

Chapter IV

Health policy interventions and systems

Summary

- Countries have made impressive headway towards the achievement of health-related Millennium Development Goals (MDGs). Progress on the most prominent fronts has led other previously overlooked issues to move to the forefront. For example, the reduction of deaths in children under five years of age but older than a month has exposed the issue of neonatal mortality.
- A number of preventive and curative policy interventions have contributed to this progress; most of them were developed as part of a long-term process that predates the MDGs, but Governments stepped them up more vigorously to pursue the achievement of the MDGs.
- Alas, the health-related MDGs were not met globally by 2015; there are remaining challenges in neonatal mortality, infectious diseases, and nutrition deficiencies. Policy interventions to tackle these challenges need no reinvention but they need to be more coherent and effective. At the same time, health systems need significant strengthening.
- Greater policy coherence and effectiveness will require the following: assurance that policy interventions of one strategy do not detract from any others; an adequate interface between health policies and budgetary frameworks; careful analysis of the effectiveness of policies before implementing them, that is, considering issues of context, target population, scale and cost, as well as starting conditions; and laying out and implementing an adequate monitoring strategy to detect changes that would prompt reassessment of policies.
- Strengthening the health system in developing countries will demand adequately addressing the shortage of skilled health personnel; building more health facilities while also improving non-health infrastructure (transport, water and sanitation); and positioning the health system as a core social institution that is deeply embedded in the social, political and economic context of local and national settings.
- Investment and operating costs involved in improving the functioning of the health systems will be high. External assistance will be critical for countries that do not have enough domestic resources to finance the spending required. Vertical interventions should continue to be harmonized with the horizontal health system so that the former do not weaken the latter, but instead strengthen it.

Introduction

The health of the world's population has improved markedly, exposing some previously overlooked issues

The health of people in the world has improved markedly since 2000. The world has seen a reduction in under-five, maternal and malaria-related mortality rates and the number of new HIV/AIDS infections, as well as an increase in the number of lives saved through improvements in testing and treatment of tuberculosis. The progress on the most prominent fronts has led other previously overlooked issues to move to the forefront. For example, the reduction of deaths in children under five years of age but older than a month, has brought to light the issue of neonatal mortality, which was overlooked early in the 2000s. This progress has been reflected in the headway that countries have made towards the achievement of the health-related Millennium Development Goals (MDGs) since 2000.

A number of preventive and curative health policy interventions have contributed to this progress and this chapter reviews them and draws lessons from this review. Most of these interventions were developed as part of a long-term process that predates the MDGs. However, Governments in developing countries have used them more vigorously with the aim of making progress towards achieving the health-related MDGs; as noted in chapter III, public social spending has increased in developing countries since the early 2000s. While health interventions have been important in explaining past success, health outcomes have also, to a large extent, been determined by the functioning of the health system. Policy interventions and health systems are connected through feedback relationships.

Health challenges from the MDGs will continue to feature in the SDGs

A review of health policy interventions and related lessons as presented in this chapter is important for a number of reasons. Although some individual developing countries have been successful, the health-related MDGs were not met globally by 2015 and there is unfinished business. Health challenges confronted by the MDGs will feature among the health challenges of the 2030 Agenda for Sustainable Development. Diseases such as pneumonia, diarrhoea and malaria alone continue to account for about one third of deaths among children under five; many under-five deaths still occur in children already weakened by undernutrition; and many pregnant women continue to face serious constraints to improve their nutrient intake, especially in low-income countries (United Nations, 2015a; United Nations Children's Fund, 2013b). These challenges are compounded by the urgency of tackling the problem of neonatal deaths. Likewise, it is important to scrutinize the limitations of the health system that have held back the effectiveness of health policy interventions in helping achieve progress towards achieving the health-related MDGs.

