the Latin American region is that planning has been institutionalized. Since budgeting is considered a part of planning, the blueprint for all activities exists.

One difference in Latin America is that national plans of action exist.

I think there are two or three things that...can be done. ...One is that the countries have organized national plans of action, which, by the way, are modelled after the BPI plans of action. And second, also modelled on the BPI methodology, they created a national inter-agency coordinating committee, at least here in the region of the Americas. And we have even, you see, signed agreements. For instance, the signature of the agreement in the Americas is with the Inter American Development Bank, UNICEF, PASO, AID, UNDP and the World Bank. By using the plans of action, you can see the allocation of resources and you can monitor the implementation of the plans.

At the national level, most informants who participated in the case-studies felt that central level planning and budgeting were strong. There were differences between countries as to how strong these systems were at the district and subdistrict levels. Ghana has progressed the furthest in decentralization and on the basis of district level strength can now extend these functions into the subdistricts. The other countries range from Côte d'Ivoire and Kenya, which have central level problems, to the Philippines and Uganda, which have some district activity but a range of ability and experience.
By contrast, donors and technical assistants feel that the African region and low-income countries in Asia are weak in developing plans of action. Donors may have contributed to this by establishing short time-frames for support. While UNICEF has five-year plans of operation, the most important activities for planning and budgeting are reported to occur annually. Planning and implementing in this time horizon mitigate against activities that may require time to produce results, especially in adverse economic or political circumstances.

3. **Disease Surveillance and Information Systems**

The incidence of disease and death due to disease are recognized as better measurements of the impact of immunization programmes than coverage. Some argue that incidence of disease is the only adequate measurement of sustainability.

*So surveillance was really important, and unfortunately for a long time Geneva stuck with coverage as the indicator of performance rather than disease incidence...*

Surveillance is especially important in countries that have high coverage, because it is difficult to measure progress otherwise and because high coverage does not necessarily mean that disease will be prevented. However, in much of Africa and Asia, disease surveillance and information systems are weak and require strengthening in order to provide reliable data.

*The Gambia had very high coverage rates and probably one of the best EPI programmes, probably the best that could be achieved in Africa in many respects, and then you have this big epidemic, which spilled over from Senegal. And I think that was really scary because it showed that even high coverage, reasonably good coverage, in the 70-80 per cent range, wasn't going to take care of poliomyelitis.*

Surveillance provides information that lends itself to proving results and strengthening political support. In some ways preventing disease and death is more understandable and attention-gathering than coverage.

*Surveillance strengthens political support. An element of sustainability is perceived effectiveness. ...to have that kind of information showing a downward trend. If you have a big picture through surveillance it's quite a powerful advocacy tool. If you don't see a decrease you have to say why and change what you are doing.*

One of the real strengths of poliomyelitis eradication programmes in the Americas is the surveillance system. Proponents see sustaining the benefits of immunization by building on this system. They believe that surveillance encourages health workers to go out into communities and households, thereby providing better PHC. However, surveillance cannot be strengthened in a vacuum, and by tying it to a well-understood disease problem the road
to improved surveillance is more easily achieved. Hence the connection to poliomyelitis eradication and measles elimination goals.

*Call it a disease surveillance initiative, not a poliomyelitis eradication initiative.*

*History shows you can only build surveillance if you really have a problem you want to resolve, like what we did for smallpox eradication.*

While surveillance of disease is receiving much attention, programme managers were insistent that it was also important to continue to monitor coverage at the operational level. Managers need process indicators to better understand performance in shorter time-frames than are required for outcome measures. Managers must monitor inputs and how they are used, if only to ensure continuity of supply and support. This raises the issue of how to strengthen management information systems (MIS) in general.

MISs were weak and subject to problems with accuracy and reliability. The issue of MIS was sensitive in the different case-studies. This was partly influenced by political and donor interest in data and the way data were normally used by programme management.

4. **Decentralization**

Decentralization was a recurring theme in all case-study countries except the Lao People's Democratic Republic. Decentralization or devolution is official government policy for the other five countries and it is happening quickly, variably, and often without solid support systems in place at district level. National level interviews revealed considerable frustration with those in regional or global positions who complain that it is happening too fast and chaotically.

*Decentralization is taking place at a breathtaking pace ... We are talking about all the districts being decentralized by 1997 ... and there is a lot of talk at headquarters and other levels telling you, be careful ... be careful ... don't overdo this, you have to remain strong at the centre. I agree with all that, but there is no choice right now. It's not that UNICEF is somehow dragging its feet going to stop decentralization ... we're going to be out of the game ... I think this will be to the detriment of children.*

At the national level in Ghana, Kenya and Uganda, decentralization is perceived as positive by policy makers and district staff. Strengthening District Health Systems (SDHS) in Ghana has successfully used a 'middle-out' development approach, and has given districts autonomy in planning and management of resources. Districts in Uganda that were decentralized in phase 1 are now planning and budgeting with block grants, and the District Medical Officers (DMOs) feel they have better and more reliable access to resources.
The problem is that district health staff and political leaders often do not understand the true costs of almost any activity. Immunization is particularly difficult because donors have provided those items that are the most costly, such as vaccine. Furthermore, it is unclear what kind of allocation and what level of flexibility is desired within immunization or PHC budgets, in order to best manage programmes at the district level.

Central level programme managers and technical officers are less sure about decentralization. It involves changes in central level roles, authority and resource control, and is a possible threat to the quality and quantity of services. Given the need for consistent supply of vaccine and cold chain, it is critical that planning take place between the district and the centre, as well as at the district level.

Côte d'Ivoire has leaped into creating decentralized health districts, but there is no clear evidence that they know where they have landed. The transformation of *bases rurales* into districts is not well understood.

