Saving the Lives of Mothers & Children

Rising to the Challenge

Yemen

I. Introduction

Yemen is located in the southern part of the Arabian Peninsula and comprises 21 governorates. The country is characterized by an irregular terrain that accounts in large part for the dispersion of the population over more than 130 000 settlements. Yemen has a population of 24.5 million (2012), 71% of which live in rural areas.

Sociodemographic characteristics

The 24 million population is young, with 44% of people under the age of 15 [1]. The total fertility rate in Yemen has decreased from very high (7.5) in the early 1990s to 5.2 children per woman in 2006. The sharpest decline is in the 15-19 year age-group.

Total estimated under-5 population (000) [2010] [1]	4 057
Population growth rate [2011] [2]	3.0%
Estimated number of births (000) [2010] [1]	969
Percentage of population that is rural [2011] [2]	71%
Birth registration coverage [2006] [3]	39%

[1] Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat, *World Population Prospects: The 2010 Revision*, http://esa.un.org/unpd/wpp/index.htm (accessed on 14 October 2012)
[2] WHO Regional Office for the Eastern Mediterranean, *Demographic, social and health indicators for countries of the Eastern Mediterranean, 2012*, based on country reports
[3] The Strategy to improve and update the civil registration 2008-2015

Yemen is ranked 154 out of 187 countries on the UNDP human development index, with 18% of the population living below the international poverty line of US$ 1.25 (in purchasing power parity terms) a day[1].

The country has the second highest total fertility rate in the Eastern Mediterranean Region after Somalia. It is also among the 10 countries in the region with highest child and maternal mortality rates. Despite the efforts of the authorities and civil society, Yemen is falling behind the Millennium Development Goals (MDGs) which the international community fixed for 2015.

This document is meant to provide an analysis of the current status of maternal, newborn and child health in the country to highlight the reasons why the country is not on track to achieve the MDG 4 and5 if current trends continue, and suggest possible solutions and the way forward to accelerate the progress towards MDGs 4 and 5.

Political situation:

Essential government services, such as health care, social welfare, education, electricity and water supply, have been affected negatively by the 2011 events, compounded by rising commodity prices. This has exacerbated severe and widespread chronic vulnerabilities in Yemen, particularly with regard to nutrition, food security, and access to water, social welfare and healthcare. This comes at a time when the economy is in recession, affecting most vulnerable groups – women, children and youth.

II. Maternal and child health situation analysis

II-1 Health system

The public health sector is organized in four levels. The first level consists of 2929 primary health care units and 891 health centres; the second level consists of 184 district hospitals, the third level of 53

[1] Human development report, UNDP, 2011

general hospitals and the fourth level of 2 specialized referral hospitals[2]. Only 68% of the population has access to local health services[3].

Nearly 80% of these health facilities are in the rural areas, where about 20% of the health workforce is working, while 20% of health facilities are located in urban areas, where 80% of the workforce is are located.

According to the National Health Strategy 2010–2025, many of the health facilities are lacking equipment, staff, and the adequate operational budgets. 24% are without equipment, 17% are without operational budgets, and 7% are deprived from health staff. This situation reflects directly on the accessibility and utilization of the health services including medical supplies. The governmental budget allocated for medicines covered only 10% of the needs with a 90% gap; accordingly more than 85% of health facilities lack medicines. There is severe shortage of female health staff, particularly in rural areas which adds to the problem of access to the services.

In terms of availability, for 10 000 population there are 3 physicians, 7.1 nurses and midwives, 7 hospital beds and 1.6 PHC posts (2011).[1]

Emergency obstetric and neonatal care services are partially provided only in 28% of hospitals and 41% of health centres.

The private sector is expanding rapidly: 92 private hospitals were operating in Yemen in 2002 compared to 167 hospitals and 746 private health centers in 2012[4]. The private health sector is not quite independent from the public sector since many of its employees and/or owners are working in the public sector. This sector is not really regulated and does not share performance statistics with the Ministry of Public Health and Population.