The review and examples of health interventions presented in this chapter focus on measures that have proven effective in making headway towards reducing child mortality (MDG 4), improving maternal health (MDG 5), and combating HIV/AIDS, malaria and other diseases (MDG 6). Policies to expand access to safe drinking water and basic sanitation (MDG 7, target C) have also been critical for achieving health-related goals and are under review in chapter V. The review of health policy interventions is followed by a discussion focused on the constraints of health systems and examples of measures that have enabled Governments to overcome them. Broader issues of governance and institutions that also affect health policies—and development policies in general—are discussed in chapter VI. Conclusions and recommended pathways for policies going forward are summarized at the end of the chapter.

A variety of effective policy interventions have helped to make progress towards achieving the health-related goals

Proven health policy interventions

A number of effective, and in most cases affordable, policy interventions have been used by countries nationally and locally to pursue the achievement of health-related goals.

These policies are summarized in table IV.1. They exist as a result of a long-term process that, beginning in the early twentieth century and escalating markedly in the 1950s and subsequent decades, evolved from disease control to more comprehensive and integrated approaches. Accordingly, cost-effective solutions began being combined more with community participation, intersectoral collaboration and incorporation into general health-system delivery (United Nations Children's Fund, 2007).

A wealth of evidence supports that these interventions are effective in preventing and tackling the causes leading to child and maternal deaths as well as other key diseases covered by the MDGs (see Sánchez, Julca and Winkel, 2015b). There are also numerous synergies among the different interventions for health-related goals (table IV.1). The remainder of this section reviews some of the main policies as well as their outcomes and synergies. It also discusses some health spending issues, which turned out to be very important for policy implementation.

Health spending and resource mobilization

Public health spending in low- and middle-income countries shows a growing trend since the beginning of the new millennium (see figure III.1 in chap. III). Some countries even set concrete spending targets at the regional level in Africa and also at the global level as part of a World Health Organization Initiative (Government Spending Watch, 2013). In many developing countries, health spending by regional and local governments outpaced central government health spending (Fan and Glassman, 2014), which points to the importance of local governments in the implementation of health policies (see chap. VI). These trends of public health spending reflect the increased efforts at both the national and international level that have made a considerable difference in ensuring that the relevant policy interventions are incorporated into prevention and treatment programmes. Although public spending has not increased as much as needed to meet the MDGs (see chap. II), countries with high per capita public health expenditure have tended to perform better in any of the indicators associated with health-related goals (for example, see figure IV.1 on health spending and the infant mortality rate).

An important success of the MDGs has been in mobilizing more funds for health needs, particularly in low-income countries and Africa. Bilateral and multilateral donors as reported by the Organization for Economic Cooperation and Development (OECD) increased their assistance for health-related goals from \$4.1 billion in 1995 to \$23.4 billion in 2013 (figure IV.2). The increased official development assistance for health was part of the reason public health spending has increased.

The increased assistance for health purposes was also associated with the emergence of several vertical funds, dedicated to specific health objectives. The most prominent among these are the Global Fund to Fight Aids, Tuberculosis and Malaria (GFATM), the Global Alliance for Vaccines and Immunization (GAVI), and UNITAID.¹ These are public-private partnerships that raised and disbursed substantial amounts of aid for health, stemming from traditional bilateral aid, private sector and philanthropic sources and innovative financing mechanisms (see chap. VI). They are called vertical funds, because they conceptually divide

Public spending on health has risen in low- and middle-income countries since the new millennium, generally producing good outcomes

Funds for health have also been mobilized through multilateral and bilateral donors and health-related vertical funds

¹ Other global health initiatives include Advance Market Commitments (AMC) for pneumococcal vaccines, the Affordable Medicines Facility for Malaria and Product (RED) and Debt2health swaps. However, these funds are smaller and their money, including that of UNITAID, was mostly channelled through either GFATM or GAVI (United Nations, 2012).

