

2. BACKGROUND

This section summarizes some of the information that was reviewed to discuss survey objectives, adapt survey forms and develop country-specific survey rules. This information, complemented with the review of other documents, served also as useful, additional background to the analysis and interpretation of the results of the survey. An important reference was the report on the findings of the survey 'Evaluation of the management of childhood illness in public sector IMCI and non-IMCI facilities in four Moroccan provinces' conducted in April 2000².

2.1 SETTING

The population of Morocco was estimated at about 30 million in 2003, with children below 5 years old representing about 10% of the total population. More than half (55%) of the population reside in urban areas and this proportion is expected to continue to increase, as urbanization continues [1]. The country is divided into 16 regions, comprising a total of 73 provinces and 1629 districts. The *circonscription sanitaire*, equivalent to the district, has represented until recently the operational base for the organization of health services provided to the local population. Health services are delivered through a network of 2552 primary health care facilities and through hospitals. The primary health care system, which represents the core of health care provision in the country, mainly includes:

- a) *the rural dispensary*, which provides promotion and preventive services, when run only by a nurse, and also curative services, if staffed with a physician. In fact, a large proportion of dispensaries has recently been provided with doctors and upgraded, to deliver the same range of services of health centres;
- b) *the health centre* (community health centre in rural areas and urban health centre in urban areas), staffed with doctors and providing promotion, preventive and curative services; and
- c) *the outreach services provided by mobile teams* ('*équipe mobile*'), which are supposed to play an important role in the provision of health care, especially in rural areas. They covered some 30% of the population living at more than 10 km from a health facility in 2003, compared with 68% which was covered by facility-based services and 2% which was not covered, in the same year [2].

The referral hospital network includes general and specialized hospital facilities at different levels (provincial, regional and university hospitals).

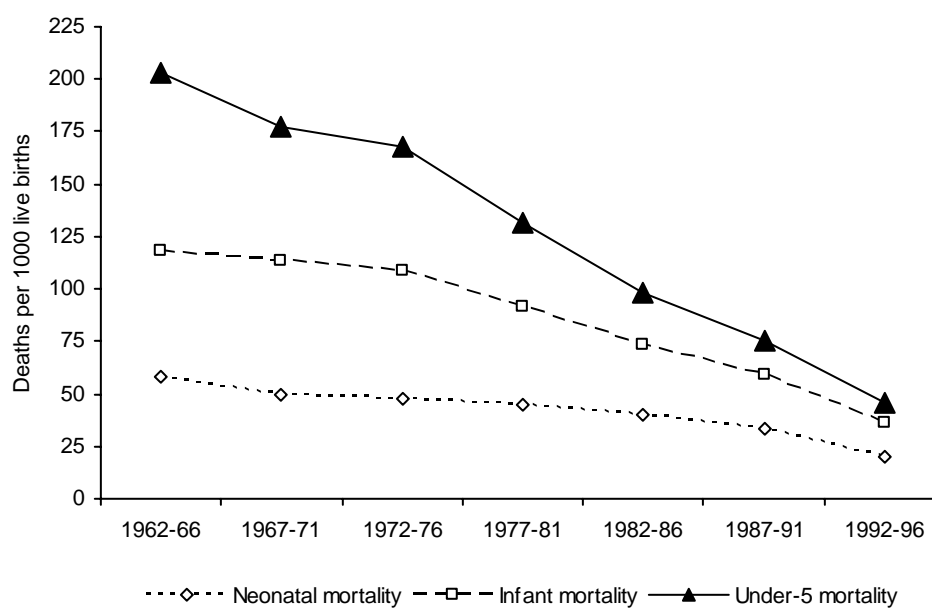
While health services provided by the Ministry of Health are free, large disparities exist with regard to population access and utilization of services by socioeconomic status between the lowest and highest quintiles. WHO estimates of national health accounts suggest that the percentage of the GDP (gross domestic product) for total expenditure on health increased slightly over the 5 years from 1999, to an estimated 5.1% in 2003 [3] and 5.3% in 2005. The general government expenditure on health as a percentage of total government expenditure increased in the same period, to reach 5.5% in 2005 from 4.4% in 1999. It is worth noting that two thirds (66.9%) of the total health expenditure is private and 76.1% of this is out-of-pocket [3]. Current efforts to expand coverage by health insurance are in principle expected to reduce the current level of direct household contribution to health expenses and improve financial access to care.

