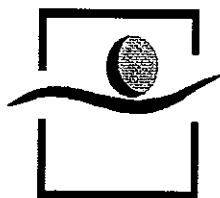


MOROCCO

**30 Years of Collaboration Between
USAID and the Ministry of Health**

A Retrospective Analysis

Child Survival



PN-ACP-902

Morocco

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AND THE MINISTRY OF HEALTH**

A RETROSPECTIVE ANALYSIS

Child Survival

**USAID/Morocco
Morocco Ministry of Health**

**MEASURE *Evaluation*/Tulane University
USAID Cooperative Agreement no. HRN-A-00-97-00018-00**

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- STI/HIV/AIDS – Ms. Lisa Manhart

The opinions expressed are those of the authors and do not necessarily reflect the views of USAID.

OVERVIEW OF THE RETROSPECTIVE ANALYSIS

Purpose of the Series of Reports

This series of four reports details the productive collaboration between the United States Agency for International Development (USAID) and the Moroccan Ministry of Health (MOH) spanning a period of over 30 years. It focuses on four health areas in which USAID support has been the greatest: family planning, child survival, safe motherhood, and sexually transmitted infections (STIs)/HIV/AIDS.

Morocco has made tremendous strides in its health programs, as evidenced by steadily improving health outcomes over time. In part because of this success, USAID began a strategy of “withdrawal” from Morocco, which was slated to begin in the year 2000. Subsequently USAID decided to maintain a modest level of funding through 2004 to support the activities of a “mature program,” including sustainability and decentralization.

What was accomplished during the more than thirty years of collaboration between the MOH and USAID? This series of reports is designed to address that question. The specific objectives of this retrospective analysis are:

1. To document the evolution of the programs in family planning, child survival, safe motherhood, and sexually transmitted infection/AIDS under the Ministry of Public Health (MOH) – USAID collaboration;
2. To place the health initiatives in Morocco in a larger international context as a means of better understanding the evolution of programs in Morocco;
3. To present measurable results in health status indicators that link directly to these health initiatives;
4. To identify keys to the success of specific programs that may represent valuable lessons learned for programs in other countries;and
5. To recognize the past obstacles and continuing challenges to the implementation of health programs in the four areas.

Many factors contributed to improvements in health status in Morocco over the past three decades: improvements in socio-economic conditions, exposure to ideas from other countries, investments from other donors, among other factors. Whereas this series of reports focus almost exclusively on the MOH-USAID collaboration, other factors and other parties share in the credit for the progress made to date. Notwithstanding, this series of reports has been prepared to demonstrate the sustained investment by USAID in the Moroccan health programs and the results achieved to date.

The current report covers the period from the early 1965 (when family planning first surfaced as a concern) to 2000, when Phase V funding ended. USAID continues to provide bilateral support to the MOH through an agreement (Assistance for Family Planning and Maternal-Child Health, Accord 608-0223) that aims at expanding the resource base and capacity for

sustainable development in the period 1999-2005, but the current activities are outside the scope of this retrospective analysis of the Moroccan program.

Audience for this Series of Reports

This series provides a comprehensive overview of the major events that occurred in relation to the four health areas in question. It will serve as a reference to MOH personnel, donor agency staff, international visitors, academics, and others with the patience and appetite for a relatively detailed account.

Methodology

A team of MEASURE *Evaluation* staff and independent consultants conducted the analysis for this series of reports. Team members conducted in-depth interviews with key informants and reviewed relevant program documents. The purposive sample of key informants included the following:

- Persons with substantial experience in the management of some aspect of the four health program areas;
- Personnel from both the central and regional/provincial level;
- Personnel from both the public and private sector;
- Personnel from non-governmental organizations (NGOs);
- Representatives of donor agencies; and
- Persons outside the program (researchers, economists, sociologists, demographers).

A complete list of all persons interviewed appears in Appendix A.

Limitations

The team encountered several constraints in conducting this retrospective analysis. First, all of the in-depth interviews — especially those relating to events in the distant past — were subject to recall bias. Respondents were most gracious in attempting to reconstruct events from over a decade ago, but there is an inherent bias in doing so.

Second, the key informants included persons closely involved in the program who tended to have a favorable outlook toward these health initiatives. The team did not attempt to identify and interview persons who might have provided alternative interpretations to this set of events, given the difficulty of drawing up any type of systematic list of such individuals. The team did, however, try to solicit information on both positive and negative aspects of the program from those interviewed, and most respondents were quite forthcoming.

Third, it was difficult and in some cases impossible to obtain financial information on components of MOH activities funded by other donors. Thus, the team was not able to assess the financial contribution made by USAID relative to the total amount of international aid for each sector.

Fourth, the existing documentation was more extensive for some programs than others and for some periods than others. Although four reports were prepared, the descriptions of the programs herein do not do justice to the many triumphs and frustrations of designing and implementing these activities.

Summary of Findings – Child Survival

During the past three decades, the Government of Morocco (GOM), with USAID's support, has addressed child mortality with programs in immunization, food distribution, nutrition and breast feeding promotion, acute respiratory infections (ARI), diarrheal disease management, micronutrient supplementation and fortification, and, most recently, integrated management of childhood illnesses. Morocco's child survival program can be considered a success by any measure. The MOH has applied effective strategies and strong leadership to the problems of child morbidity and mortality. Programs that have been particularly successful are the immunization and diarrheal programs.

USAID has made important contributions to the success of the child survival program. USAID's contribution to child survival has been greatest in the areas of immunization, diarrheal disease control, nutrition, and ARI. USAID investments in family planning have contributed to the goals of reducing infant and child mortality and morbidity and enhancing the system of Morocco's primary health care services.

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ACRONYMS

ARI	Acute Respiratory Infections
BFHI	Baby Friendly Hospital Initiative
CAP	Community Assessment and Planning
CMS	Commercial Market Strategies
CS	Child Survival
DHS	Demographic and Health Survey
DTP	Diphtheria, Tetanus, and Pertussis
ECCD	<i>Enquête Cause et Circonstances de Décès Infanto-Juvenile</i> (Causes and Circumstances of Infant and Child Death)
EMRO WHO	Eastern Mediterranean Regional Office
EPI	Expanded Program on Immunizations
FP	Family Planning
GOM	Government of Morocco
IEC	Information, Education and Communication
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant Mortality Rate
MOH	Ministry of Health
MOST	Micronutrient Operational Strategies and Technologies
OMNI	Opportunities for Micronutrient Interventions
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
PEV	<i>Programme Elargi de Vaccination</i> - Expanded Program on Immunizations
PLMC	<i>Programme Nationale de Lutte contre les Maladies de Carence</i> – Nutritional Deficiency Prevention Program
PLMD	<i>Programme Nationale de Lutte contre les Maladies Diarrheiques</i> – National Program to Combat Diarrheal Disease
PMI	<i>Protection Maternelle et Infantile</i> - Maternal and Child Protection
PNI	<i>Programme Nationale d'Immunization</i> – National Immunization Program
PSE	<i>Protection de la Santé de l'Enfant</i> - Protection of Child Health
PSI	Population Services International
PSME	<i>Protection de la Santé de la Mère et de l'Enfant</i> - Protection of Maternal and Child Health
TT	Tetanus Toxoid
VAD	Vitamin A Deficiency
VDMS	<i>Visites à Domicile de Motivation Systematique</i> - Systematic Motivational Home Visits
WB	World Bank
WHO	World Health Organization

CHILD SURVIVAL

INTRODUCTION

Infant mortality is a major preoccupation worldwide but nowhere is it felt more than in developing countries. The World Health Organization (WHO) states that more than 11 million children under age five die annually, and more than 70 percent of these deaths are due to five major causes: acute respiratory infections, diarrheal diseases, malaria, measles, and malnutrition. During the past 35 years, the Government of Morocco (GOM) has addressed child mortality with programs in immunization, food distribution, nutrition and breast feeding promotion, acute respiratory infections, diarrheal disease management, micronutrient supplementation and fortification, and, most recently, integrated management of childhood illnesses.