II-2 Maternal, neonatal and child health (MNCH) policies and strategies

Health of women and children is the key to progress on all development goals; investing more in their health will help in building peaceful, productive societies and reduce poverty. With this vision, the country has adopted a number of policies and strategies in favour of maternal and child health including:

- national health policy 2010-2025
- costed national implementation plan for maternal, neonatal and child health (MNCH)
- regulation on task shifting to the midwifery and general practitioner personnel.
- national reproductive health strategy 2010 – 2015
- national newborn health strategy
- national strategy for early childhood development 2011-2016
- national strategy for children and youth 2006-2015
- national strategy for nutrition 2011-2015
- Presidential decree on free-of-charge deliveries, 1998
- regulation on home-based MNCH care
- free provision of family planning services
- reproductive health commodity security
- International Code of Marketing Breast milk Substitutes
- community treatment of pneumonia with antibiotics
- introduction of rotavirus vaccine
- introduction of pneumococcal vaccine
- transitional plan 2013-2015 targeting maternal and child health as part of its component.

Despite the adoption of these strategies and policies, their implementation varies a great deal: the policy on free-of-charge deliveries is not being implemented and the strategies components are still lagging due

[2] Annual Statistical Health Report, MOPHP, 2011
[3] WHO Regional office for the Eastern Mediterranean, *Demographic, social and health indicators for countries of the Eastern Mediterranean, 2012*, based on country reports
[4] Department of Private Institutions, MOPHP, 2012

to shortage of resources, including financial, human and institutional capacities. Ministry of Health data shows that some of these policies have had positive outcomes on some health indicators, such as increase in the use of long-term contraceptives and reduction of child morbidity. Other policies have not been adopted by the country, such as:

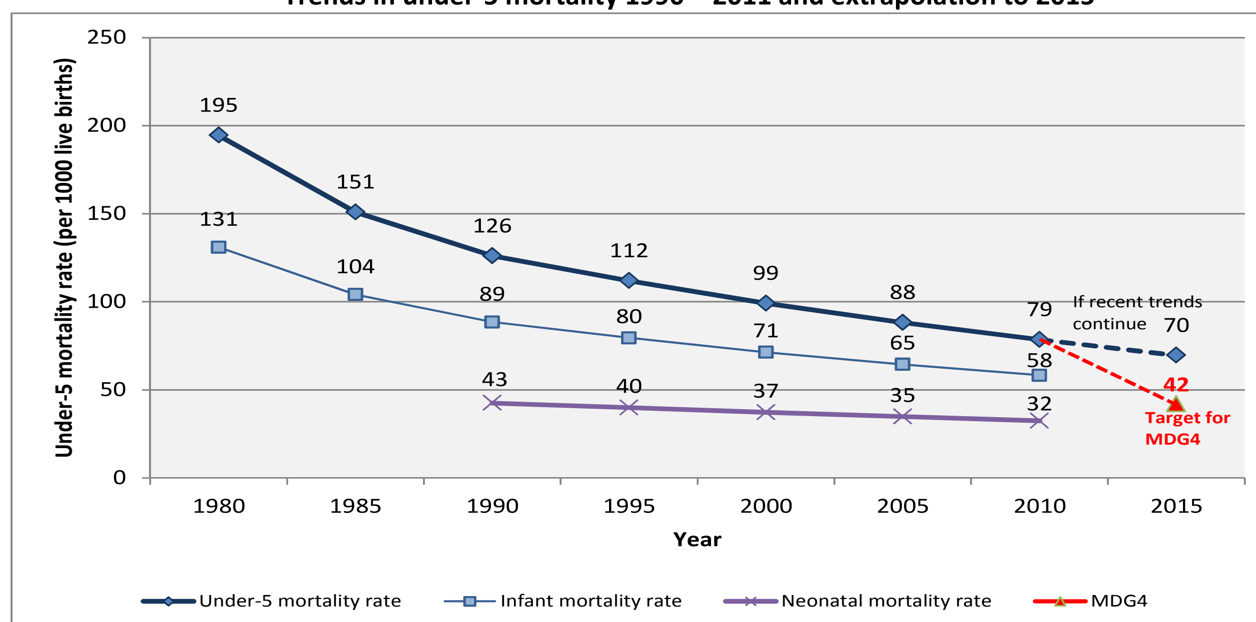
- notification of maternal deaths.
- legal minimum age for marriage.
- public-private partnership.