*Il faut que la décentralisation soit suivie par les textes qui donnent des pouvoirs aux responsables des districts. Mais c'est aussi un problème de culture parce que cela doit entrer dans les mentalités.*

The recent devolution in the Philippines has disrupted the health system so that its ability to maintain UCI has been questioned. People do not have confidence in LGUs (municipalities) to generate the resources required to operate the health system effectively. Of particular concern is the allocation of funds for travel and supervision. In these early days of devolution, a higher portion of funds are being spent on pharmaceuticals, depriving the local health system of resources.

The shortages of drugs in health centres was commonly reported as a major problem that influenced all health services. As part of decentralization nearly all countries have instituted cost sharing or cost recovery schemes (sometimes the H1) controlled by districts to partially resolve this problem. Regardless of nationality, mothers seem to know when a health centre has drugs and when it does not. This affects their decision whether to attend the facility. In Kenya, health centre staff reported much larger turnouts when supplies were on hand.

5. **Quality**

The quality of services was raised several times in the context of meeting prevention-of-disease goals, in creating demand in the community and in selecting the most appropriate service delivery strategies. Concerns with quality originated with the cold chain and potency of vaccine. However, studies in Nigeria and elsewhere have also documented other problems, such as with sterilization and health education. Improving the quality of immunization services is essential for sustaining them, from the perspective of maintaining demand among
mothers, and from the perspective of protecting the investment in all of the systems that get vaccine to children such that it is effective in preventing disease.

Then we went out and looked at it, and the training was having no impact on performance and then one started pushing continuing education and supervision.

6. Goals and Targets

The issue of goals and targets generated the most comment on the part of informants. Nearly all of those interviewed were familiar with the mid-decade and year 2000 goals. However, there were differences in perceptions of what goals are and how they are intended to be used, especially within UNICEF.

What I'm saying is that goals are part of our policy, that we are a goal-driven organization, and we set goals which everybody agrees are a moral minimum, things that everybody should work on: reducing infant mortality, halving malnutrition, having everybody go to school, get a basic education. ... A strategy for reducing mortality is to reach 80 per cent ORT use ... To me, the goal is mortality reduction; the strategy has to do with how you do it.

For others, goals are the 27 goals as stated at the World Summit for Children. They represent statements of what is to be achieved in all signatory countries.

They are the only globally recognized social targets in the world.

One of the real problems with targets and the 1995 and 2000 targets is that governments sort of see these as something to be achieved and they don't see this as something that's a long-term commitment to the health of the people.

Goals were felt to be advantageous from the perspective of providing a clear picture of what immunization activities are intended to achieve. A clear picture allows better planning and more effectively implemented programmes. Goals are not only important to those who deliver services, but they are essential to obtaining and maintaining the necessary resources.

Goals help mobilize resources. They are good fund-raising mechanisms for dealing with donors, and countries themselves found that it adds pressure to them to allocate internal resources.

They are political motivation tools.

The consensus was that it is important to have goals and targets since they make it possible to monitor and assess the progress of programmes; provide direction; challenge providers and communities to improve; and, most importantly, help gain and maintain the support of politicians and bureaucrats, which in turn makes funding more likely.
There are also problems with goals and targets which have to do with how they are established and how they are applied. These problems can provide barriers to sustainability and they can detract by focusing attention elsewhere. The credibility and technical basis for some individual goals were questioned by some informants. Decreasing the incidence of measles by 90 per cent, given the efficacy of the current vaccine, was felt to be not feasible. The goal to eliminate neonatal tetanus by 1995 was criticized.

There was more concern expressed about the mid-decade goals than about the year 2000 goals, even though they may help focus programme attention. Many were felt to be unrealistic in the time-frame specified.

*Mid-decade goals help keep your eye on the ball.*

*The mid-decade goals are not popular with USAID.*

*UNICEF is saying that they are committed to sustainable approaches. In terms of mid-decade goals they also are saying that these are just pacing goals, and that they really do not expect that most African countries will make that but the UNICEF country office said, "that might be New York, but that's not the field."*

Global goals are not set at the national level. They are perceived to come from global meetings on child survival such as those held at Talloires and Bellagio, and national commitment to them is sought from politicians who may or may not understand programmes. Participation in the process of goal-setting is critical to developing a sense of ownership and commitment, hence the processes of communication and adoption of goals at the national level are important.

*I was not terribly happy with the way the goals were set. This was done, I would say, in a very ad hoc manner... I think this was more of an evangelistic kind of approach than it was a sensible, scientific setting of objectives, and I found that very objectionable.*

*Even though countries have signed off on these, there's not real ownership by the people that are doing the work... because they didn't set them...If you really want to achieve sustained coverage and disease reduction, there's got to be ownership by those responsible.*

If goals are set in a more participatory process, it is likely that there will be differences between countries, especially given the range of development of health systems, geographical and economic constraints.
You have to have a kind of dynamism of having these goals come up from the bottom as well as being articulated at the top and encouraged at the other levels...you always need to allow latitude for the differences between countries, between continents.

These differences need to be understood and if sustainability is a concern, goals need to be set at reasonable levels in appropriate time-frames. The effects of a global goal on countries with different baseline immunization coverage and systems development are illustrated by what happened to coverage after 1990.

We have to be much more sophisticated about our goal setting process. ...In BPI, you have the Asia Region-take the case of the Philippines-that had a fairly long-standing, good programme that needed to be boosted, and so having a goal of 80 per cent coverage was probably a very beneficial thing for them. They could use their existing mechanisms to really strengthen their programme. But then you get to countries like, say, in Africa, that have the same goals, that were trying to go from 20 up to 80, and the only way they could have reached it within that time-frame was to set up an artificial system ... and it was predictable that after they reached those high levels, then there would be a regression back to what’s a more sustainable ‘eve’.

The biggest concern for applying global goals without adapting them was that by outrunning local capacity, future programmes would be compromised.