Since 1954, USAID and its predecessor agencies have worked to improve child survival in developing countries. In that year public law 480 established food assistance to children and pregnant and lactating women. In 1961, the foreign assistance act cited the reduction of infant mortality as a specific objective. In 1985, USAID established the "Child Survival Program" in direct response to Congressional Legislation requiring a program to address child survival.

In 1990, at the "World Summit for Children," heads of state from 70 countries, including Morocco, established a set of goals including lowering under-five mortality by one third by the end of the century in a remarkable "global partnership for children."

Box 1. A Global Partnership for Children

The Child Survival Program is part of an unprecedented global crusade, a cooperative venture in which developing countries, the World Health Organization (WHO), the United Nations' Children's Fund (UNICEF), donor nations, bilateral donors, private voluntary organizations, universities, private industry, and USAID have all joined forces to save children's lives.¹

Child survival activities in Morocco (as elsewhere) have often been developed in accordance with global initiatives or donor priorities and as such, have been managed in a rather isolated or "vertical" manner. While USAID's assistance to the Moroccan family planning program was divided into clear "Phases," child survival assistance was led by UNICEF and WHO unrelated to the USAID phases. Nonetheless, to be consistent with the safe motherhood and HIV/AIDS reports, the accomplishments in child survival during each of these phases is presented.

II. STAGES AND ACCOMPLISHMENTS

A. The Early Years: Until 1970

Child survival activities, like those in family planning, operated directly under the Directorate of Technical Affairs until the creation of the Population Division in 1972. Health services for children during this period consisted mainly of curative care, with preventive care focused in the areas of vaccination, food distribution, nutrition, and growth monitoring.

Immunization Program

Vaccination against disease began in Morocco in 1929 with the smallpox vaccine. By the 1950's smallpox was eradicated. BCG* was introduced in 1949, and DTC† in 1963. Despite the success of the early vaccination program, the infrastructure necessary for services was minimal and coverage was sparse. The MOH organized an anti-polio campaign in 1964 in large cities and a general campaign for all existing vaccines in 1967.² These mass campaigns had minimal effect nationwide on infant mortality and morbidity because they did not reach those in remote areas. As late as 1980, evaluations conducted by the MOH and UNICEF found that coverage in these zones remained very low.

Nutrition and Food Distribution

Malnutrition is one of the five most important contributors to child mortality. In fact, studies have shown that even mild malnutrition can increase the chances of mortality from other diseases and may be associated with up to 56 percent of all childhood deaths.³ The MOH and USAID have worked to improve the nutritional status of children in recognition of this fundamental role nutrition plays in child survival.

The U.S. Mission PL-480 Title II food distribution program (*Programmes Alimentaires Compensatoire-PAC*) began in 1956 to provide supplementary rations on a very small scale for the poorest segments of Morocco's population. The program, under the direction of the Ministry of Social Affairs, was administered through funds from USAID, Catholic Relief Services (CRS), and the Catholic Medical Mission until 1990.⁴

In 1960-61, UNICEF conducted an international nutrition survey in Morocco, Tunisia, and Algeria. The survey found a high incidence of malnutrition in Morocco and especially vitamin D deficiency. A national survey in 1969-70 showed similar findings.

To address malnutrition and other child health problems, the MOH developed the Maternal and Child Protection Service (PMI—*Protection Maternelle Infantile*). Although the activities of the Service were not clearly defined, the PMI began providing dietary lessons with cooking demonstrations and conducted growth monitoring/nutrition

* Bacille-Calmette-Guerin (vaccine against tuberculosis)

† Diphtheria, Tetanus, Coquelouche (English DPT: diphtheria, tetanus and pertussis)

surveillance activities in health facilities throughout the country. A weight calendar was developed for children under two years of age. Moreover, children received a vitamin D supplement of 600,000 IU at birth, at six months and at 12 months of age. The MOH also adopted the Harvard international standard growth curve during this period, which provided more accurate global comparisons.⁵

B. USAID Phase I: 1971 – 1977

USAID's Phase I was devoted exclusively to family planning with only peripheral support to child survival resulting from infrastructure and logistics strengthening. The MOH Population Division (which later became a Directorate itself) housed technical offices for almost all child survival programs. The MOH Maternal and Child Protection Service (*PMI*), which operated under the Population division, became the Child Health Protection Service (*Protection de la Santé de l'Enfant - PSE*) for two years before integrating, once again in 1981 as the Protection of Maternal and Child Health Service (*Service de la Protection de la Santé de la Mere et de l'Enfant- PSME*). MOH child survival activities continued to focus on immunization, nutrition, and food distribution. In immunization, Morocco continued to concentrate on mass campaigns.

MOH activities in nutrition included food distribution, growth monitoring of all children under two years of age, rickets prevention activities (vitamin D distribution), and production of Actamine 5 - a nutrient-dense weaning food. The Government of Morocco's feeding program provided food supplements such as oil, flour, milk powder, and other foods as well as nutrition education to 150,000 mothers and their two youngest children.⁶

As the awareness of the importance of nutrition increased, the MOH conducted a study on the nutritional status of young children and created a training program for nutrition technicians in the paramedical schools.

C. USAID Phase II: 1978 – 1984

As described in more detail in the Family Planning Report, the VDMS pilot project (*Visites à Domiciles de Motivation Systematique*) was the primary focus of this phase of assistance. The pilot project, based in the province of Marrakech, provided community-based family planning services to women who lived more than three kilometers from fixed health facilities in rural areas. MOH itinerant health agents, using small mopeds, reached more than 150,000 women over three years.^{7,8} The rapid gains in contraceptive prevalence in Morocco during the 1980s are largely attributed to the success of the VDMS program. To strengthen gains in child survival resulting from increased contraceptive prevalence, the MOH decided to integrate activities more directly addressing child survival into the VDMS program during this period.

The MOH programs addressing child survival at the end of this period included:

- The Expanded Program on Immunizations (*Programme Elargi de Vaccination, PEV*);
- The National Program to Control Diarrheal Disease (*Le Programme National de Lutte Contre les Maladies Diarreiques, PLMD*);
- The Protein-Calorie Malnutrition Control Program (*La Lutte contre la Malnutrition Proteino-Calorifique*); and
- The Rickets Prevention Program (*La Prevention du Rachitisme*).⁹

National Immunization Program

In 1980, the MOH and UNICEF evaluated the vaccination campaigns and found that immunization coverage remained very low. To address this and other shortcomings, the MOH established the Expanded Program on Immunizations (*Programme Elargi de Vaccination - PEV*) in 1981 with UNICEF support. The PEV focused on tuberculosis, whooping cough, diphtheria, measles, tetanus, and poliomyelitis. Coverage increased slowly. A second evaluation conducted in 1986 showed encouraging results, although coverage for children under one year (the target population) remained at less than 50 percent. Immunizations were administered primarily through the VDMS mobile teams and at the few fixed health centers. Despite these efforts, those families who lived in remote areas remained relatively untouched.

Diarrheal Management

To address Morocco's elevated mortality and morbidity related to diarrheal disease, the MOH implemented a pilot project that distributed oral rehydration salts (ORS) in clinics in three provinces (Errachidia, Agadir, and Béni-Mellal) and in Rabat's children's hospital from 1979-1982. After this project proved successful, national distribution of ORS began in 1983. A study conducted in the children's hospital by the MOH from 1980-1989 revealed a two-thirds decrease in admissions for acute dehydration due to diarrheal disease.¹⁰ The promotion of ORS contributed largely to this decrease.