2.2 CHILD HEALTH INDICATORS

Infant and under-5 mortality rates have continued to decrease in Morocco over recent decades (Fig. 1). The decrease has been more marked in the post-neonatal period and older age groups, as in many other countries in the Eastern Mediterranean Region. Data from the Demographic and Health Survey (DHS) related to the period 1988-1992 showed neonatal deaths to account for 41% of all under-5 deaths, similar to the average in the Region. However, the national

² Evaluation of the management of childhood illness in public sector IMCI and non-IMCI facilities in four Moroccan provinces, April 2000, Ministry of Health, 29 May 2001

survey on population and family health (part of the League of Arab States' Pan Arab Project for Family Health or PAPFAM), conducted more recently in 2003-2004, indicated that this percentage



Source: Ministry of Health (based on demographic surveys)

Fig. 1. Trends in neonatal, infant and under-5 mortality rates in Morocco

may recently have become significantly higher³ [4]. The Child Mortality Coordination Group, established by UNICEF, WHO, the World Bank and the United Nations Population Division to carry out collaborative assessments of under-5 mortality rates in countries, estimated the under-5 mortality rate in Morocco at the level of 43 deaths per 1000 live births for 2004⁴. Estimates for 2005 are under-5 and infant mortality rates of 40 and 36 deaths per 1000 live births, respectively [5]. This would suggest an approximate, average annual mortality reduction rate of more than 5% between 1990 and 2005. The possibility of Morocco reaching Millennium Development Goal no. 4 on reduction of under-5 mortality by two thirds by 2015 will depend on whether these trends are sustained, as greater efforts are required to reduce mortality further as rates fall.

Typically, there are differences in under-5 mortality rates between: a) urban and rural areas⁵, with the rate being almost twice as high in rural areas as in urban areas (Fig. 2); b) regions, with the highest rate in Meknès-Tafilalet being about four times as high as in Casablanca, in 1997 (Fig. 3); and c) mother's education level, with under-5 mortality being more than twice as high in children of illiterate mothers as in children of mothers with secondary or higher education (63 per 1000 live births vs 27 per 1000 live births) [4]. Disparities exist also in access to care, with urban areas reportedly having almost 100% access compared with 65% in rural areas [6].

These differences were taken into consideration when planning for the implementation of the Integrated Management of Child Health (IMCI) strategy in the country (see 2.3).

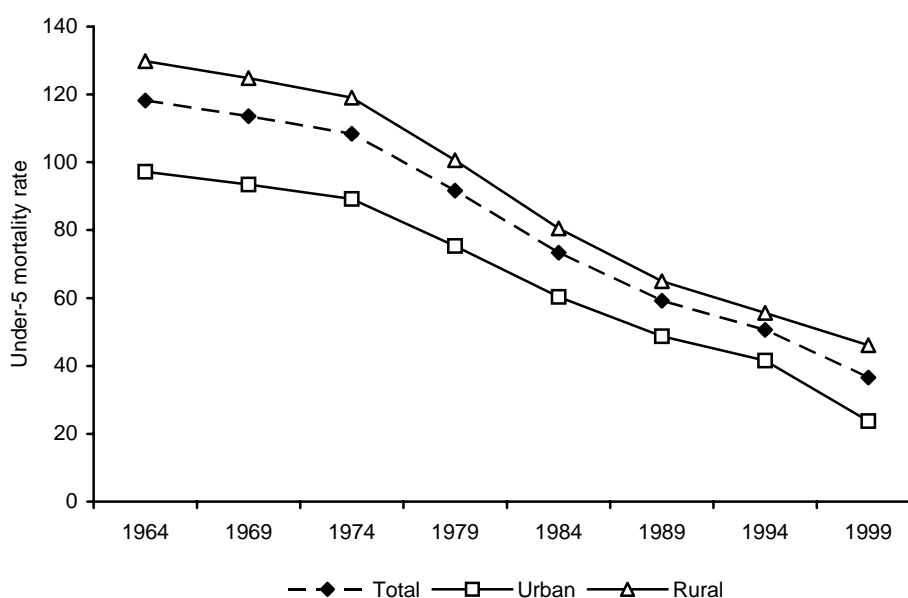
Common communicable diseases, including acute respiratory infections and diarrhoeal diseases, are the leading causes of under-5 mortality in the country: they are responsible for half