II-3 MNCH current status

II-3.1 Maternal, newborn and child mortality

During the past two decades, under-5 mortality has declined from 126 to 72 per 1000 live births resulting in a 39% reduction between 1990 and 2011. The neonatal mortality rate has shown slow decline from 43 to 32 per 1000 live births with a reduction of 25% between 1990 and 2011 [5].

Trends in under-5 mortality 1990 – 2011 and extrapolation to 2015



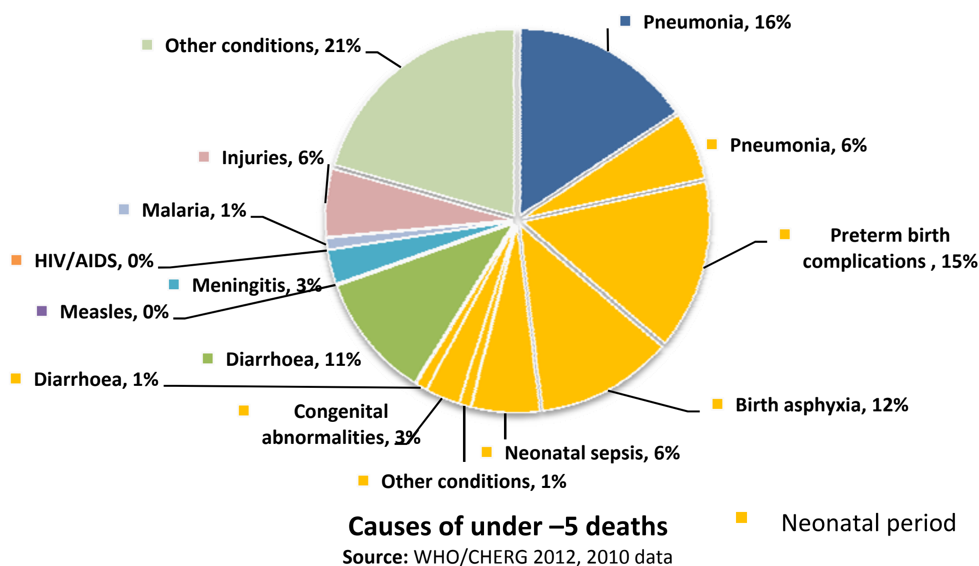
Source: United Nations Inter-agency group for child mortality estimation (IGME)- *Levels & Trends in Child Mortality, Report 2012* - WHO / UNICEF / World Bank/ UNPD and independent experts. These figures are computed by the United Nations agencies and are not necessarily the official statistics of the Member State, which may use alternative methods of estimation of mortality. All Member States have undergone official country consultation on these estimations.

Although 43% of under-5 deaths occur in the neonatal period in Yemen, most of the deaths occur in the post-neonatal period. Equal focus should be given to address deaths in both periods of life.

Furthermore, mortality data among under-5 children in Yemen show evident inequities: children in the poorest households were more than three times more likely to die than those in the richest households and children in rural areas were 1.5 times as likely to die as those in urban areas.

Under-5 children in Yemen are still dying from preventable causes: infectious diseases, such as pneumonia, diarrhoea, neonatal sepsis and malaria, accounted for 40% of all deaths in children under 5 years in Yemen in 2010. Prematurity was responsible for 15% and birth asphyxia for 12% of under-5 deaths.