National Nutrition Program

During this period, USAID support for nutrition activities was limited to Title II food aid provided through Catholic Relief Services (CRS). UNICEF funded most of the early nutrition activities including vitamin D supplementation, growth monitoring, and training of health workers. The Maternal and Child Health Division remained focused on reducing rickets with vitamin D supplementation, growth monitoring, nutrition education, and dietetic demonstrations in the health clinics. Over time, the program decreased the dosage of vitamin D supplementation and increased outreach activities related to general nutrition education. Eventually, nutrition counseling and growth monitoring became a large part of the VDMS program, and many women and children were referred to health centers for severe malnutrition.

Breastfeeding Promotion: With the growing awareness of the importance of breastfeeding to nutritional status, Morocco subscribed to the WHO sponsored “International Code of Marketing of Breast milk Substitutes” at the 1981 World Health Assembly.¹¹ The International Code banned promotion of bottle feeding and set out requirements for labeling and information on infant feeding. The Code and its subsequent World Health Assembly Resolutions were intended as minimum requirements in subscribing countries.

D. USAID Phase III: 1984 – 1991

While Phase III assistance remained focused on family planning, the USAID budget committed for child survival more than doubled during this phase. Child survival efforts increased markedly and were delivered through the VDMS program as well as through fixed health facilities.

VDMS Program

By 1986, the VDMS Program provided services to more than 70 percent of the population. These services included not only family planning but growth-monitoring, oral rehydration therapy (ORT), nutrition education and vitamin/mineral supplementation for malnourished mothers and children, vaccination counseling and referral, and monitoring of pregnant and lactating women.^{12,13}

Evaluations of the VDMS program showed that the integrated approach to health care contributed to the success of the program.¹⁴ While family planning and birth spacing contributed to improved child survival indicators, the child survival component of VDMS may have helped improve the acceptability of the entire package of services. By offering needed child health services (e.g., immunizations, treatment for diarrhea or malnutrition), women were exposed to family planning information.¹⁵ In this way, the integrated components were mutually reinforcing.

Eventually, the VDMS program merged into the MOH’s overall “mobile strategy” as the number of fixed health facilities serving rural populations increased, and donor support for the program’s high recurrent costs was progressively withdrawn.

National Immunization Program

During this phase of USAID assistance, the World Health Organization (WHO) actively promoted immunizations as the primary element of child survival programs.

UNICEF and USAID strongly encouraged Morocco’s involvement in the EPI international vaccination campaign. The global goal of the EPI was to reach at least 80 percent immunization coverage of the population by 1990.¹⁶ The GOM was initially reluctant to participate, but after several meetings with Dr. Othmane Akalay, a dynamic Moroccan public health physician working in southern Morocco, and Mr. James Grant, the General Director of UNICEF, the King and governmental officials became convinced of the

severity of the problem. Akalay and Grant made a strong case that a vigorous vaccination campaign would significantly contribute to decreases in infant morbidity and mortality rates. In 1987, after a meeting between the King and UN high officials, Morocco decided to participate in the global immunization campaign. The Minister of the Interior was responsible for overseeing all support, particularly logistic support, to the MOH.¹⁷

Shortly thereafter, the USAID Phase III Project was amended to provide substantial assistance to Morocco's immunization program. Up to this time USAID had played a limited role in the immunization program in Morocco. This program reorientation came as a result of a strong request from the GOM that USAID integrate elements of the MOH Maternal and Child Health Program into the USAID family planning project. The request coincided with the advent of USAID funds earmarked for Child Survival.¹⁸

In 1987, the PEV was restructured and renamed the National Immunization Program (*Programme National d'Immunization - PNI*), and funding increased for immunization activities. The objective of the restructured program remained the same: 80 percent immunization coverage for children under one year of age by 1990.[†] By October 1987, the campaign had full endorsement from the King, the Ministry of Health, and the support of many donors — USAID, UNICEF, Rotary International, and other non-governmental organizations. UNICEF provided vaccines to the Ministry of Health that had previously been the responsibility of the Moroccan government. While the GOM (with World Bank assistance) was increasing the number of fixed health facilities from approximately 800 in 1987 to more than 1,900 in 1997, they were simultaneously developing new strategies to improve coverage rates. These included:

- The adoption of the WHO/UNICEF vaccination calendar;
- A national policy that all women of reproductive age be vaccinated against tetanus toxoid (TT);
- Mass procurement and installation of a cold chain infrastructure;
- A national training program for health workers; and
- Expansion of immunization services to all health centers and clinics.¹⁹

“National Vaccination Days” were launched in 1987. During the first three months of the initial campaign, more than 1.2 million children received the complete course of vaccinations and 1.6 million women of childbearing age received the recommended two doses of tetanus toxoid for the prevention of neonatal tetanus. Nationwide vaccination surveys done in 1988-89 showed that immunization coverage had increased from less than 50 percent to between 73-84 percent⁶ among children 12 to 18 months.²⁰

* Established under the worldwide Universal Child Immunization Initiative.

† A 1988 nationwide survey showed coverage of 84 percent, however a 1989 survey resulted in only 73 percent.

Diarrheal Management: Restructuring of Program (1987-1990)

Also in 1987, the MOH, with help from UNICEF, started *Le Programme National de Lutte Contre les Maladies Diarrheiques*, PLMD (National Program for Control of Diarrheal Disease). This program operated under the joint direction of the *Service de la Protection de la Santé de la Mère et de l'Enfant* (Service for Protection of the Health of Mother and Child) and the *Direction de la Prévention et l'Encadrement Sanitaire* (Direction of Prevention and Health Education). This partnership was developed because of the link between diarrheal disease and water and sanitation issues such as lack of adequate, potable water supply in arid rural areas and hygiene in general.

To address some of these issues, the MOH restructured the program in 1987 to make it more operational. Its objectives were assuring a regular supply of ORS in all health facilities and promoting the use of ORS in households. USAID took a more active role during this period and funded the PLMD's National Oral Rehydration Therapy Promotion Campaign that was held during July and August, 1988. The campaign focused initially on increasing awareness of the availability of ORS but the campaign did not increase the ORS use rate, which remained at less than 15 percent in 1992.

After the national distribution of ORS began in 1983, use increased moderately at the national level. However, the DHS showed that the use rate had decreased from 15 percent in 1987 to 14 percent in 1992. This decrease, and the poor acceptance of ORS overall, was thought to be due to "substandard case management in health centers and a lack of well-coordinated IEC efforts."²¹ A 1991 Evaluation of USAID's Child Survival Program identified several other possible reasons for this lack of success.²² First, diarrheal management with ORS prevents dehydration but does not address the actual cause of diarrhea nor does it prevent its recurrence. Secondly, the organizational placement of the diarrheal control program within the Maternal Child Division of the MOH gave the program both less autonomy and a lower budget than other programs. A third, chronic problem was the inability of the ORS production facility to consistently produce a sufficient quantity of high quality ORS packets.

National Nutrition Program

Beginning in 1984, USAID increased its role in MOH nutrition activities. The MOH, with assistance from USAID, developed a nutrition monitoring reference guide that was used by MOH workers. USAID funded training for health providers on use of the guide as well as general concepts of nutrition and treatment of severe malnutrition.

In 1987, USAID discontinued Title II food distribution but began funding the raw materials and transport of Actamine 5, a protein rich weaning food that the MOH had begun producing in the early 1970s. The Title II program continued to provide training for health workers on the use of Actamine as a dietary supplement.

Vitamin D supplementation, which had begun in 1970 with three doses of 600,000 IU given with vaccinations to infants at birth, at six months, and at 18 months, was

decreased to two doses (at birth and at six months only) in 1982, following a study that showed decreased prevalence of Vitamin D deficiency and rickets.²³

Breastfeeding Promotion: The DHS conducted in 1987 showed that the average duration of breastfeeding in Morocco was 14.4 months. This compared favorably with neighboring countries such as Sudan at 16.2 and Yemen at 13.5. This study did not report on exclusive breastfeeding, although it did note that the average duration of amenorrhea associated with breastfeeding was 8.7 months (compared to 7.3 in Tunisia and 11.5 in Sudan). Amenorrhea is prolonged with increased frequency of breastfeeding and amount of breast milk provided to the infant, so it is fair to conclude that Moroccan women were not significantly supplementing breast milk prior to 8 or 9 months postpartum.