³ The PAPFAM survey in 2003-2004 reported under-5 and neonatal mortality rates of 47.4 and 26.9 deaths per 1000 live births, respectively, for the mid-point of the 5-year reference period preceding the survey date, with deaths in the neonatal period thus representing 57% of all under-5 deaths.

⁴ Mortality rates may differ according to the source and method used to measure them.

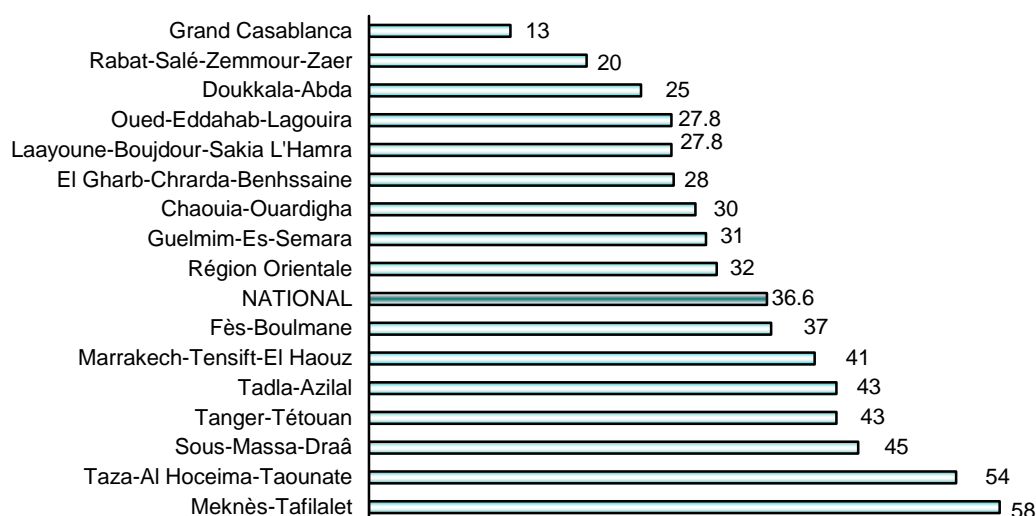
⁵ The PAPFAM study reported under-5 mortality rates of 62.5 per 1000 live births in rural areas compared with 32.5 in urban areas. Maternal mortality ratios are also higher in rural than urban areas.

(50%) of all deaths in this age group, followed by perinatal causes (37%) [7]. Acute lower respiratory infections represented 37.8% of consultations for children under-5 in 1997 [8]. Protection at birth against tetanus was reported to have reached 87% in 2006 [9]. Nutrition indicators measured in the PAFAM survey [4] showed 18.1% of children under-5 to be low height-for-age or stunted (more than two standard deviations below the median for the international reference population aged 0-59 months), 9.3% low weight-for-height or wasted and 10.2% low weight-for-age. There was a higher prevalence of malnutrition in rural than urban areas and substantial differential by economic quintiles: stunting was 24% in rural areas vs 13% in urban areas and 29% among the poorest (lowest quintile) vs 10% among the richest (highest quintile); wasting was 11% in rural children vs 8% in urban children and 13% among the poorest vs 6% among the richest; finally, low weight-for-age was 14% in rural children vs 7% in urban children and 17% among the poorest vs 4% among the richest.