The worst thing we did was to set global targets. If you drive people to do things beyond their capacity you run the risk of a major backlash.

At the global and national levels there were concerns about the lack of process and strategy goals. There is a need to plan and monitor how goals are achieved, not just whether they are achieved. If sustainability is important, then indicators for process and trends would be recognized measures of success.

Put the emphasis on process, where it really belongs.

There are no benchmarks to measure how you get there.

It's critically important how you did it and not just that you did it.

I would spend a lot more time ensuring that countries have plans. Plans which have got a do Oar value on them, you know, plans on how to go about things rather than wondering whether or not the goals are achievable.

On the other hand, to be effective in developing political and resource support, goals need to be simple and understandable. Process goals are difficult for those outside the process to understand, and they are less exciting.
It's a lot more difficult to sell the concept of development than the concept of disease eradication or a target reached. You either invest in that process or you invest in raising coverage.

Sustainability is going to be a much tougher sell than getting coverage rates up was.

Overemphasis on goals and targets can lead to incorrect reporting and manipulation of data for purposes other than programme improvement. The greatest frustration was expressed at the country level. During the UCI initiative, as the end of 1990 approached, pressure to achieve 80 per cent was reported to be intense. Eighty per cent achieved an 'all or nothing' connotation, which created difficult situations for both programme managers and donors.

Goals get everyone singing the same hymn, but that doesn’t acknowledge or recognize the different capacities of different countries. So countries either cook their data or they get embarrassed because they don’t hit the targets.

The reports in the end were somewhat fabricated, probably only in the range of 10 to 15 per cent. I mean, the country surveys that were done, some of the sites got out and you could actually run your finger across the vaccination curves and the ink was still wet.

The magnitude of over reporting during UCI will never be clear because of the lack of precision of measuring tools and because there are too many unknowns, such as under reporting, mathematical errors and poor population projections. However, there is an inconsistency in the demands for precision placed on countries and districts by the global level (and these are reflected in evaluation after evaluation) and the standards to which the global level holds itself.

Global goals can be improved if some changes are made. Changes suggested include: their primary purpose should be defined to provide information for programme improvement where it counts the most—where children receive vaccinations; they need to be set by countries and perhaps regions rather than being imposed from the national level or by an external agency; they need to be measurable from a technical and practical standpoint; they should not be applied as one-time judgements of national or personal performance but should serve as aims intended to assist in programme improvement; and they should allow latitude for strategies that are designed locally.

The goal of UCI was felt to be useful. The mid-decade and year 2000 goals were felt to be less useful and distracted from the process of planning and setting priorities. This is because there are too many, covering too broad a range of issues, and because some are not technically sound. The mid-decade goals are especially troublesome, and with the possible exception of increasing coverage, many were not felt to be feasible for the African case-study
countries and the Lao People's Democratic Republic.

With the exception of eradication of disease, which by definition is sustainable, there are no goal statements for sustainability or its component parts. This gap, combined with the decrease in donor inputs and rhetoric for sustainability, created an atmosphere of cynicism during discussions with national managers. There is felt to be a difference between the commitments of politicians in global meetings to goals and the understanding of what can be achieved by those who work day to day to implement services.

Community and individual demand for immunization and other services was identified as perhaps the most critical factor contributing to sustainability. This was especially true in older, more established programmes, such as in Ghana and the Philippines. Why is community demand important?

*The intervention needs to be at the political level but eventually it needs to be accepted and internalized at a cultural level.*

*The sociocultural dimension, the demand for services built into the culture of the system, is essential for immunization to go forward.*

The most commonly reported mechanisms used for increasing demand were 'social mobilization' and 'community participation'. In practice, these terms were used vaguely to mean many different things. The following are definitions provided by one UNICEF informant.

*The demand I've come up with has these three definitions: advocacy, social mobilization, and programme communication. Advocacy is basically what we do through our information-public affairs work ...to generate political and social win, I would say, or commitment. ...Whereas social mobilization, if we could please just define it as partnership-building ...at any level. You could mean community level but most of our activities are, what we can do, UNICEF, is getting the partners in place that makes it more than just a technical programme of one ministry. It becomes more of a social movement. And programme communication is what we can the science of communication; that is, actually looking at target audiences, attitudes, doing much more scientific communication based on research. Now, all of this is necessary, I think, for sustainable behavioural change, too. This begins the process.*
1. **Social Mobilization**

Most social mobilization involved building partnerships and bringing political will to bear upon a problem. Social mobilization was used to increase intersectoral collaboration by building ties to NGOs and government agencies outside of health. During the period leading up to UCI, social mobilization was strongly associated with campaigns and the use of television and radio.

*That portion was often delegated to UNICEF by WHO, and it was interpreted as mobilizing for campaigns.*

While informants recognize that it is applied more widely and continues in programmes today, they also think that it waxes and wanes, and, as with political will, needs rejuvenation. This raises the question of how long do the effects of social mobilization last?

*Because you know, when you use social mobilization techniques you have to repeat them periodically.*

To illustrate the difficulty in assessing the relationship between social mobilization and sustainability, most agencies engaged in related activities see the issues differently. For example, informants from UNICEF reported that all USAID does is social mobilization, while USAID staff think their programmes are aimed at programme communication and behaviour change. Meanwhile, USAID staff think UNICEF is engaged only in advocacy, while UNICEF considers that it is using mobilization to build partnerships. Yet other bilateral donors are not concerned with social mobilization at all, but point to community participation as the real factor for sustaining immunization.

*Social mobilization is different from community participation. It creates and sensitizes communities to the possibilities that exist, but it doesn't really move the communities to take charge.*

The interest in 'taking charge' links demand to ownership and commitment, although in this case the community is the reference rather than the government. This raises the issue of whether social mobilization is aggressive and persuades or simply sensitizes people to immunization at any of the levels of communication defined by UNICEF. Some of the debate over UCI and the way that programmes were pushed comes from this issue. The most extreme example may have been Somalia, where the army was used to mobilize mothers.