Table IV.1
Health policy interventions for achieving health-related goals

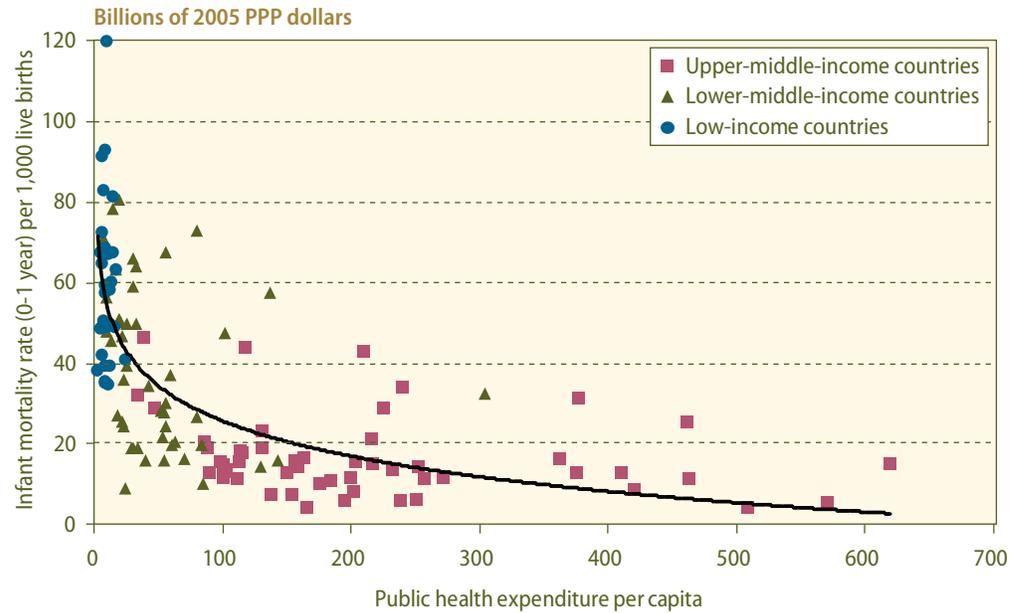
| Intervention | Child mortality | Maternal mortality | HIV/AIDS | Malaria | Tuberculosis (TB) |
|--|--|--|---|---|---------------------------------------|
| Immunization | Prevents deadly childhood diseases (diarrhoea, pneumonia, measles, TB, etc.) | Improves maternal health, boosts immunity in foetuses and reduces risks of complications | | | Prevents children from contracting TB |
| Access to safe water and basic sanitation | Influences nutritional status of children | Influences nutritional status of mothers | | Attention to water systems can help to deal with malaria breeding areas | |
| Early and exclusive breastfeeding | Improves nutritional status of children | | | | |
| Micronutrient supplementation | Vitamin A (children) and supplements (women of reproductive age(WRA)); improves nutritional status of children | Weekly iron and folic acid supplements (WIFS), multiple micronutrient, balanced-protein energy; improves nutritional status of WRA | Improves nutritional status of people living with HIV | | |
| General nutrition strategies | Prevent stunting | Improve health of both mother and foetus | | | |
| Curbing household air pollution | Low-emission biomass chimney stoves and cleaner fuels help prevent pneumonia | | | | Reduces risks of TB |
| Antibiotic therapy | Oral and parenteral therapies for treatment of severe pneumonia | | | | Related to DOTS |
| Intravenous fluids and oral rehydration substances (ORS) | Rehydration therapy for treating diarrhoea in infants and older children | | | | |
| Antenatal check-ups (at least four) | Ensure healthy evolution of pregnancy; help prevent, detect or predict potential complications during pregnancy/childbirth | | | | |
| Skilled birth attendance | Ensures safe birth delivery and adequate response to complications during childbirth | | | | |
| Emergency obstetric and newborn care (EmONC) | Ensures adequate response in case of obstetric complications during pregnancy and childbirth | | | | |
| Maternal waiting homes | Potentially reduce neonatal death rates and complications | Increase skilled birth attendance and improve maternal health | | | |
| Delivering family planning information and supplies | Reduces risk of infant and child mortality | Ensures universal access to reproductive health; promotion of contraceptive use is critical | Can help to promote condom use and other methods of preventing STIs | | |