Source: Ministry of Health

Fig. 2. Trends in under-5 mortality rates by residence in Morocco



Source: Ministry of Health

Fig. 3. Under-5 mortality rates by region, Morocco

According to the same study, the rate of exclusive breastfeeding for up to 6 months was 31%—with 52% of newborns put to the breast within an hour of delivery—and the rate of complementary feeding at 6-9 months was 66% in 2003 [4]. Bottle-feeding was introduced at 2 months of age in as many as 38% of infants and the rate of use of teats in children less than 6 months was 46%. A regional study carried out in 1996 found signs of sub-clinical (laboratory)⁶ vitamin A-deficiency in 40.9% of children aged 6 to 71 months old [10]. The PAFAM study reported that vitamin-A rich food was consumed by 62% of the under-5 children [4]. Finally, 31.6% of children aged 6 to 59 months were estimated to have anaemia (haemoglobin level < 11 g/dl) in 2001 [11].

2.3 THE RESPONSE: AN INTEGRATED CHILD HEALTH CARE STRATEGY (IMCI)

The selected child health indicators in Morocco described above showed that, while under-5 and infant mortality trends were downward, mortality rates still remained moderately high and child nutrition and feeding indicators warranted a more holistic approach to improve the child health situation in the country. The strategy on Integrated Management of Child Health (IMCI) was formally introduced in Morocco in 1997 as a strategy appropriate for the situation in the country: it addressed the most important causes of mortality and morbidity [7] and proposed an integrated approach that was in line with the primary health care approach. It was based also on the need to improve the quality of health services delivered at primary health care level and for an approach to strengthen health systems at that level, compensating for the weakness of child health-related vertical programmes implemented until then, including the need for better coordination. The strategy was included in the 5-year national health development plan for the period 2000–2004 and confirmed again also in the 2005–2009 plan.

The responsibility of coordinating the IMCI strategy was assigned to the Child Health Service in the Maternal and Child Health Division of the Population Directorate (*Direction de la Population*). The main steps of the IMCI process in Morocco from introduction through expansion are shown in Annex 2. Over the years, the strategy has expanded to cover over 654 health facilities (i.e. 26% of all target outpatient primary health care facilities) in 406 (25%) of 1629 districts located in 32 provinces, by the end of 2006 (Annex 3). Implementation was seriously slowed down by financial constraints in the years 2000 and 2003. Taking into due consideration the marked differentials in under-5 mortality rates between the provinces and the decision to prioritize those with higher mortality, the strategy was first introduced in two provinces with higher under-5 mortality rates (Meknès El Menzeh, located in Meknès Tafilalt region, and Agadir Ida Outanane, in Sous Massa Daraa region) in the period 1998–2000. Expansion first started with provinces in the same two regions, in 2000, and then covered provinces located in other regions, using the same criterion of higher mortality while prioritizing rural poor populations. The main targets for training have been doctors and paramedical staff (nurses) working at rural dispensaries and health centres: a total of 1836 doctors and nurses were trained in IMCI by the end of 2006 (Annex 4).

Among the main adaptations included in the Moroccan IMCI guidelines (revised in 2006), compared with the original, generic WHO/UNICEF clinical guidelines, are: the recent inclusion of the first week of life; the extension of routine feeding assessment to children with persistent diarrhoea (in addition to those less than 2 years old and those with anaemia and low weight), the inclusion of wheezing, the management of throat problems (with screening of all children for throat problems), the separation of the management of anaemia and malnutrition; the adaptation of the immunization schedule, with inclusion of hepatitis B and, very recently, Hib vaccines; the extension of the recommendation for exclusive breastfeeding to the first six months of life; the revision of first- and second-line treatment protocols based on local antibiotic susceptibility patterns and national guidelines; and the inclusion of referral forms. Furthermore, a 'healthy child' module and related training materials were developed and tested in July 2006.

⁶ Retinol level \leq 200 μ l.

The main focus of the strategy was initially on the health system.