*Social mobilization is persuasion of those we wish to influence to carry out a behaviour that we think is good for them.*
In the six country case-studies, most efforts were reported to have gone into social mobilization and far less into programme communication. The one exception is the Philippines, where community-based research has been carried out and used. In Africa, much effort has gone into the development of district and community-based health committees, although this has been a result more of decentralization than of social mobilization. In Ghana and Kenya, social mobilization and demand for immunization services are felt to be higher in those areas that have implemented BI-type activities. This seems to be an area where the NGOs are making considerable effort.

The important issues are: 1) the time of field visits; we should go when all the mothers are in the village, e.g., early in the morning or later in the evening; 2) the issue of the token fees which are collected may be a major deterrent which makes the mothers not come for immunization; and 3) having the vehicles and fuel that will allow the field worker to visit the field regularly.

In Uganda, social mobilization is closely connected with the political system (Resistance Councils) that was established after years of unrest. Some national level NGOs, such as the Red Cross, are used to train Resistance Councils and health committees to mobilize communities for immunization. However, mobilization means that communities were informed and encouraged to turn up at outreach sessions or static units on the appropriate day at the appropriate time, and there was little indication of participation beyond this point.

As a new and only recently accelerated programme, the Lao People's Democratic Republic's EPI is an example in which little attention has been paid to the demand side of the effort. While education materials have been prepared, the message does not seem to have been grasped by all members of the community. There was mention of the fact that minority populations, who make up almost a third of the population, are difficult to convince to participate in immunization programmes. No formative research has been carried out among any group in the Lao People's Democratic Republic to determine attitude, beliefs and practices regarding immunization.

In Kenya, there has been extensive use of the media and area-specific studies of cultural and community attitudes towards immunization. Yet interest and commitment to community empowerment are not very high among central and district level health staff. Participation is desired in the form of assisting with transportation and allocation of cost-sharing funds for consumables. However, awareness of immunization and demand for preventive services would appear to be extremely high among mothers. It was not clear during this review how this level of awareness was developed or is maintained.

2. Community Participation

For UNICEF, community participation can be an outgrowth of building political will and
partnerships through social mobilization. Since UNICEF works at the national scale in immunization, this part of demand is usually left to other organizations, especially NGOs.

From our point of view, community participation is a function of the communities themselves developing an understanding of what it is that can improve the conditions within the communities, and then to be driven by the desire to alter the conditions that tend to prevail. It's also the communities themselves being able to create a vision of their own health.

Community participation is the stated ideal, but nurturing and encouraging it takes inputs and a change in the way immunization programmes are negotiated and funded. Working with communities takes time and a willingness to wait for local decision-making processes to evolve. This may conflict with time-driven goals to show results.

You don't have the time in some respect for community needs to emerge and evolve.

The changes we want take generations, and 5 or 10 years is too short a period of time. I was really humbled. I went to a training course recently and they said SONY Corporation had a 250-year strategic plan.

A number of different sources also talked about the interests of government in community participation. Governments seem willing to have communities take on cost sharing but are less willing really to relinquish management and authority over health services. This is exacerbated by the tendency of most health care providers to be experts who tell people what to do. Health services were not seen to be particularly democratic.

And after they create a vision of their own health, to be able to do something about it. It's shifting from being at the effect of a myriad of circumstances to having some control over circumstances in which they happen to be in .... Now that in itself is a critical issue at the development level because politicians are not too interested in communities developing a sense of their own power.

Governments don't mind social mobilization; they don't particularly like community participation.

Governments have also been known to think of the community as the answer to problems such as declining funds. They are willing to encourage cost sharing, volunteer community health workers, and other community activities, but without the investments necessary to make them work.

It has been clear that the community is the key. However, governments like to hear that, because they think that means they will do nothing, which again is a pity.
3. Communities and Cost Sharing

Cost sharing or cost recovery programmes in communities were often cited as concrete examples of community participation. The BI is the most clearly recognized effort in this area, especially in Africa. Cost sharing mechanisms are most often used to re supply drugs and consumables in health clinics. Funds might also be used for facility improvements and staff welfare (allowances and transport). Funds are not usually collected for child immunizations in order to minimize barriers for the poor, and in some countries this is enforced through policy and law. Funds are collected for prescriptions, treatments and clinic visits which are curative in nature.

The idea of cost sharing was strongly identified by both country and central level interviews as essential for sustaining any type of PHC. Policy makers, managers, providers and community members recognize that funds can be collected and spent appropriately with community-based, transparent control mechanisms in place. Cost sharing is perceived to be more reliable and timely than government support, and was reported to be the most practical mechanism for increasing community participation. It is seen by some as a major solution to the financial problems of decreasing donor funding for immunization, although existing cost data does not support this perception.

At the national level, many informants were specific about where they would like to see increased community contribution (in cash or in kind) to counteract decreases in donor funding. These include staff welfare, fuel for transport, and per diems. These are perceived as line items that, even if they are provided for in government budgets, will not necessarily be released to where they are needed most.

Cost sharing has increased the availability and accessibility of drugs in health facilities, and this was reported to directly influence utilization of services, including immunizations. Mothers are more likely to bring their children to health centres that are adequately staffed and supplied. Informants with experience in working with facilities noted that drugs allow for treatment of common conditions, which means that workers can respond to community expectations for health care. The process for collecting and controlling these funds, which is often done through community-health worker committees, can be a building block for community management of health. The success of these committees varies greatly from community to community and from country to country, but there is some understanding of what is needed to make them work well.