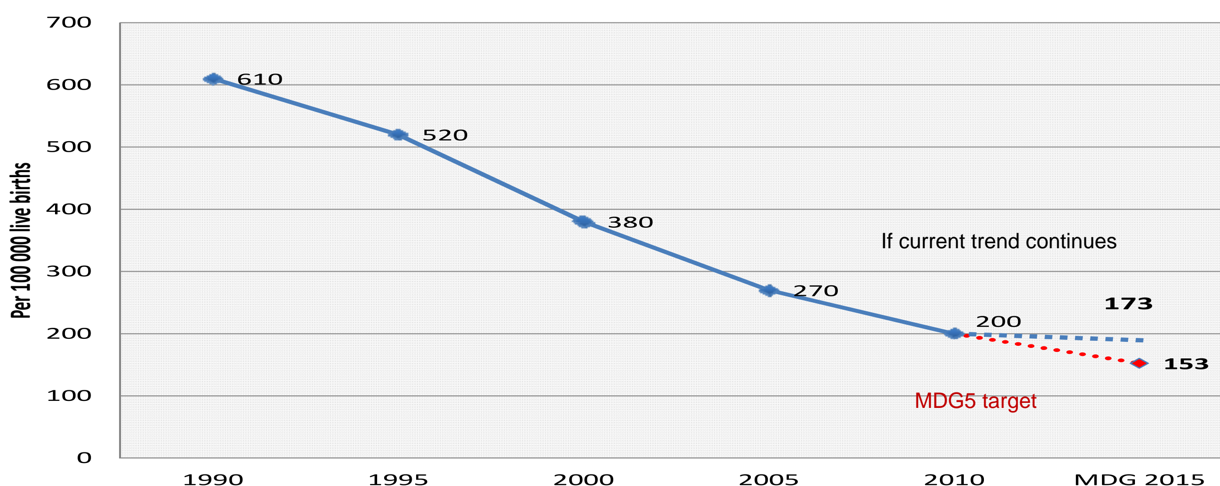
[5] UN Inter-agency group for child mortality estimation (IGME), *Levels & Trends in Child Mortality, Report 2012* (estimates for 2011)



Causes of under –5 deaths
Source: WHO/CHERG 2012, 2010 data

The country has also demonstrated steady and significant decrease in maternal mortality, from 610 to 200 maternal deaths per 100 000 live births, resulting in a 67% reduction between 1990 and 2010[6]

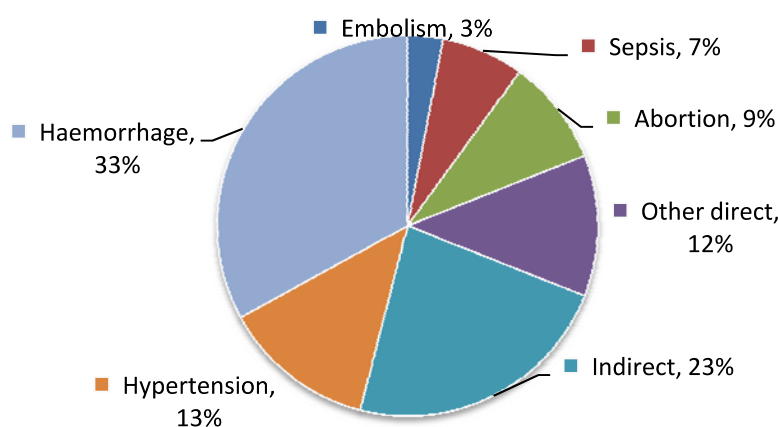
Trend in maternal mortality 1990 – 2010 and extrapolation to 2015



Source: WHO, UNICEF, UNFPA, World Bank estimates, 2012 Yemen National reproductive health strategy 2011–2015. Ministry of Public Health and Population 2011.

The main direct causes of maternal death in Yemen are: haemorrhage, pregnancy-induced hypertension, obstructed labour, infection and complications of unsafe abortion. They account for 62% of maternal deaths. Results of the Yemen Demographic and Health Survey 2013 will shed more light and inform current status.

[6] WHO, UNICEF, UNFPA, World Bank estimates, 2012; Trends in maternal mortality: 1990 to 2010.



Causes of maternal death

Source: Khan et al. WHO analysis of causes of maternal death: a systematic review. Lancet 2006

II-3.2 Maternal, newborn and child morbidity

Malnutrition among under-5 children is a major health problem in Yemen and presents a high risk for mortality. More than half of pregnant women suffer from anaemia which also represents high risk for mortality.

Maternal:	
Anaemia in pregnant women (2010)[1]	51.0%
Newborn:	
Low birth weight in newborns [2]	32.0%
Child:	
Children under 5 with suspected pneumonia (2006)[3]	13.0%
Children under 5 with diarrhoea (2006)[3]	34.0%