Meanwhile, global awareness of the importance of breastfeeding was growing. In 1990, the 'Innocenti Declaration' on the protection, promotion, and support of breastfeeding was produced and adopted by participants at a WHO/UNICEF policymakers' meeting held in Italy. In 1992, WHO and UNICEF launched the Baby-Friendly Hospital Initiative (BFHI). The BFHI was established to improve support for breastfeeding in hospitals. A hospital is designated "baby-friendly" when it has agreed not to accept free or low-cost breast milk substitutes or feeding bottles, and to implement 10 specific steps to support breastfeeding.

E. USAID Phase IV: 1989 – 1996

The period 1987-1997 saw a major decline in mortality among children under five. An analysis of cause-specific mortality attributes the decline, in addition to the impact of the family planning program, to the success of several MOH child survival programs, especially the national immunization program and the programs against diarrhea and malnutrition.²⁴

Much of this success is due to the increased number of health facilities constructed during this time. By the end of Phase IV, the MOH had created a total of 1,900 basic health care facilities (from only 800 in 1987), including 600 rural dispensaries, 800 rural health centers (132 of which have *maternités* for childbirth services), and 530 urban health centers. A total of 106 public hospitals serve as referral centers for lower level facilities.²⁵

During this period, the MOH concentrated on improving the integration of services. A 1991 evaluation revealed that "despite differences in the vertical management of Morocco's Child Survival Program, the program is well integrated at the service-delivery level. This integration ensures that mothers and children have access to the full range of services."²⁶

It was during Phase IV that the VDMS program began winding down. In 1994, an MOH circular established a new strategy of service delivery based on health districts of approximately 45,000 inhabitants. In rural zones, each district was broken down to sub-sectors

of about 5,000 people. An auxiliary nurse was assigned to each rural sub-sector with the responsibility of visiting each family in his or her zone during a specified surveillance circuit.²⁷ In urban areas, the mobile program was discontinued since there was adequate coverage by health clinics.

National Immunization Program

In 1993, Morocco began participating in the Vaccine Independence Initiative, a program developed by UNICEF to help countries become self-sufficient in financing vaccine supply. This program, still active today, enables the GOM to buy vaccines through the UNICEF procurement system using local currency. To provide advance funds for UNICEF to pay for vaccines, USAID capitalized a “revolving fund” for Morocco with UNICEF that is used as a line of credit.²⁸ The GOM reimburses the fund upon delivery of the vaccines. Morocco continues to participate in this program that has simplified the procurement of vaccines without modifying the objectives of the National Immunization Program.

Diarrheal Management

With support from USAID, the MOH introduced an ORS packet called Biosel for commercial sale. In 1993, USAID awarded a \$752,000 contract to Population Services International (PSI) to establish a social marketing program for distribution of Biosel. In this first attempt to make ORT more sustainable, raw materials were donated by UNICEF.²⁹ Also in 1993 the MOH introduced an IEC strategy for diarrheal management that included the following three components:

- Strategy I: promotion of breastfeeding as well as other preventive health practices such as good hygiene and vaccinations against preventable diseases before 12 months of age;
- Strategy II: promotion of the lessons for mothers in management of diarrheal episodes (i.e., continuation of breastfeeding, giving ORS, watching for danger signs of dehydration and knowing when to go to the health center); and
- Strategy III: training for health workers on correct diarrheal management at health centers.³⁰

In addition to the national media campaign, the MOH mobile health teams used video, ORS demonstrations, and diarrheal management counseling and educational sessions.

National Nutrition Program

In the early 1990's, Morocco increased its attention to nutrition, especially micronutrient deficiencies. Following the International Summit on the Rights of the Child in 1990 and the International Conference on Nutrition in 1992, Morocco committed itself to eliminate Vitamin A and iodine deficiencies by the year 2000, and to reduce iron deficiency anemia by 30 percent.

To document the nutritional situation in Morocco, several studies were undertaken: a breastfeeding study (previously cited) was completed in 1992, a study on Vitamin D deficiency also in 1992, a study on iodine deficiency in 1993, and a Vitamin A deficiency study in 1996.

The study on Vitamin A status, termed a "regional" study, was conducted with technical assistance from the USAID Opportunities for Micronutrient Interventions (OMNI) project. The key finding of this study was that 41 percent of children aged 6 months to 6 years were sub-clinically deficient in vitamin A (<200 mg/L of blood). The study sample included 1,470 children from three separate regional zones - the mountains, the plains and "the rest of the country." The study team concluded that "Vitamin A deficiency presents a largely sub-clinical profile. With targeted supplementation and fortification, Morocco has every chance of greatly reducing, if not eliminating, sub-clinical VAD early in the next century."³¹

Breastfeeding Promotion: In 1991, the MOH established an action plan for breastfeeding promotion. The three main activities of the plan were 1) in-service training and awareness building for health professionals, 2) implementing BFHI in all hospitals, and 3) developing a Morocco-specific code on breast milk substitutes.³²

To determine Morocco's baseline compliance with the International Code on Marketing of Breast milk Substitutes, the WHO funded a study on breastfeeding practices in Moroccan health facilities in 1992. The study, with a sample of 217 health professionals from 10 provinces, showed that substitutes were being provided and used to a large degree in both public and private sector facilities. Other significant findings of this study were: 1) health providers systematically encouraged feedings with colostrum in the first 24 hours after birth,* 2) newborns were not put to the breast immediately after delivery, and, 3) the practice of providing water and "tisanes" in the first days after delivery was widespread.³³

Acute Respiratory Infections

According to a 1989 WHO report, infectious disease accounts globally for 63 percent of deaths among children. Among infectious diseases, Acute Respiratory Infection (ARI), especially pneumonia, is the leader, causing nearly 2 million child deaths per year.³⁴ The gravity of this problem had earlier prompted the WHO to develop a systematic approach to the management of childhood pneumonia in developing countries. National ARI control programs were established in many countries, with a focus on the rational use of antibiotics, correct case management, health education, and immunization against related illnesses.

Although Morocco's immunization program did help to reduce ARI-related mortality, the MOH did not establish an ARI control program until 1992. UNICEF and WHO

*This is not consistent with anecdotal reports from health providers and MOH staff that feeding colostrum to a baby is considered a taboo in Morocco, and that colostrum is first expressed before the baby is breastfed.

supported preliminary activities — drug procurement and training of health providers in four pilot provinces (Agadir, Kenitra, Meknés, and Marrakech) to prepare for implementation of the program in 1992. During the first year of operation, WHO funded training and USAID funded travel for several MOH officials and doctors to attend the International Consultation on Control of Acute Respiratory Infections; USAID also funded a 1992 assessment of the program. The African Development Bank helped fund the expansion of the ARI program to 10 provinces. This expansion was originally planned for 1993, but did not occur until 1996. Some health professionals date the establishment of the ARI program as occurring after this expansion in 1997.³⁵

F. USAID Phase V: 1993 – 1999

By Phase V, Morocco's considerable efforts to develop the health system were showing results. Infrastructure and equipment were in place, as were a large and growing number of trained health professionals. A number of special programs concerning child survival were operational, among them: the National Immunization Program, the Diarrheal Disease Program, the Well Child Program, the Nutritional Deficiency Program, the Acute Respiratory Infection Program, and the Tuberculosis Program.