Table IV.1 (continued)

| Intervention | Child mortality | Maternal mortality | HIV/AIDS | Malaria | Tuberculosis (TB) |
|---|--|--|--|--|---|
| Anti-retroviral therapy (ART) | Reduces the likelihood of mother-to-child transmission | Effective for treatment and can help to prevent transmission | Effective for treatment and can help to prevent transmission | | Reduces the likelihood of developing TB |
| Voluntary medical male circumcision (VMMC) | | | Reduces the likelihood of infection for men | | |
| Pre-exposure antiretroviral prophylaxis | | | Reduces the likelihood of infection for men who have sex with men and those who inject drugs | | |
| HIV/AIDS awareness programmes | | | Reduces transmission rates and improves use of health services related to treatment | | |
| Voluntary counselling and testing (VCT) | | | Improves awareness about HIV/AIDS status and increases treatment uptake | | |
| Drop-in and wellness centres | | | Raise HIV awareness status and treatment of hard-to-reach populations | Can aid in treatment of hard-to-reach populations | Can aid in treatment of hard-to-reach populations |
| Free distribution of insecticide-treated bed nets (ITNs) | Reduces the likelihood of contracting malaria for children | Reduces the likelihood of contracting malaria for pregnant women | | Limits (and eliminates) the spread of malaria | |
| Indoor residual insecticide spraying (IRS) | Reduces the likelihood of contracting malaria for children | Reduces the likelihood of contracting malaria for pregnant women | | Limits (and eliminates) the spread of malaria | |
| Intermittent preventive therapy in pregnancy (IPTp) | Prevents malaria during pregnancy | Reduces the likelihood of contracting malaria for pregnant women | | | |
| Rapid treatment of fevers in young children including rapid diagnostic tests (RDTs) | Reduces the likelihood of contracting malaria for children; reduces the rates of over-prescription | | | Reduces the likelihood of contracting malaria for children; reduces the rates of over-prescription | |
| Artemisinin-based combination therapies (ACTs) | | | | First-line treatment for uncomplicated <i>P. falciparum</i> malaria | |
| Directly Observed Treatment Scheme (DOTS) | | | | | Helps detect cases and stops TB |

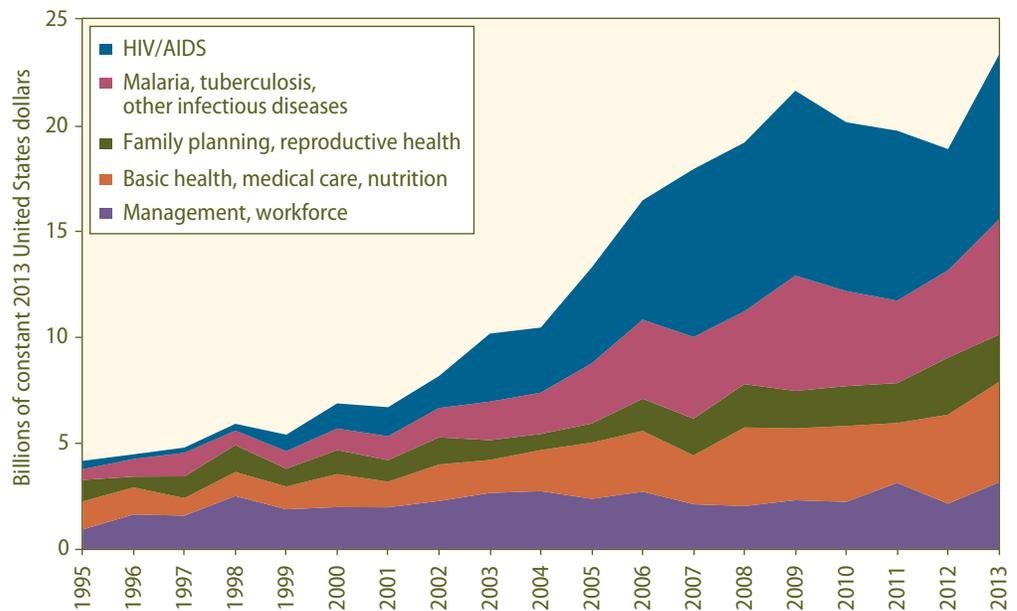
Source: UN/DESA, based on a survey of studies presented in Sánchez, Julca and Winkel (2015b).