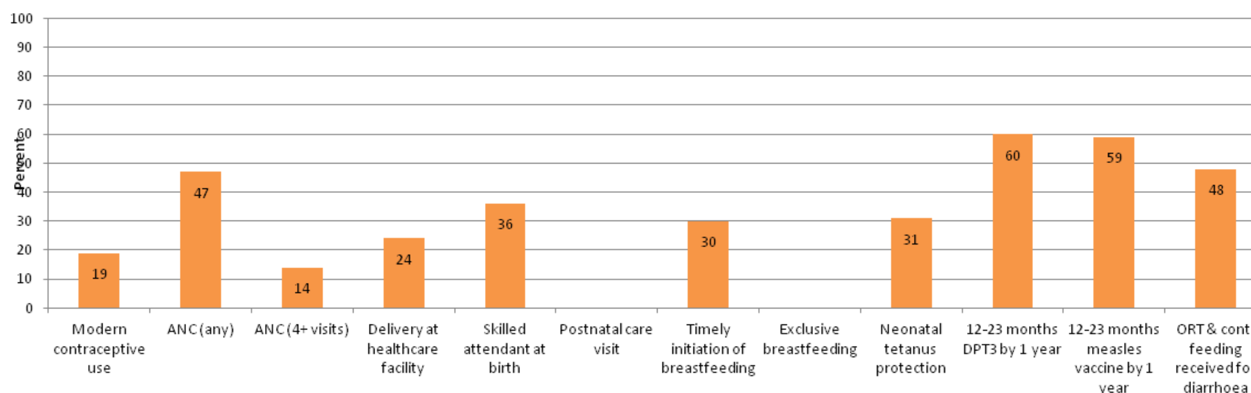
Nutritional status in children under 5 (2011 data)[4]	
Stunting	57.9%
Wasting	15.9%
Underweight	42.9%

[1] WHO Regional Office for the Eastern Mediterranean: Regional Health Observatory. Website: www.http://rho/rhodata/ accessed on 27 January 2013
[2] WHO Regional Office for the Eastern Mediterranean, *Demographic, social and health indicators for countries of the Eastern Mediterranean, 2012*, based on country reports
[3] MICS, Yemen 2006
[4] Food security survey 2011-WFP

The country has adopted an iron supplementation policy for pregnant women during ante-natal care visits. However, due to lack of medicines, the implementation of this policy is limited. Fistula, reproductive tract infections and vaginal prolapse are among the common morbidities in pregnant women.

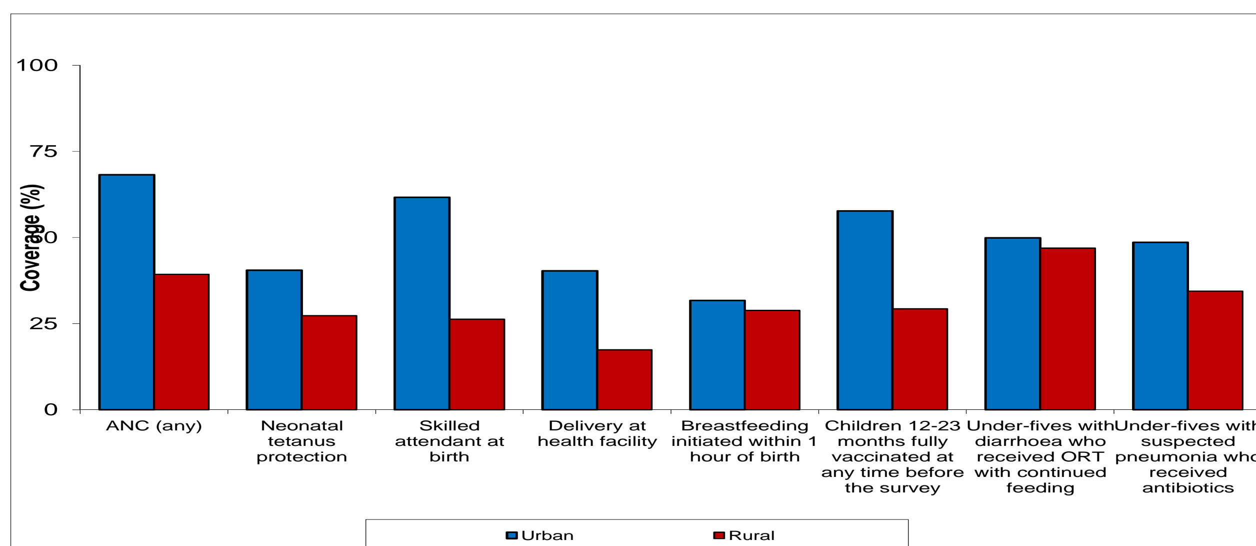
II-3.3 Coverage indicators across the continuum of care

According to the Multiple Indicator Cluster Survey 2006 (MICS), coverage rates of key maternal, newborn and child health intervention is low (<50%) for most interventions. These coverage levels do not allow accelerated reduction of under-5 and maternal mortalities; however, over 80% coverage of immunization was achieved due to the government commitment and resulted in a great reduction of child mortality.