There are important gaps in information and understanding that need to be filled to harness cost sharing to the goal of sustainability. These include: what inputs are required to make cost sharing work; what cash or in-kind contribution can realistically be made; and what is needed to negotiate support for immunization as part of a package of desired services. Practical evaluations of the BI and other programmes may not be discussed and
communicated widely enough to guide efforts in immunization to build sustainability.

Cost sharing. To see it as a way of raising sufficient revenue to pay for the recurrent cost of quality service, it seems to me nonsense.

4. Creating Demand

How is active demand for immunization created in the community? How was demand created during the implementation of UCI? UCI was effective in bringing services to the community, in increasing access and acceptability. There was perhaps less thought about how those services would need to change in order to continue over a generation, as access and acceptability evolved. In some cases, the problem since UCI has been one of credibility with communities, especially in places where systems infrastructure was always weak. Has emphasis on short-term acceleration, and the subsequent failure to maintain high levels of service as funds declined or interests were broadened, undermined the credibility and trust with communities that is required for long-term partnerships?

We immunized six-month- to five-year-olds...the first village I went into...I got there at 6:00 in the morning...there were 6,000 people in line....you could get 90, 95, 97 per cent coverage. The real tragedy of this success is that people feared measles, and you taught mothers that the health system could do something about it and that their children wouldn't die of measles, and then you essentially violated that trust...that's happened over the last 25 years at least three or four times.
VI. Discussion

Universal Child Immunization was the most visible and influential public health initiative of the late 1980s. In these studies there were those who called it 'just a slogan' and others who called it 'a near miracle'. UCI has its detractors and champions at global and national levels, but it prevented a remarkable amount of disease and death in children. UCI was viewed as a vision championed by UNICEF with considerable resources, both tangible and intangible, behind it.

In the original study design, UCI was thought to be of pivotal importance in understanding the six country cases. Country experience with UCI formed the basis for all current programmes, but it was more prominent in today's decision-making in some countries than in others. The prominence of UCI depended on institutional memory within the EPI programme and the ministry of health; the level to which goals and objectives were shared and agreed to by donors and national governments; the sense of ownership felt by the national health system for the immunization programme; and the openness of the atmosphere in which information, especially coverage data, were assessed and used. Most of the informants interviewed were more concerned with the present than with UCI, and they tended to respond in terms of current problems. The lessons learned from UCI were considered useful but not necessarily relevant to the most pressing decisions, primarily because of significant change in external donor resources and global priorities.

1. What did UCI mean to the development and sustainability of immunization and other health programmes?

A. UCI demonstrated that high levels of immunization coverage of children could be accomplished almost anywhere. If it can be done once, it is at least possible to sustain coverage given the right circumstances. The focus now is to turn this possibility into a high probability.

B. UCI demonstrated that ministries of health could deliver services widely, and that the periphery could be reached. In all case-study countries, EPI led the extension of primary health care services. The focus now is to deliver the full package of primary health care services continuously and consistently to all populations.

C. UCI demonstrated the power of political will in supporting a preventive service for children. Mobilization of politicians and, by extension, government workers and social leaders, contributed credibility and resource support to immunization programmes. The focus now is to maintain commitment at high levels in order to increase tangible support.

D. UCI demonstrated that there were differences of opinion at global, national, district and community levels as to how it was to be accomplished. Global opinions prevailed. Now the
focus is to arrive at balanced agreements for nations, beginning with communities, then districts and centres, as to how immunization should be improved. Communities and districts should be informed and their opinions should prevail.

2. What influences sustainability?

A combination of supply and demand factors act through a web of interlinkages to influence sustainability. No single factor guarantees sustainability. Changes in one factor have an impact throughout the web. Thus, decisions on what and how much to change to make immunization more sustainable require detailed planning and time, with consideration of all factors of the web in national contexts.

The current state of technology of vaccines, the technical and economic mechanisms for ensuring production, and research for development of new or improved vaccines constrain current immunization programmes. For example, service delivery strategies had to be designed to take into account limitations in heat stability and the need for series of vaccinations to produce immunity. Similarly, ensuring vaccine supply at the country level has been dependent on investment in production and tiered pricing. Investment in research for new vaccines of limited use in developed countries is difficult to maintain. Countries and organizations which fund and implement immunization programmes all work within these technological and economic boundaries.

The internal structures, leadership, mandates, advocacy and fund-raising activities of donor organizations have an important influence on sustainability of country programmes. Leadership within donor organizations influences internal operations and approaches taken in countries. All donor organizations have mandates that determine the scope and content of their work. Mandates form the boundaries in which donor agencies work, and they are used to justify the focus and emphasis of what will be supported in countries. A mandate for sustainability exists in many organizations, but there was little agreement about what it means and the mechanisms believed to be necessary to attain it.

I don’t know that sustainability of these types of activities is a clear objective for UNICEF. Because I think if it was, they would be operating in a different way.
All donor agencies see themselves as advocates for people, programmes and policies. UNICEF sees itself as the principal global advocate for children. Prior to 1990 and since, UNICEF has pushed strongly for national governments to rapidly and intensively expand immunization programmes. At times this advocacy introduced conflicts which undermined the development of local ownership and commitment, both key elements of sustainability.

And until we are allowed to ask questions and examine things objectively and discuss them. Every agency has its problems. It's not that we're going to find that one agency is so bad. Every government has its own problems, so we ought to be able to have them out on the table and look at them and say, how are we going to overcome the problems of the poorest countries in the world by working together? And if we don't do that, then they're not going to get sustainability.

Well-publicized, easily understood initiatives such as UCI and polio eradication have been particularly effective in directing resources into immunization. However, they may cause imbalances in the development of health systems in countries if other priority programmes do not receive adequate resources.