Figure IV.1
Public health spending per capita and infant mortality in low- and middle-income countries, 2011



Source: UN/DESA, based on World Bank, World Development Indicators for public health expenditure and United Nations MDG Database for the infant mortality rate.

Figure IV.2
Total ODA to health from all donors reporting to OECD, 1995–2013



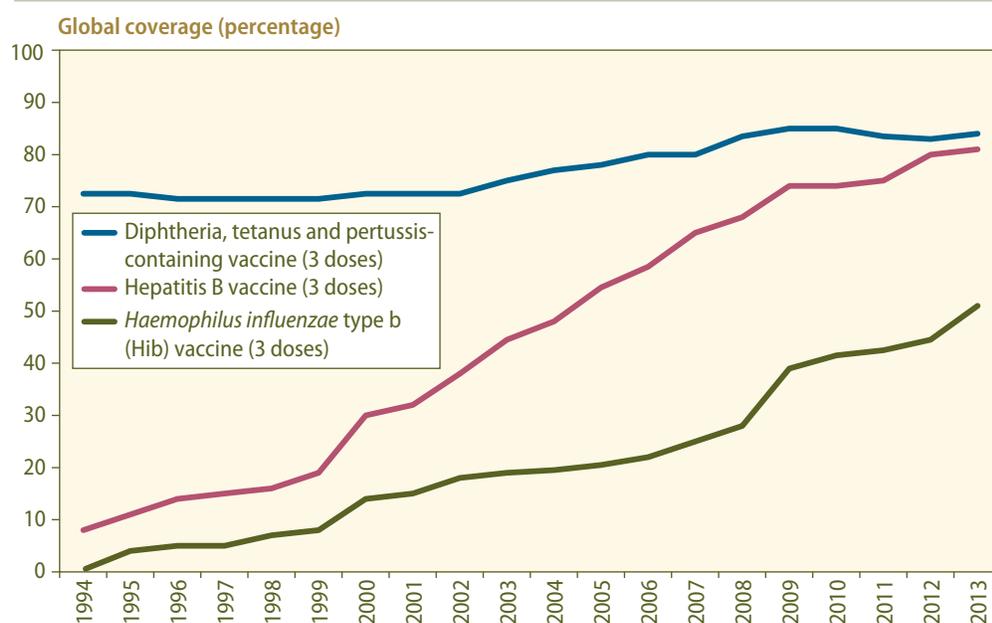
Source: OECD StatExtracts, available from <http://stats.oecd.org/index.aspx?datasetcode=CRS1> (accessed 8 April 2015).

health care into vertical (rather than horizontal) “slices” by level of care, and because they focus their interventions predominantly on a few specific diseases. The health interventions financed in part by these vertical health funds had significant positive impact; notably, there has been a marked increase in global immunization rates (figure IV.3).

The aid channelled through GFATM, GAVI and other sources, however, accounted for a small portion of the overall expenditure on health in most developing countries. It is mostly in countries in sub-Saharan Africa that they constituted a sizable part of overall health spending (United Nations, 2012). At the same time, vertical health funds, owing to their narrow focus on particular diseases, led to some distortion of health priorities for many countries (MacKellar, 2005). As can be inferred from figure IV.2, HIV/AIDS accounted for almost half of the total increase in aid for health between 2002 and 2009. Spending increases for malaria, the health workforce, basic health and medical care, and reproductive health each account for roughly 10 per cent of the increase. Overall, 33.3 per cent of aid for health went to HIV/AIDS in 2013 (from almost 41 per cent in 2011).