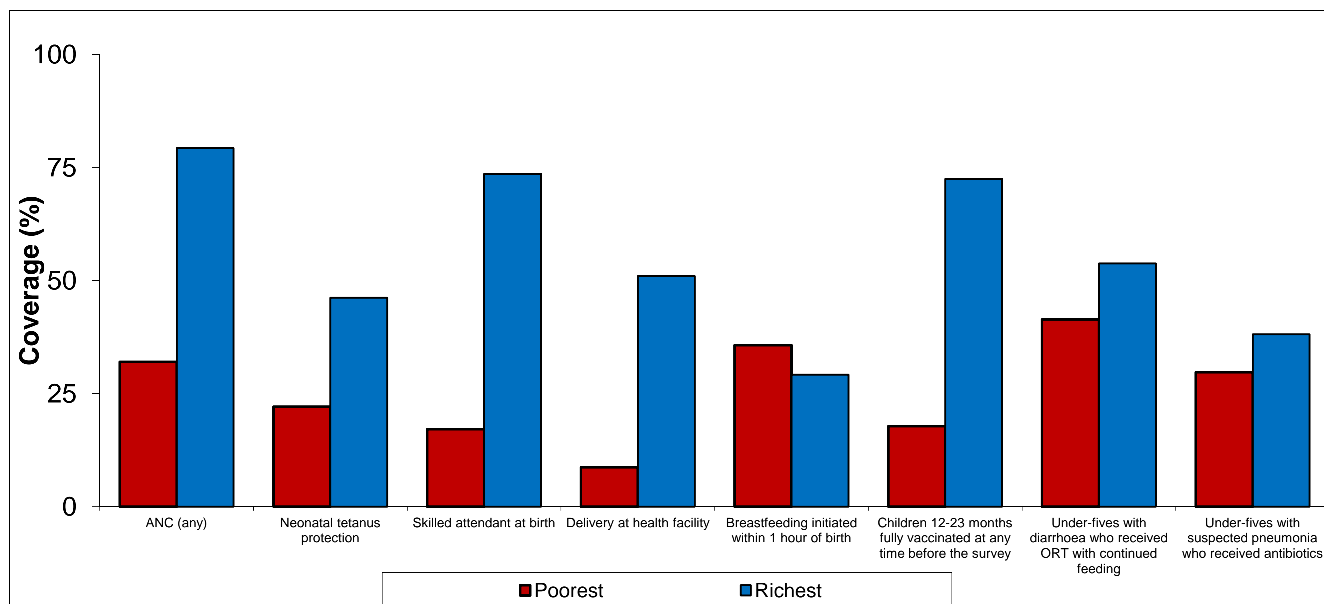
II-3.4 Inequities in coverage of indicators across the continuum of care

For the key maternal and child health indicators measured in MICS 2006, coverage was consistently lower in rural than urban areas. Skilled birth attendants are 3-fold higher in urban than rural areas and deliveries at facilities in urban areas are twice as high as those in rural areas.



The MICS 2006 also revealed significant inequities in the coverage of key maternal and child health interventions between households in the highest wealth quintile (richest 20%) as compared to those in the lowest quintile (poorest 20%). There was a 6-fold difference in delivery at health facility, a 4-fold difference in skilled attendance at birth and more than 2-fold difference for antenatal care visits and neonatal tetanus protection. For child health interventions, there was a 4-fold difference for children fully vaccinated.

Further acceleration of reduction rates of mortality among children and mothers cannot be achieved unless these inequities are addressed.