- ❖ *Improving health providers' skills:* 88 clinical training courses on IMCI were conducted for more than 1800 people from health centres and rural dispensaries by the end of 2006. Training centres had been set up to decentralize IMCI training at provincial level. The duration of training courses changed over time from 11 days for courses at national level to 12 days for those during the pilot phase, 10 days at the beginning of expansion and, more recently, 7 days for doctors and 4 days for nurses (Annex 5). When feasible, especially in relation to the availability of funding, trained staff were followed up through skill reinforcement visits after the training course ('IMCI follow-up visits'). In general, the visits showed that health providers were satisfied with the quality of training, used the IMCI guidelines and had reinforced their skills, including the identification of certain key signs, feeding assessment, identification of feeding problems and counselling of mothers (Annex 6, Fig. A1-A3). Also, mothers were shown to be satisfied with the services provided to their sick children. As mentioned earlier, one important issue was the lack of financial resources in 2000 and 2003 to support training courses and follow-up visits and the high attrition rate of trained staff, which made training efforts more demanding [2]. Finally, the IMCI outpatient approach was introduced in the teaching programmes of paediatric departments of four medical schools and child health and paediatrics of five nursing schools ('Training institutes for health career'), to address the issue of long-term sustainability.
- ❖ *Improving the health system:* The national list of essential medicines was reviewed to ensure that all medicines needed for IMCI were included. While medicines were provided free at health facilities, their availability was reportedly limited, this potentially reducing access to care for poor children when the facility ran out of the allotted medicines. As mentioned earlier, the expansion of the health insurance scheme was an attempt to address this issue, at least partly. A guide on therapeutic protocols was developed, including also the IMCI protocols, to rationalize the use of medicines. Efforts were made to ensure medicine supply especially to far-flung rural areas and improve referral, also through IMCI referral forms. Starting January 2003, the health information system was adapted to IMCI and introduced in 31 provinces implementing IMCI, after testing in Meknès El Menzeh province. One of the constraints was that at that time, IMCI had not yet been implemented throughout the country. As a result, two different information systems are in use until IMCI has been implemented in all health facilities.
- ❖ *Improving family and community practices:* The IMCI community component was started in 1999, during the early implementation phase. A guide on the community approach was developed and tested in three areas, 153 health providers from 9 provinces were trained, five baseline surveys to assess the community situation and plan were conducted in five provinces, respectively, and 89 community health workers were trained in health education.

2.4 CONSIDERATIONS TO UNDERSTAND THE OBJECTIVES OF THIS EVALUATION

A well structured health facility survey was conducted in Morocco in 2000, as part of the evaluation of the early implementation phase of IMCI. A sample of 32 health facilities in two provinces implementing IMCI was compared with 32 facilities in two other provinces not implementing IMCI; data from a total of 478 children aged 2 months up to 5 years old were included in the analysis. The overall conclusions of that survey were that IMCI-implementing facilities were performing significantly⁷ better than non-IMCI implementing facilities for the majority of the indicators considered. This provided the basis for the Ministry of Health policy decision to expand the implementation of the IMCI strategy to the rest of the country. At the time of planning for a new survey, the fact that such a survey comparing IMCI vs non-IMCI implementing facilities had already been conducted was taken into account, as were considerations

⁷ In statistical terms.

related to the intrinsic complexity of conducting similar studies again (with comparison with control areas), the requirement for more than doubling the facilities to be included in a new similar survey to enable meaningful comparisons between groups (because of the need to have narrow confidence limits to show differences), and the substantial resources and time involved. The survey in 2000 required 4 months of preparation (planning from November 1999 to March 2000) and 4 months of implementation (from surveyor training to preliminary analysis, carried out in July 2000). As that survey had already demonstrated the advantage of implementing IMCI, the focus of this survey was to evaluate the quality of outpatient child care provided by IMCI-trained doctors when implementing the strategy to scale in the country. It is acknowledged that, when strategies and their interventions are brought to scale under routine circumstances, resources—and, often, interest, commitment and support—may differ substantially from the initial phase and this influences overall performance. Studies on the impact of interventions on under-5 mortality are research undertakings, highly complex and require a different design. They were therefore out of the scope of this evaluation.