During this phase, the MOH continued to focus on outreach and, perhaps because of the large number of "vertical" programs, increased the emphasis on integration of preventive health services. In 1996, the MOH conducted "combined" refresher training for more than 1,200 health workers in 30 provinces. The training integrated elements of several vertical programs: immunization (with a focus on polio eradication goals), management of diarrhea, management of acute respiratory infections, and an evaluation of nutritional status in an effort to improve overall care of children in basic health service facilities. An evaluation of the training conducted in early 1997 prior to the expansion to the remainder of the country showed favorable results.³⁶ This combined training set the stage for the adoption of the Integrated Management of Childhood Illnesses (IMCI) strategy in 1998.

Despite the remarkable growth in the number of fixed health facilities during Phase IV, a large segment of the population continued to have poor access to basic services. In 1996, nearly 31 percent of the population lived more than 10 kilometers from a health facility. One of USAID's early interventions during this phase was to provide the MOH with 180 covered Chevrolet pickup trucks to support "Mobile Team" outreach activities. Despite this significant reinforcement of the mobile system, the MOH acknowledged in 1998 that the entire mobile strategy, in terms of coverage and health care delivery, remained weak. Reasons for this included: 1) a 10 percent reduction in the number of itinerant nurses between 1992 and 1997, and 2) "Mobile Team" problems such as a lack of fuel, poor working conditions in the target zones, and general dysfunction in organization and management.³⁷

Major accomplishments in child survival during this period included:

National Immunization Program

The 1998 study, *Causes and Circumstances of Child Deaths*, cites as the first and most important finding, a remarkable decrease in the number of deaths due to vaccine preventable illnesses. The study attributes the decrease to “the success and wide coverage of the National Immunization Program.”³⁸

During this phase of assistance, Morocco added Hepatitis B to its package of standard immunizations, and USAID augmented the vaccine revolving fund to support the increased costs of this new vaccine.

The objectives of the National Immunization Program for the 21st century include:

- Reaching and maintaining a 95 percent immunization coverage in all areas of the country;
- Eradicating polio before the year 2000;
- Eliminating neonatal tetanus by the year 2000; and
- Eliminating measles by the year 2005.³⁹

Diarrheal Management

In 1996, UNICEF stopped providing ORS packets directly to the government. To help assure the continuous availability of ORS in the country, UNICEF agreed to provide raw materials at no cost to PSI for the social marketing program of ORS under the trade name Biosel. However, despite widespread promotion of the socially marketed Biosel, sales of ORS in private pharmacies remained weak over the next five years. The main reason for this was the free distribution of ORS to public health facilities.

Since USAID’s objective was to ensure that the production and distribution of ORS became autonomous, the MOH’s free distribution of the same product was seen as counter-productive to cost recovery efforts. In addition, USAID’s preferred social marketing strategy is to allow sales of ORS in a wide variety of outlets in an effort to increase access, especially in rural areas where there are few pharmacies. Despite USAID’s recommendations, in 1995, the Moroccan Pharmaceutical Industry classified ORS as a medicine that could only be sold in pharmacies. This contributed to USAID’s decision that year to discontinue financing Morocco’s ORS program.⁴⁰

PSI maintained a presence in Morocco and continued to socially market Biosel without USAID funding until 1999, at which time limited support became available through a linkage with the contraceptive social marketing project. USAID’s new-centrally funded social marketing project - Commercial Market Strategies (CMS) — had PSI as one of its subcontractors and it became advantageous to consolidate Biosel with contraceptive social marketing activities.

Today, the MOH procures all ORS used in public health clinics and distributes it at no cost. The MOH purchases ORS from the same private Moroccan company, Cooper Maroc, that produces Biosel. Cooper Maroc produces the same type of ORS under two trade names, *Diarit* and *Biosel*, but they sell the *Diarit* brand to the public sector. The social marketing program continued to work to increase the private sector market for ORS, but sales remained at low levels through 1999. Nevertheless, in 2000, when mass media (radio and television) promotion resumed with USAID support, sales increased 61 percent from 500,000 packets in 1999 to 800,000 packets in 2000.⁴¹ Moreover, the MOH's demand for ORS, which was 826,000 packets (*Biosel* and *Diarit*) in 2000, increased to 2.5 million packets in 2001.

National Nutrition Program

In 1998, the MOH held an important seminar on micronutrient deficiency designed to disseminate the 1996 Vitamin A study results and to develop strategies to correct and prevent micronutrient deficiency. The USAID OMNI Project and its follow-on project, Micronutrient Operational Strategies and Technologies – MOST, supported the seminar and many subsequent activities. Following the 1998 International Vitamin A Consultative Group Conference in South Africa, a dynamic and committed Micronutrient Committee was established in Morocco, which instituted the MOH Nutritional Deficiency Prevention Program (*Programme National de Lutte Contre les Maladies de Carences - PLMC*). This committee helped finalize the Program's "micronutrient strategy" originally drafted at the 1998 seminar. The strategy targets Vitamin A and iron supplementation, community mobilization, and strengthening of public-private partnerships. Public-private partnerships are developing primarily around food fortification, especially iodization of salt, iron and B vitamin fortification of flour, and vitamin A fortification of oil.

Iron deficiency: The MOH, with support from the World Bank and the Government of Japan, carried out a survey investigating iron deficiencies. As a result, a new program of iron distribution was implemented in 1995. Pregnant women now receive iron supplements in all MOH basic health facilities as well as through mobile health teams. However, despite these efforts, it is estimated that only 60 percent of pregnant women receive such supplementation nationwide, and only 40 percent of women in rural areas receive at least one prenatal exam (1997 PAPCHILD Data). In addition to iron supplementation, USAID supported research on the feasibility and cost of fortifying wheat flour with iron folate and B vitamins.⁴²

Iodine Deficiency Disease: A national goiter prevalence study conducted in 1993 found high iodine deficiency in Moroccan women and children between six and twelve years of age.⁴³ The National DHS panel survey in 1995 found similar results.⁴⁴ At the 1990 World Summit for Children, Morocco targeted the virtual elimination of iodine deficiency by the year 2000. In 1995, the GOM signed legislation mandating and setting standards for iodization of all salt. UNICEF has equipped salt producers with the means for iodization, but consumption of iodized salt in Morocco remains low. Problems are related to: 1) cost and consumption preferences of (primarily) rural populations, 2) local salt producers who

are not willing to change their processes, 3) the absence of GOM mechanisms for control or enforcement of the iodization legislation and 4) the absence of information and communication in order to educate the public about the advantages of iodized salt.

Breastfeeding Promotion: Breastfeeding promotion was introduced in MOH hospitals in 1987 and extended to health centers in 1990. In 1992, Morocco adopted the Baby Friendly Hospital Initiative that supported breastfeeding promotion in maternity wards and “*maisons d’accouchement*” or birthing centers. The program received UNICEF funding until 1995, at which time 17 of the 43 targeted MOH hospitals had been certified as meeting all requirements of the program.

Acute Respiratory Infections

In 1993, the MOH conducted a study on parents’ management of ARI in Marrakech with USAID and WHO assistance.⁴⁵ The research showed that both traditional and Western health practices were used to fight infections, with variations depending on the socio-economic status of the patient. In 1997, only 43 percent of women brought children with an ARI to a health center for treatment.⁴⁶ In 1999, the MOH and USAID conducted an anthropological study to inform the IMCI strategy. This study, on caretaker’s perceptions of childhood illnesses (conducted in only two provinces of Morocco), concluded that while traditional treatments for ARI and other illnesses were often used, caretakers actually preferred modern “biomedical” therapies. The study concluded that low utilization of modern treatment and services was mainly related to: 1) poor access to services, 2) low understanding of the causes and normal course of specific illnesses, and 3) perceptions of poor quality of services.⁴⁷ In 1997, only 43 percent of women with children suffering from an ARI took their children to a health facility for treatment.

Administrative changes within the MOH may help increase the effectiveness of the National Acute Respiratory Infection Control Program. From its inception, this program was managed under the *Direction d’Epidemiologie*. In 2001, it moved to the *Direction de la Population*, where the other child survival programs are operated, including the IMCI strategy that includes ARI in its protocols.