Financing issues were identified the most frequently in relation to sustainability. They included the amount of funding provided to countries, the consistency, timeliness and reliability of funding, and the degree of conditionality on the funds provided. The process of external funding affects the national sense of ownership and ability to plan for the long term. The degree of flexibility and locus of control of funds affects systems development, including operational costs and vaccine procurement.

The level of external donor funding provided affects the ability of the government system to maintain coverage. Donor funding for immunization peaked in 1990 and has declined, except where poliomyelitis eradication efforts are being undertaken. Various cost studies have indicated that there are countries which cannot afford, currently or in the medium term, to fully immunize all their children. Yet there is not always donor recognition of these realities.

The source of funds strongly influences the development of ownership and commitment to immunization programmes. During UCI, programmes were developed with

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heavy external resource support and were felt to be donor-driven. External funds provided costs of training, per diems for outreach, supervision and social mobilization, and these activities are now difficult to maintain because local ownership and the funding that would follow strong commitment by the government have not always materialized.

The procurement of vaccine is a key focus of donors and governments for phaseover to government responsibility at this time. This will help to ensure one critical input, but does not address the equally critical availability of operational funds for reaching children. The funds needed for supervision and transport are declining as donors withdraw funding and governments and communities fail to take them over. This has decreased outreach and undermined credibility, decreasing coverage in some places for the short term.

At the national level, coordination among donors and governments influences how EPI programmes are funded, designed and implemented. Donor coordination was reported to be poor, resulting in inefficiency in many instances. In those countries where governments have taken strong leadership roles in coordinating committees and resource prioritization, immunization has been more likely to be sustained or improved. The weakest and poorest countries are those in which donors have greatest influence, and yet these countries' ability to coordinate donors is often least developed. Coordination itself requires strong leadership and adequate resources of time, personnel and finance.

Political and Administration

The level of development of the economy, political stability and physical security within countries affect sustainability and are usually beyond the control of health programmes. When political and administrative systems are more developed, countries are better able to utilize technical and resource inputs to improve outcomes.

The development and maintenance of political will at the highest levels was a hallmark of UNICEF and UCI, and has continued to be an important factor for sustaining immunization. Mobilization of politicians and, by extension, government workers and social leaders, helps to provide credibility and resources to immunization. However, the influence of political will may be limited by the context of the absolute level of resources in a country and the systems in place to use resources efficiently. Political will can also affect sustainability negatively, especially when it becomes singularly associated with one form of government or a particular political group.

Government financial systems were reported to be inefficient, wasteful and subject to manipulation. Even when they functioned adequately, restrictive rules and regulations make it difficult to undertake some activities important to generating long-term support for
immunization. The lack of transparency of government accounting and reporting systems, especially at the central level, was also identified as a problem. Donors have responded by establishing mechanisms that go around central government systems to deliver funds closer to the point of implementation. While this was a common practice, it favours short-term results over maintenance of benefits for the long term, since these mechanisms are not built into the systems that must take responsibility for continuing coverage.

Three themes within the structure of the health system were reported to be related to sustainability, especially after 1990. They are the service delivery strategies employed, integration of programmes, and the working relationship between the public and private health services sectors.

Services have been delivered in a variety of ways in all countries. Some respondents maintained that the campaigns which characterized UCI helped to push services out to the periphery and to revitalize PHC systems. Others stated that campaigns had no lasting impact and at worst were used as tools for individual career advancement. Reports of problems with campaigns generally outweighed reports of advantages. For example, single campaigns or series of campaigns for one year only were described as irresponsible unless plans with guarantees for finances for follow-up activities were made. During campaigns, extra resources such as incentive payments to health workers and communities were given, creating disillusionment when they could not be sustained. Campaigns were implemented quickly in pursuit of targets, and often outran the development of essential supply and maintenance systems, causing substantial inefficiency. Respondents reported that these unsustainable approaches from the 1980s must be avoided in the 1990s. Virtually all who were interviewed agreed that over the long run, sustainability of immunization services and the expansion of primary care would best occur in the setting of fixed health centres with outreach activities.

The next six years, hold what you've got and consolidate your gains and address system issues that are going to be necessary to maintain that. It would make a lot more sense than to continue to try to push them up a coverage ladder which is getting shakier and shakier all the time, because it just means that the crash is going to be bigger.

In principle, integration of maternal and child health services is a common theme for health systems in developing countries. The general perception among those interviewed is that integrated services are more sustainable than single focus services, especially at the community level. Community demand is linked to the availability of other services, particularly drugs, at health facilities.
Some informants argued that polio eradication could be used in the same way that EPI was used as an important mechanism for building PHC systems in developing countries. While this is a possible scenario for health system evolution, many other informants felt it conflicts with national ownership and commitment to programmes, particularly at a time when donor resources for EPI are declining and countries are being charged with the task of sustaining coverage.

The role of the private sector, and relationships between the public and private sector for immunization services, were identified by informants as poorly addressed to date but increasingly important issues for sustainability.

Operational elements of the health care delivery system which had the most important influence on sustainability were decentralization, goals and targets, disease surveillance and long-term planning.

The capacity of nations and districts to plan is essential for sustaining immunization. This was a hallmark of successful programmes in the Latin American region. However, planning and implementing in a two- or three-year donor-imposed time horizon can undermine adoption of strategies and approaches required to produce sustained results.

Decentralization or devolution was a recurring theme for all countries. It is happening quickly, variably and often without solid support systems in place at district level. It is perceived to be positive for sustainability because it enables planning and management of resources to take place more efficiently, effectively and closer to beneficiaries. However, in the short term it has disrupted the delivery of immunization services because of shortages of drugs in health centres, lack of funds for supervision and transport, lack of local expertise in financial management, and confusion over roles and responsibilities. Effective decentralization requires time and support, and to evaluate its impact on immunization programmes and health systems will similarly require a long time-frame.