Measured in disability-adjusted life years (DALYs),² HIV/AIDS, tuberculosis and malaria account for 5.2 per cent, 2.7 per cent, and 4 per cent of the total disease burden in low-income countries, respectively (World Health Organization, 2008). In comparison, diarrhoea alone represents 7.2 per cent of DALYs, and perinatal and maternal conditions account for 14.8 per cent. In other words, vertical funds have not been allocated to tackle the most important global health concerns. Similarly, vertical health funds ignored non-communicable diseases, although they represent almost a third of the disease burden in developing countries (Nugent and Feigl, 2010). Some of the unwarranted effects of the

Figure IV.3
Progress in global immunization rates, 1994–2013



Source: World Health Organization (2014a).

² Disability-adjusted life years (DALYs) takes into account both premature death and disability caused by disease.

vertical funds (e.g., distortion of health priorities and operation outside national health systems) have been recognized by the vertical funds themselves, prompting them to devote certain parts of their funds to supporting national health systems (United Nations, 2012).

Interventions to reduce child mortality

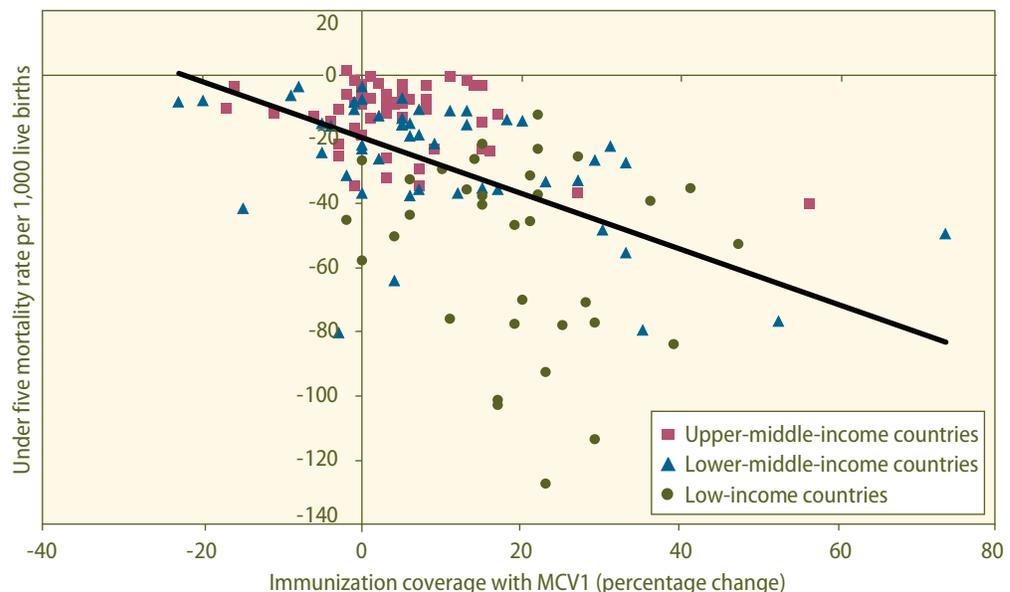
The increased allocation of resources for the health sector has made it possible to implement key interventions for reducing child mortality, including immunization, programmes that improve nutrition, measures to curb ambient and household air pollution, and antibiotic and rehydration therapies to treat pneumonia and diarrhoea. Interventions for meeting other health-related goals are also critical for averting child deaths and engaging multiple sectors outside health (Kuruvilla and others, 2014).