Integrated Management of Childhood Illnesses (IMCI)

The global IMCI strategy was developed by the WHO and UNICEF in 1995 with the collaboration of numerous partners, including USAID, through the BASICS project. The approach responds to the fact that 70 percent of childhood deaths are caused by just five conditions, all of them preventable or treatable: pneumonia, diarrhea, malaria, measles, and malnutrition.⁴⁸ The approach also includes the promotion and support of breastfeeding based on estimations that a modest increase in breastfeeding rates worldwide could prevent as many as 10 percent of all child deaths. The goal of the global IMCI strategy is to reduce death and disability from, and the frequency and severity of, these illnesses among children under 5 years of age, and to contribute to their improved growth and development. IMCI includes interventions to improve health worker skills and care

in health facilities, to strengthen health systems, and to improve family and community practices.⁴⁹

The IMCI strategy includes three main approaches:

- The clinical component, to improve the skills of health professionals;
- The organizational component, to improve the functioning of the health system; and
- The community component, to improve family health behaviors.

To improve care in health facilities, the strategy employs a technically sound and effective set of clinical guidelines intended for use primarily in outpatient settings without laboratory or other diagnostic services. The principle strategy for improving quality of care in health facilities has been in-service training. In addition to building clinical competence, IMCI includes a focus on skill development in the area of communication techniques. In order to reinforce these skills, health professionals are followed-up six weeks and six months after the training. IMCI training should be organized in order to address the needs of health professionals in the field, specifically through in-service training. However, WHO highly recommends introducing IMCI into medical and nursing school curriculum.

The organizational component of IMCI is considered to be a catalyst for health system reform and includes:

- A better definition and distribution of different tasks among health professionals.
- Regular availability of essential medicines.
- Adoption of a practical network for childhood illness.
- Adaptation of the information system.
- Improvement of supervision.

The community component of the strategy aims to “initiate, reinforce and sustain family practices that are important for child survival, growth and development.”⁵⁰

In 1996, the Moroccan MOH requested USAID assistance to implement an IMCI pilot project. USAID contracted with the BASICS Project to provide technical assistance to the MOH working in collaboration with WHO Headquarters in Geneva and WHO/EMRO, the World Health organization’s Eastern Mediterranean Regional Office. In 1998, BASICS assistance ended and continued technical assistance was provided through the JSI bilateral project.

In order to implement the IMCI strategy, a national directing and technical committee were established. The technical committee was composed of staff from the child health program, university professors of pediatric medicine, and health professionals from pilot provinces. The committee’s main task was to adapt the WHO’s generic guidelines to the epidemiological context of Morocco.

Major achievements of the pilot project included:

Clinical Services Component:

- A baseline health facilities assessment conducted in two pilot provinces (Agadir Ida Outanane and Meknés El Menzeh);
- WHO generic clinical guidelines adapted to the Moroccan epidemiological context;
- A total of 64 trainers, 34 supervisors, and 347 health care providers trained;
- A modified key counseling guide (the “mother’s card”) following an assessment of Moroccan child feeding practices and terms;
- Training of health professionals at the national and provincial levels; and
- Supervision visits (“Follow-up after training”) conducted at all sites.

Community Component:

- A Community Assessment and Planning (CAP) exercise conducted in each pilot province, using household survey and participatory research methods. Local action plans developed; and
- Operational research activities conducted and small grants provided to increase community participation and implement aspects of local action plans.

Systems Component:

- Routine information system at health centers adapted to better reflect IMCI case management; and
- A list of essential medicines developed and increased supply levels in rural centers.

Pre-service Training Efforts:

- IMCI introduced into nursing and paramedical school curricula; and
- Action plans developed and initial efforts underway for the introduction of IMCI into medical school curricula.

Before extending the IMCI approach to other provinces in Morocco, a rigorous independent evaluation of the clinical component of the IMCI pilot project was conducted in May, 2000, in collaboration with USAID, the WHO, and technical support from the CDC in Atlanta. The evaluation sought to understand the impact of IMCI training and its effect on the quality of management of sick children. This study, which was one of the first of its kind to be conducted, allowed the comparison of the management of sick children by health professionals trained in IMCI (experimental group) against health professionals not yet exposed to IMCI (non-equivalent comparison group)

The objectives of the evaluation included:

1. To evaluate the impact of training with follow-up on IMCI for children ages 0-5 seen in mobile health clinics by comparing indicators at the regional and provincial level and using data from the two pilot provinces;
2. To identify the strengths and weaknesses of IMCI in order to improve performance in the two pilot provinces;
3. To collect baseline data from the two pilot provinces for future evaluation; and
4. To reinforce IMCI in two pilot provinces and expand to other provinces.

The results of this evaluation showed that approximately one year after IMCI training, the care received by sick children living in IMCI areas was of higher quality than that received by sick children living in non-IMCI areas, as defined by the IMCI clinical practice guidelines. Trained health workers consistently performed better than their non-trained counterparts in the assessment and classification of sick children. In addition, the antibiotic abuse rate in the IMCI group was significantly lower than the non-IMCI group (12 percent vs. 34 percent). IMCI health workers also performed better than the non-IMCI group in counseling and providing patient instructions.⁵¹

Despite these excellent results, the study showed some weaknesses among IMCI trained providers. First, while very few children needed referral, the two cases in the IMCI group that should have been referred were not. In contrast, five out of eight children in the non-IMCI group requiring referral were referred. Although IMCI trained workers did provide better patient counseling, only 41 percent of parents in the IMCI group were told about the importance of giving extra fluids and continuing feeding during illness.

The study also highlighted continuing problems in the availability of medicines. All six oral medicines deemed essential in the IMCI guidelines were equally unavailable in both groups on the day of the survey. Only 28 percent of IMCI facilities had all six oral medicines and only 9 percent of non-IMCI facilities had all six. Although the four essential pre-referral injectables were available on the day of the survey in more non-IMCI facilities (19 percent) than in the IMCI facilities (9 percent), these results indicate an overall dearth of such drugs in any facility. By contrast, essential vaccines were available in both groups (100 percent IMCI, 88 percent Non-IMCI);

G. USAID's Special Objective Phase

USAID's current and final program in the health sector (1999-2004) is a transitional program with the aim of insuring sustainability of the national program, and funding is much smaller (approximately one fifth of the USAID Phase V budget). The first component focuses on improving primary health care delivery at the regional/local level and will, in this way, impact child survival. USAID will provide assistance to local teams in the development of innovative models to improve access, use, quality and efficiency of health services, as well as in clarifying and strengthening roles, responsibilities, and capacities at the regional and provincial levels. The second component emphasizes increasing client

access and use of the private sector for reproductive and child health care, in order to diversify the resource base and thus relieve some of the burden on the public sector.

III. MEASURING PROGRESS

The infant mortality rate (IMR) is a key indicator for tracking progress in child survival and gives a strong indication of the health of the population as well. In Morocco, IMR has decreased significantly and steadily from 91 deaths per 1,000 live births in 1979 to 37 per 1,000 live births in 1997. Under-five mortality has also fallen from 138 deaths per 1,000 in 1979 to 46 per 1,000 in 1997, a 67 percent mortality decline.⁵²

The MOH conducted two national surveys on the “Causes and Circumstances of Infant and Child Death” (*Causes et Circonstances de Décès Infanto-Juveniles: Enquête Nationale - ECCD*) with USAID assistance, in 1988 and 1998, respectively. The study teams drew on the large DHS and PAPCHILD samples, employing the “verbal autopsy” approach with families of deceased children identified in each larger study. The 1998 study conducted an excellent analysis of the changes and trends from the first study and provided critical data to inform and guide the child survival program.