II-4 Towards MDGs 4 and 5

Yemen has made efforts to respond to the existing MNCH situation in the country. These include:

- a high level of political commitment to maternal and child health resulting in MNCH plans being included in the national health plans and costed (but government contribution is limited);
- signatory to the MDGs;
- placing MNCH at the top of the priorities of the Ministry of Public Health and Population for work with partners which has resulted in allocation of external funds to these two areas of work;
- bilateral agreements with USAID, GIZ, KFW, EKN, EC, JICA and the World Bank and plans of action developed for implementation;
- maternal and child health as the main components of the joint plans with United Nations organizations (WHO, UNICEF and UNFPA);
- adoption and implementation of a package of interventions targeting the main causes of child and maternal deaths based on the global cost effective and evidence-based interventions, delivered in an integrated way. Research has shown that these interventions have the highest impact on mortality.
- a transitional and acceleration plan initiated by the Ministry of Planning and International Cooperation.
- a national emergency team training plan for emergency obstetric and neonatal care (EmONC) services developed and initiated.
- development of a health manpower management strategy started.
- maternal and neonatal health and family planning guidelines.

II-4.1 Child health

A set of interventions targeting the main causes of under-5 mortality in Yemen has been packaged and implemented under the umbrella of the Integrated Management of Childhood Illness strategy (IMCI). The three components of the IMCI strategy have improved the quality of child health care services at primary health care level, the health system-related elements and child health-related family and community practices.

Package of child health key cost effective interventions implemented at primary health care level

- Case management of neonatal sepsis, pneumonia, diarrhea and jaundice.
- Child case management:
  - pneumonia case management and prevention
  - diarrhea case management and prevention
  - malaria case management and prevention
  - malnutrition case management
- Early initiation of breastfeeding
- Promotion of exclusive breastfeeding
- Promotion of sound complementary feeding
- Improving care seeking
- Increasing immunization coverage
- Vitamin A supplementation.

Different implementation approaches were adopted to overcome the problem of the 68% access to primary health care:

- at primary health care facilities: implementation coverage at 62% of primary health care facilities was achieved;
- through the outreach mobile teams providing integrated services including maternal, child health and nutrition;
- at community level through the community health workers.

In general, the implementation coverage of these interventions is still low which has limited access to them and limited the reduction in under-5 mortality. In addition, following the events of 2011, many facilities implementing IMCI have been closed and there is an extreme shortage of medicines, which has also led to reduction in implementation coverage.

The country provided a lot of focus to the immunization programme: Yemen has witnessed remarkable improvement in routine vaccination coverage during the past few years. It increased from 66% DPT3 coverage in 2003 to 87% Penta3 coverage in 2010. With the internal political situation, Penta3 coverage has dropped to 81% in 2011 with 43% of districts reporting coverage of <80% in 2011.

With GAVI Alliance support and government commitment to co-financing, Yemen successfully introduced Hib vaccine in 2005, pneumococcal vaccine early in 2011 and rotavirus vaccine in August 2012. The latter two vaccines address the two major causes of under-5 deaths (pneumonia and diarrhoea) and will have significant impact on reduction of under-5 mortality and contribute to achieving the target of MDG 4 only if high equitable routine vaccination coverage is achieved.

II-4.2 Maternal and neonatal health

The Ministry of Public Health and Population, with support from the development partners, developed and adopted a national reproductive health strategy 2011-2015 focusing on two components; maternal and neonatal health and family planning, aiming to attain MDGs 4 and 5. The strategy outlines priority directions for improving the quality, availability and utilization of maternal and newborn health care and family planning services. The strategy document relates the current situation of reproductive health including analysing determinants that could impede and/or facilitate service provision at different levels of the health system, describes national reproductive health priorities that the strategy should address, states strategic results-oriented axes, and suggests a LogFrame matrix and a results-oriented 5-year costed action plan. The package of interventions accorded to maternal and newborn health includes the following interventions:

- family planning
- antenatal care
- skilled birth attendants
- essential obstetric care
- emergency obstetric and neonatal care
- post-natal care.

This package has been implemented in:

- primary health care facilities,
- referral, general and districts hospitals
- communities by community volunteers.

These are accompanied by activities for raising community awareness about life-saving practices, including involvement of religious and community leaders, women's groups and youth and media.

The strategy also incorporated building of the reproductive health commodity security (RHCS) system, which is in process. The 2011-2012 events in the country have adversely affected implementation of the strategy's planned activities, and many health facilities have closed abandoned due to severe scarcity of resources as well as mismanagement.

II-4.3 Can Yemen reach the targets set by MDG 4 and 5 by 2015?