The incidence of disease and of death due to immunizable disease are recognized as better measurements of the impact of immunization programmes than coverage. Some argued that incidence of disease is the only adequate measure of sustainability. However, in much of Africa and Asia, disease surveillance is weak and is felt to provide insufficient information for programme management purposes.
The issue area of goals and targets generated the most comment during the review. The consensus was that it is important to have goals and targets since they make it possible to monitor and assess the progress of programmes, provide direction, challenge providers and communities to improve, and, most importantly, help gain and maintain the support of politicians and bureaucrats, which in turn makes funding more likely. However, goal- and target-setting were a double-edged sword. The global pressure to achieve UCI sometimes resulted in short-sighted decisions that were based on meeting a specific 1990 target but with little thought given to whether these results could be sustained in the ensuing year. Overemphasis on goals and targets was reported to have contributed to incorrect reporting and manipulation of data for political purposes in some countries. Great frustration was expressed at the country level, especially during the time the target date of 1990 approached, when reported achievement of 80 per cent coverage was perceived by some as an all-or-nothing proposition.

Well, if we continue to go the way we’ve gone up to 1990, then -- I hate to say this, but it’ll take a reversal of UNICEF from this enlightened policy back to their old ways.... If we want the number, then we’re going to have to go back and provide vaccines to countries.

There are major differences among countries that need to be taken into account to set goals at reasonable levels in appropriate time-frames. The biggest concern for applying global goals without adapting them locally was that by outrunning local capacity in the short term, failures for the medium term were more likely. In some places, failure to achieve or sustain UCI was reported to have created an atmosphere of distrust of the service provision system that has been difficult to change.

There is a critical need to plan and monitor how goals are achieved, not just that they are achieved. At the global and national levels, concerns were raised about the lack of process and strategy objectives and indicators. Indicators for measuring sustainability in terms of process and trends are needed.

Community and individual demand for immunization and other services was identified as a critical factor contributing to sustainability. Social mobilization has been the most common activity used to increase demand. It has increased intersectoral collaboration by building ties to NGOs and government agencies outside of health. This brought resources and people together in the pursuit of one goal-immunizing children. Community participation is the stated ideal, but little actual investment in its development through immunization programmes was described.
Working with communities takes time and a willingness to wait for local decision-making processes to evolve. This has conflicted with time-driven goals to show results.

The idea of cost sharing by the community was identified as essential for sustaining any type of PHC. Some informants saw this as a major potential contribution to solving the financial problems of decreasing donor or government funding for immunization, even though cost data suggests that this is unrealistic. There are important gaps in understanding among many programme managers, donors and policy makers about what inputs are required to make cost sharing work, what cash or in-kind contribution can realistically be made, and what is needed to negotiate support for immunization as part of a package of desired services. Furthermore, there is even less understanding about other aspects of the potential of cost sharing, such as giving local people control over resources, increasing morale and increasing the accountability of health services to local communities. Practical evaluations of the BI and other programmes may not be discussed and communicated widely.

VII. Recommendations

The following recommendations address the terms of reference of this review and are concerned with UNICEF's role in the area of sustainability of immunization. However, many of the recommendations are equally applicable to other donor agencies and their counterparts in governments. The Steering Committee chose to limit the number of principal recommendations to the six that would have the greatest impact.

These recommendations build on UNICEF's dramatic accomplishments and highlight strategies that might better guarantee that gains in the immunization arena will be continued and used as starting points for more comprehensive primary health care. The Committee recognizes that there are conditions, such as wars and natural disasters, which influence immunization programmes and which are beyond the control of any agency.

1. **UNICEF must vigorously maintain its role as a global advocate for improving the lives and health of all children and women**

UNICEF has played a crucial role in raising political consciousness concerning the status of children and women. No other international institution is likely to assume this responsibility, on this scale, in the near future. UNICEF must continue to use its influence to maintain a constant focus on the rights of all children and women to receive basic, effective health services such as immunizations. UNICEF must continue to champion the premise that there is a global responsibility for ensuring adequate resources for immunizations for every mother and child.
2. UNICEF should explicitly emphasize the importance of sustainability in its programmes by developing and using process indicators that monitor critical elements of immunization programmes in the context of health systems development.

For immunization to be sustained, UNICEF must revisit how services are to be delivered in perpetuity, and what types of indicators are appropriate to guarantee that progress is being made or success is being maintained. The lessons learned from this review may be used to generate process indicators with regional or country offices such that programmes are designed and implemented using strategies or principles that contribute to sustainability. For example, since effective donor coordination with strong government leadership is more likely to be associated with sustainability, what can UNICEF programmes do to facilitate its development and measure its progress in country programmes?

The output and outcome indicators that have been used for immunization, such as coverage and disease incidence, are essential to monitor impact. However, as experience is gained in using process indicators, the connections between process and outcome must also be assessed. This will assist in refining those process indicators that are the most useful measures of a continuous and effective immunization system.

3. UNICEF, through its country programme partnerships, should commit to long-term planning for the consistent and coordinated maintenance of inputs, service delivery and support systems, and outputs.

Long-term commitments and coordination to national plans of action for immunization as part of the basic package of primary health care are needed. Partnerships with countries, particularly the least developed, may require an evolution of strategies that take 10 to 20 years. UNICEF should use its influence to ensure that governments have reliable, consistent inputs over a long period in order to plan and implement appropriately designed programmes, including developing sustainable vaccine procurement systems, effective training and supervision, and ensuring that the recurrent costs of vaccination programmes can be met. Effective donor coordination at country level is essential, and UNICEF needs to facilitate the active leadership of national governments in coordinating bodies. In terms of meeting the needs of children, the concept of 'good' donors should be as powerful as that of 'good' governments.

4. UNICEF should support major changes in the evolution of health systems such as decentralization, supply of essential drugs, and cost sharing.