A comparison of the findings of the two studies showed an impressive overall mortality decline of 46 percent. The decline was highest among children from ages one to four at 65 percent, 45 percent in the neonatal period (first 28 days of life) and lowest at 34 percent in the post-neonatal period (28 days to 11 months). The major finding was the strong decrease in immunizable illness (86 percent reduction), especially measles and whooping cough, which have become only rare causes of death over the last 10 years. The remarkable 96 percent decrease in tetanus during the neonatal period also attests to the effectiveness of the vaccination program.

Morocco’s immunization program has been shown to be primarily responsible for this decline in child mortality. Some public health leaders, aware of the weaknesses and negative public perceptions of the health system, cite the immunization program as the sector’s most credible element.⁵³ An analysis of trends in under-five mortality over a 10-year interval documents the remarkable impact of Morocco’s efforts in this area.

The study highlighted the continuing high rates of death due to acute respiratory infections and fetal distress. Mortality due to pneumonia declined only 15 percent from 1988 and fetal distress only 9 percent. These findings had strong implications for improving management of ARI and of labor and delivery and newborn care, both areas already being addressed by the MOH.⁵⁴

The study concluded that two-thirds of the deaths seen were associated with difficult socio-economic circumstances, particularly related to long distances to the nearest health facility, and that the remaining third could be attributable to various failures in the health system.⁵⁵

National Immunization Program

Despite the impressive gains in immunization coverage, rural immunization rates are still considerably lower than urban rates. While more than 94 percent of children aged 12 to 23 months were fully vaccinated in urban areas in 1997, only 81 percent were fully vaccinated in rural areas. Also, in 1997, prenatal tetanus coverage was 47 percent in urban areas and 38 percent in rural areas. Factors contributing to these low levels of rural coverage may include ineffective mobile strategies (due to seasonal geographic inaccessibility, high recurrent costs and shortages of itinerant health workers), problems with cold chain logistics, insufficient supervision and continuing education for health personnel, and low levels of community participation.⁵⁶

Diarrheal Management

Despite a decline in deaths due to diarrheal disease of more than 70 percent in most age groups between 1987 and 1997, it remained the third most common cause of death seen in the latest ECCD study, behind perinatal causes and pneumonia. The study attributes the decrease to the MOH diarrheal disease program as well as to the large increase in use of ORS in the home and better management of diarrhea in the health centers.

ORS use increased from 62 percent in 1992 to 79 percent in 1997. Nevertheless - and even though women cited health centers as their main source for ORS - among those women who took their children to a health center for treatment of diarrhea, only 14 percent in 1992 and 29 percent in 1997 received ORS.

At the same time, the frequency of reported cases of diarrhea is increasing. According to the 1995 DHS, eight percent of urban children and 12 percent of rural children under five had a diarrheal episode in the two weeks preceding the survey. These statistics compare to 11 percent urban and 14 percent rural in 1992 and 29 percent in both urban and rural children in 1987. Similar results were noted with the percentage of diarrheal episodes in the 24 hours preceding the survey. The PAPCHILD data from 1997, however, showed a reverse of the downward trend. The percentage of children under five experiencing diarrhea in the two weeks prior to the 1997 survey increased to 14 percent in urban areas and to 25 percent in rural areas. This increase may be due to better awareness and reporting of cases by mothers, or it may be an artifact of a survey methodology different from that used in preceding DHS surveys.

Acute Respiratory Infections

Although several child health indicators have shown significant improvement over the years, the MOH has made little progress in decreasing acute respiratory infections. In fact, while deaths from ARI have slightly decreased, the number of reported cases of ARI in children under five has increased from 1,000 in 1985 to over 5,000 in 1997. Deaths from these diseases were concentrated in the rural areas.⁵⁷ Poverty and the time lag in seeking treatment may be responsible for the lack of improvement in this area.

National Nutrition Program

The 1997 PAPCHILD study showed that both acute and chronic malnutrition increased slightly since 1992. Chronic malnutrition increased from 23 percent in 1992 to 24 percent in 1997 with rural rates still double that of urban areas (15 percent urban, 29 percent rural.)

However, according to the ECCD study, deaths due to malnutrition decreased by 72 percent in the one to four age range in the period 1987 to 1997. Among deaths due to malnutrition, the principal cause was protein-energy malnutrition.

Micronutrient deficiency status is detailed in Table 1.

Rickets due to Vitamin D deficiency in hospitalized children <2	3% show two clinical signs 2% show at least three clinical signs
Iodine deficiency in children age 6-12	22% (some zones as high as 50-78%)
Anemia	>45% of pregnant women 33% of children six months-five years and women of reproductive age
Vitamin A deficiency	41% of children aged six to 71 months

Breastfeeding Promotion: The 1997 PAPCHILD survey reported that 95 percent of all Moroccan children born in the previous five years were breastfed, though the average duration of breastfeeding had decreased to 13.5 months (from 14.4 months reported in 1987). The apparent drop in exclusive breastfeeding (from 62 percent in 1992 to 37 percent reported in the 1995 DHS) prompted UNICEF's concern as described in their program document: "the increased frequency with which breastfeeding is being abandoned contributes directly to the persistence of different forms of malnutrition."⁵⁸ Although the PAPCHILD study showed exclusive breastfeeding was up to 46 percent in 1997, questions remain as to whether this data reflects a reversal of the downward trend or only changes in data collection methodology. In either case, the low level of exclusive breastfeeding remains worrisome.

In 1998, only 17 of 98 hospitals were officially designated by UNICEF as "Baby Friendly," fulfilling ten criteria supportive of breastfeeding.⁵⁹ Training of future health professionals in IMCI strategies should contribute to improved breastfeeding practices in Morocco.

IV. COST AND SUSTAINABILITY OF THE PROGRAM

No detailed analyses of the costs of the overall child survival program have been conducted. However, in September 1999, USAID funded a study on the costs and financing of immunization services. This study identified three phases of funding for the vaccination program. During the first phase (1970-1989), many of the direct program inputs (vaccines, supplies and cold chain equipment) were financed by international donors, namely UNICEF, USAID, and WHO. Rotary Club also made contributions of vaccines during this time. During the second phase (1990-1999), direct donor support decreased and was replaced by the MOH investment budget using the World Bank loan funding. This loan is scheduled to end in 2003.

Today, the vaccines are purchased by the government through the Vaccine Independence Initiative (VII), using a revolving fund initially capitalized by USAID. Thus, contributions by donors have evolved from the direct purchase of the vaccines to facilitating the government's purchase and financing of its vaccine supply.⁶⁰ Table 2 shows the evolution of vaccine financing in Morocco over time.

Table 2. Trends in Vaccine Financing in Morocco, 1988-1998 ⁶¹

Year	Government/WB	Rotary/Private Firms	USAID	UNICEF
1988	0	10%	60%	25%
1992	80%	0	0	15%
1995	90%	5%	0	0
1997-8	98%	2%	0	0

Source: Kaddar, Miloud; Mookherji, Sangeeta; DeRoeck, Denise; Antona, Denise; Special Initiatives Report No. 18: Case Study on the Costs and Financing of Immunization Services in Morocco, September 1999.

USAID initially financed the largest portion of the immunization program starting in 1988. UNICEF administered the program and financed a smaller portion of vaccines. At present, the GOM finances almost the entire program through the VII revolving fund and a World Bank loan. In addition, the current MOH five-year plan includes a budget line item for vaccines sufficient to guarantee continued availability for the national program.

V. KEYS TO SUCCESS OF THE CHILD SURVIVAL PROGRAM

Morocco's child survival programs can be considered a success by any measure. As documented by numerous studies and improved indicators, the MOH has applied effective strategies and strong leadership to the problems of child morbidity and mortality. Programs that have been particularly successful are the immunization and diarrheal programs.