The average annual rate of reduction (AARR) of under-5 mortality between 1990 and 2011 was 2.4%. With this reduction rate, the expected mortality rate by 2015 would be 70 per 1000 live births compared with the rate targeted by MDG 4 which is 42 per thousand live births. In order to achieve MDG 4, an AARR of 15% between 2011 and 2015 would be required, which is a rather high rate. Therefore, it could be concluded that, with the current trend, Yemen is unlikely to achieve MDG4.

The average annual percentage change in maternal mortality is −5.3% between 1990 and 2010. With the current political situation, Yemen is unlikely to achieve MDG 5 and essential efforts are required to make similar progress in reducing maternal mortality.

III. Feasibility analysis

- There is a shifting of the current political commitment in the country to emergency care given the political situation.
- There are donors interested in maternal and child health in Yemen and ready to put in adequate investment if good plans exist.
- The current low access to primary health care care requires huge investment in expanding the infrastructure to ensure access to maternal and under-5 children to quality services. This is a difficult task to achieve – at least in the short term – given the fact that the population is scattered over 130 000 mountainous and rural settlements.
- To compensate for the low access, the country would need to invest more in the expansion of the outreach services, namely mobile teams. However as these services require huge financial resources to be implemented and sustained, they can be considered mostly as a temporary measure.
- The community approach for maternal, child health and nutrition is another way to increase services; it requires a long time to reach wide coverage, adequate financial support to provide required supplies and supervision to ensure good quality.
- Substantial investments are required to strengthen key related health system elements, in particular the serious shortage of essential medicines for mothers and children, non-functioning health information system and weak supervisory system, which affect both the quality and the scaling up of service delivery.
- Inadequate numbers of qualified human resources and high turnover of trained staff do not enable implementation of good quality services to mothers and children. Many health facilities are run by health workers and not physicians, and investment is needed in building their capacity.
- Proper implementation of the reaching every district (RED) approach especially in districts with vaccination coverage of <80%, and ensuring integration of EPI in all health care delivery points require high commitment and investment from the country to achieve the target of 90% coverage with routine immunization at national level and 80% coverage in each district.

- The estimated level of scaling up requires substantial funds. Advocacy, strong collaboration and coordination among the different partners will ensure the flow of funds to the country and accelerate progress towards the MDGs.
- While efforts to mobilize substantial resources to accelerate progress towards the MDGs are important, due consideration should be given to sustainability of the supported approaches beyond 2015.

IV. Is it achievable?

With the current trends of reduction in mortality, funds and human resources allocation, Yemen is most unlikely to achieve MDGs 4 and 5. However, if the country makes a high-level commitment and concerted efforts to accelerate the implementation of the cost-effective evidence-based packages of interventions in full collaboration with partners, allocating the required human and financial resources in addition to the governmental human and financial resources, the country will be able to accelerate progress towards the MDGs and more lives of mothers and children will be saved.

V. Conclusions: key drivers

With the active support of the international community, the country should aim at accelerating the pace of reduction of under-5 and maternal deaths by scaling up interventions in light of the coverage target set by MNCH programmes at the Ministry of Health. Although MDGs 4 and 5 are unlikely to be achieved, the accelerated pace of reduction will bring the country closer to the set targets.

This acceleration requires the following.

- Resuming the high level of political commitment to child and maternal health, considering it at the top of the country's priorities and as a major indicator of national development.
- Putting the related policies and strategies into effect.
- Providing the required financial resources to implement the national MNCH plans.
- Strengthening partnerships and coordination among concerned stakeholders to contribute to one national plan for MNCH and to achieving the national related targets.
- Focusing on the areas and population most in need: geographic, economic and social.
- Moving towards universal access to primary health care services by expanding the network of primary health care facilities and adopting innovative approaches to accelerate the provision of MNCH services at community level.
- Building capacities to produce adequate qualified workforce to meet the service needs of the population (in-service and basic education).
- Ensuring adequate numbers of qualified workforce.
- Strengthening the key health systems essential elements such as the health information system, referral, commodity security and supervision.
- Providing high quality of health services to children and mothers.
- Ensuring the continued supply and availability of medicines and vaccines as key elements to reduce mortality.
- Strengthening the monitoring and evaluation system.