Major changes are occurring in the locus of control of immunization activities. Decentralization is being vigorously pursued in many countries, but the managerial skills required for an effective shift in the locus of control of immunization services may not yet be
present. It is unlikely that the speed of decentralization will be slowed, and plans and programmes must incorporate the strengthening of local capacity and systems as soon as possible. Part of this strengthening may be assisting central levels to find and fulfill useful policy-setting, supply and support roles.

The ability to manage routine immunization services is vital to sustainability, particularly as decentralization occurs and disease control activities become more active. In Africa, especially at the district level, countries may need support for human resource development plans which include basic training, refresher training (based on assessment of specific skills that need improving), career development, methods for monitoring staff placement and performance, and supportive supervision.

The routine use of immunization services is linked with the public’s perception of the availability and quality of curative services. For example, availability of drugs was reported to be a major determinant of the utilization of immunization services at health centres. More generally, cost sharing programmes are being instituted to improve service utilization through community participation and resource support. While these programmes are still evolving, community financing efforts such as the Bamako Initiative offer UNICEF immunization programme planners real possibilities for linking the strengths of one programme to support another. More explicit integration of initiatives and studies of the results may be in order.

5. UNICEF should ensure accountability among all partners, at all levels, by monitoring performance, using high-quality data.

If programme and funding decisions are to be based on country-specific immunization coverage data, UNICEF, WHO and other donors need an efficient and effective mechanism of ensuring accuracy and comparability between various data sets. Despite the fact that UNICEF has invested considerable human and financial resources in this effort, coverage figures at UNICEF/New York and WHO/Geneva differed considerably. As shown by country case-studies, data from both global agency data sets often differed from that used most frequently by programme managers. Coverage data are fraught with differences and errors in estimates that begin in the field and are multiplied as they move up the system. Coverage surveys are thought to provide more accurate data, but they must be well designed, conducted and interpreted, which has not always been the case. Their role in establishing country-specific rates and, most importantly for sustainability, trends, is still unclear and should be resolved. In part, problems with coverage data are a result of insufficient understanding or focus on how the data are used for programme management and improvement. In part, such problems are a result of overemphasis on particular targets rather than on the process of continuous improvement.

Targets have played an important role as benchmarks to assess progress. They have also been used as political tools for organizational support and mobilizing resources.
However, when targets have been set at unrealistically high levels, they have led to the development of unsustainable immunization strategies and the manipulation of data. When their political use has taken precedence over their use in managing programmes, they have deterred effective critical assessment. Immunization targets should be ambitious but attainable, while reporting them may be politically necessary, care should be taken to maintain sight of their most important purpose—improve services to mothers and children.

When targets and data are used for improvement in an atmosphere that encourages problem-solving and innovation, the value of the human resources that deliver immunization may be better brought to bear on sustaining it. Addressing problems of data quality and the use of targets should be important priorities for UNICEF, WHO and countries.

6. **UNICEF should ensure that specific disease control goals and strategies, most urgently those of poliomyelitis eradication and NIDs, contribute to sustaining all immunization services and are not artificially separated.**

Poliomyelitis eradication appears to be well on its way and deserves strong support from UNICEF. Several key international organizations and many countries are heavily invested in promoting its attainment. For eradication to be feasible by the year 2000, regardless of underlying coverage, NIDs or subnational days for children under five years will have to begin in many countries by 1997. This strategy will pose serious problems for some countries, especially those with low immunization coverage rates. Nonetheless, the potential for eliminating an important cause of human misery is an attractive opportunity. The contribution which eradication activities will make to sustainability of immunization will depend on how they are carried out. This is where UNICEF should play a leading role, by brokering and insisting on country-level adaptations that will best serve the long-term sustainability of all aspects of immunization programmes.

The pressure to establish purely vertical poliomyelitis eradication programmes will be great. However, these efforts must not neglect the burden of death and suffering from other diseases preventable by immunization, especially measles, neonatal tetanus and hepatitis B. In countries with less-developed infrastructure and capacity, UNICEF should be prepared to insist that there be multiple antigen NIDs. UNICEF should also work to assure appropriate levels of donor support for eradication-specific activities and for the opportunity costs of eradication to health systems development. The process used for eradication should not weaken health systems by paying unrealistically high per diems or setting up parallel reporting systems. In some countries, NIDs will have to be maintained for eight to ten years to achieve complete eradication. Donor support for this length of time must be ensured, and scarce country resources should not be shifted from ongoing immunization efforts that are maintaining or improving coverage.
The most important challenge to UNICEF is how best to use these efforts to ensure concurrent support to infrastructure and system capacity development in health systems. This will require commitment on the part of those vested in poliomyelitis eradication to help achieve and sustain broader immunization goals of countries. UNICEF might undertake this challenge by assessing current country programmes with counterparts to identify areas of overlap and possible reinforcement between eradication programmes and immunization systems. Furthermore, UNICEF could facilitate planning exercises that give donors and governments the opportunity to sort out and leverage resources to accomplish the greatest good in the most efficient way. If UNICEF is able to focus attention on this now-proactively—there are more likely to be eradication activities that contribute to sustained immunization.

The Steering Committee for Lessons Learned on Sustainability for Child Immunization believes that a great deal has been accomplished and learned through UNICEF’s efforts over the past decade. The challenge now is to build on these achievements so that the children born in the 21st century will reap the full benefits of this experience.

*We need an honest commitment on the part of donors to recognize that there are certain basic rights of a child for immunization … and that there needs to be a long-term international commitment to immunization.*
ANNEXES

ANNEX A: TERMS OF REFERENCE
ANNEX B: REFERENCES
ANNEX C: DATA COLLECTION INSTRUMENT
ANNEX D: COUNTRY REPORTS

The Evaluation and Research Office, UNICEF New York, will provide photocopies of these annexes to interested readers upon request.