Keys to success include:

- Effective and targeted donor assistance. The MOH has consistently partnered with donors to implement child survival initiatives highly effective in reducing child mortality and morbidity such as immunization and diarrheal programs mentioned above.
- Improved delivery of quality child health services. MOH efforts to maintain integrated services over the years have contributed greatly to the acceptability and effectiveness of services. In addition, the MOH is committed to developing and maintaining a high level of child health expertise in both its central and peripheral level staff.⁶² Finally, the establishment of a national quality assurance program in 1999 institutionalizes a “culture of quality” in the Moroccan MOH.
- Access to high quality data from routine information systems or periodic surveys and studies. The MOH has placed great value in using data for decision-making and assuring that high quality data are available. Again in partnership with USAID and other donors, the MOH has greatly improved routine service delivery data quality, conducts regular population-based surveys and analyses, and is training staff in better use of data through the quality assurance and other programs.

VI. USAID’S CONTRIBUTION TO THE CHILD SURVIVAL PROGRAM

While USAID has not been the lead donor in child survival in Morocco, it has made important contributions to the success of the program. According to the US General Accounting Office, USAID’s global contribution to child survival has been greatest in the areas of immunization, diarrheal disease control, nutrition, and ARI.⁶³ USAID investments in family planning have contributed to the goals of reducing infant and child mortality and morbidity and enhancing the system of host country primary health care services.

Crosscutting USAID/Morocco health initiatives that have contributed significantly to the success of the child survival program include: Health Information Systems (HIS) efforts, support for MOH mobile strategies, and quality assurance training.

Finally, the introduction of the Integrated Management of Childhood Illnesses strategy holds promise for continued gains in child health nationwide.

VII. PROGRAM CHALLENGES

Critical challenges facing the MOH directly impact the child survival program. These include:

- Poor access to and under-utilization of basic health services. With the growing number of health facilities in Morocco, this issue is becoming less a problem of geographical access and more a problem of under-utilization. Numerous studies have shown that both urban and rural populations have negative perceptions of the quality of public health services. Most cite poor treatment by health workers or lack of needed service or medication. Whatever the reasons, the 1997 PAPCHILD study showed that of children with diarrhea, only 22 percent visited a public sector facility, and of those that went to a health center, only 29 percent received ORS. Of mothers reporting that their child had a cough or ARI, only 16 percent were taken to a public facility. Forty-four percent of pregnant women receive no prenatal care and 54 percent of all deliveries still take place in the home.
- Poor availability of medications. Problems with availability of medications have been well documented. Among others is the IMCI evaluation cited above and a UNICEF sponsored household survey conducted in 1996 that showed that health centers provided only 16 percent of the medication needed by the population.
- High rates of ARI-related and perinatal mortality. The 1998 ECCD study clearly shows that if the MOH is to continue making progress in mortality decline, management of ARI, and especially pneumonia, must be given priority. Of equal importance is improving medical management of pregnancy, childbirth and the newborn.
- High cost and insufficient financial resources for the expansion of the IMCI strategy to the rest of the country. The expansion of the IMCI strategy to other parts of Morocco requires significant resources at a time when donors are starting to pull back assistance. The MOH fears losing the gains it has achieved in improving children's health status as well as losing the motivation of the health teams at the central and provincial levels.

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APPENDIX A

Key Informants Interviewed

This list contains all the key informants that were interviewed for the retrospective analysis reports (family planning, child survival, safe motherhood, and STI/HIV/AIDS).

USAID/Morocco

Ms. Susan Wright, HPN Officer
Ms. Helene Rippey, Senior Technical Advisor
Ms. Zohra Lhaloui, Project Management Specialist

Ministry of Health (MOH)

Direction de la Population (DP)

Dr. Mostafa Tyane, Director
Dr. Najia Hajji, Chief of Family Planning Division
Dr. Hamid Checkli, Chief of Child Health Division
Dr. Ali Bensalah, Chief of Maternal Health Division
Dr. Mohamed Abouakil, Service Delivery
Dr. Tsouli, Maternal Health Division, INAS Laureate
Mr. Abdelylah Lakssir, M&E Specialist
Dr. El Arbi Rjimati, Child Health Division
Dr. Mohamed Braikat, Head of National Immunization Program
Mr. Mohamed Bimégdi, National Immunization Program
Mr. M. Brahim Ouchrif, Administrative Services
Ms. Rerhryaye Touria, Secretary, Child Health Division

Direction de la Planification et des Ressource Financières Service d'Études et d'Information Sanitaire (SEIS)

Dr. Mohamed Laziri, Director
Mr. Mustapha Azelmat, Chief Engineer and Survey Specialist

Direction de la Epidémiologie et la Lutte Contre les Maladies

Dr. Jaouad Mahjour, Director
Dr. Ahmed Zidouh, Chief of the Epidemiology Surveillance
Dr. Kamal Alami, Chief of STD/AIDS
Dr. Hamida Khattabi, Epidemiologist
Dr. Abderrahmen Filali Baba, Chief of Leprosy (former Chief of STD/AIDS)

Direction des Hôpitaux et des Soins Ambulatoires

Dr. Saida Choujaa-Jrondi, Director
Dr. Darhkaoui, Chief Ambulatory Health

Direction des Ressources Humaines – Division de la Formation

Mr. Achaati, Chief of the Training Division

Ms. Temmar, Midwife Trainer and Responsible for Basic and Continuing Training Program

Dr. Mohamed Zaari Jabiri, Head of Continuing Training Program

Institut National d'Hygiène

Dr. Rajae El Aouad, Chef of Immunology

Sefrou Region

Dr. Riouch, Sefrou Delegate

Marrakech Region

Dr. Mohamed Ben Chaou, Regional Coordinator

Dr. Moulay Lakbir Alaoui, Chief Doctor of SIAAP, Marrakech-Menara

Mr. Mohamed Aniba, Major of SIAAP, Marrakech-Menara

Dr. Zenjali, Physician, El Massira I Health Center

Ms. Ben Jebli Feturio, PSGA Educator

Casablanca Region

Dr. Jaafar Heikel, Delegate, Casablanca – Anfa

Médecin Privé

Dr. Mohamed Zarouf

JSI/Morocco:

Dr. Theo Lippelveld, Chief of Party

Ms. Boutaina El Omari, IEC Program Manager

Dr. Redouane Abdelmoumen, Public Health Specialist

Ms. Malika Lassri, Private Sector Program Manager

FNUAP

Dr. Belouali, Coordinator

CNFRH

Prof. Alaoui, Director

Institut Pasteur Maroc

Dr. Abdellah Benslimane, Director

Dr. Souad Sekkat, Immunology Unit

Ligue Marocaine de la Lutte Contre les MST/SIDA

Dr. Sekkat, President (also former Chief of STDs at the Military Hospital)

ALCS

Dr. Hakima Himmich, Chief of Infectious Diseases
Dr. Amine Boushaba, Prevention Program Coordinator
Dr. Adib Baakly, AIDS Care Program Coordinator
Ms. Sara Garmona, Prevention Program with Prostitutes Coordinator

AMSED

Dr. Malak Ben Chekroun, President
Dr. Issam Moussaoui, Project PASA Coordinator

OPALS

Dr. Nadia Bezaoui, President (former STD/AIDS Chief)

Union Européenne

Mr. Massimo Ghidinelli, Technical Assistant, STD/HIV/AIDS Program

Association Marocaine pour la Planification Familiale (AMPF)

Mr. Graigaa, Director
Ms. Bennamar, Board Member

Commercial Market Strategies (CMS)

Dr. Mohamed Ktiri, Country Director
Ms. Houda Bel Hadj, Chief of Program
Mr. Mohamed Jebbor, Country Manager

Catholic Relief Services (CRS)

Ms. Fouzia Soussi, Administrative Chief

USAID/Washington

Ms. Michele Moloney-Kitts
Dr. Miriam Labok
Mr. William Trayfors
Mr. Carl Abdou Rahmaan
Mr. Gerald Bowers
Ms. Joyce Holfield
Ms. Dale Gibbs

John Hopkins University/Center for Communication Programs

Ms. Sereen Thaddeus

WHO/Egypt

Dr. Mechbal, Representative