Immunization substantially reduces child mortality, but still does not reach many of the poorest and most marginalized children

A wealth of evidence shows that immunization substantially reduces the burden and number of deaths caused by deadly childhood diseases such as diarrhoea, pneumonia and measles (see Sánchez, Julca and Winkel, 2015b, for a review of the medical literature). Countries that have increased coverage with the measles-containing vaccine (MCV1) have, by and large, witnessed reductions in child mortality (figure IV.4). The benefits seem to be more concentrated in a number of lower-middle- and low-income countries. Because of their cost-effectiveness, immunization programmes have received increasing funding from bilateral donors through GAVI, as noted.

However, it is problematic that immunization still does not reach many children that reside in the poorest, most marginalized populations. Some efforts have succeeded in overcoming the barriers to expanding immunization to underserved, hard-to-reach populations. National immunization days (NIDs), for example, proved very successful over the years in helping to reduce and, in some cases, eradicate polio in a number of countries.

Figure IV.4
Child mortality and coverage with measles-containing vaccine (MCV1) in low- and middle-income countries, absolute change between 2000 and 2012



Source: UN/DESA, based on United Nations MDG Database.

NIDs are effective because they allow for both massive outreach and economies of scale—for example, when skilled professionals supervise a team of volunteers, especially for oral polio vaccine.

The importance of strengthening immunization delivery at the district level has been underscored, including through identifying and solving local issues, organizing regular outreach vaccine delivery services, and involving communities to ensure adequate functioning of immunization services (World Health Organization, United Nations Children's Fund and World Bank, 2009). Another strategy is integrated child health events which combine immunization activities with other services provided by the health system. In this case, any contact that a health worker has with a child or mother at a health facility becomes an opportunity to check immunization status and, if need be, to administer vaccines.

The reduction in child mortality observed over the past 40 years has been negatively correlated with undernourishment (Iqbal and Kiendrebeogo, 2014). The nutritional status of children is directly influenced by food, but there are also other important determinants: the provision of adequate general health services; a healthy environment with access to safe water and basic sanitation; good hygiene; early and exclusive breastfeeding, among other appropriate maternal care practices; and micronutrient supplementation (see Sánchez, Julca and Winkel, 2015b, for an extended review of evidence for all of these factors). The increased availability of clean drinking water and sanitation (see chapter V) has also been shown to help prevent infections and diarrhoea, thus leading to better nutritional outcomes for a given nutrition supply (Charmarbagwala and others, 2004).

Many countries have increased their rates of exclusive breastfeeding through legislative changes, distribution of breastfeeding-related training materials to paediatricians, establishment of mother-baby lactation centres, and significant efforts to improve awareness through outreach campaigns via a variety of media sources (United Nations Children's Fund, 2013a). Combining facility-based services with community participation has proven to work by reaching targeted children that most need micronutrients such as vitamin A and zinc. The participation of female community health volunteers (Nepal) and efforts to fill vacancies of supervisors and front-line workers as well as boosting their skills and improving their motivation (Maharashtra, India) are measures taken by programmes succeeding in increasing the coverage of vitamin A (ibid.). Integrated child health events such as NIDs have also helped to support high coverage of vitamin A supplementation in Nepal, Nigeria, Zimbabwe, and a number of other LDCs (United Nations Children's Fund, 2007).

Air pollution is a concern in a number of developing countries as this causes deadly respiratory diseases such as pneumonia; fortunately, it is preventable. A study by Niessen and others (2009) for 40 developing countries, which accounted for 90 per cent of pneumonia child deaths, finds that the use of low-emission biomass chimney stoves and cleaner fuels are cost-effective and can lower pneumonia incidence by 50 per cent (the attributed burden for indoor air pollution). The concern is that chimney stoves may not completely eliminate indoor pollution if there is substantial leakage into the room with some smoke returning into the house from outside (Smith, 2006; Smith and others, 2011). The use of stove or fuel interventions producing lower average exposures than chimney stoves (e.g., improved smokeless stove) needs to be expanded in countries where populations are heavily exposed to biomass fuel air pollution. The cost of investing in cleaner fuels or new stoves could be offset by spillover effects such as the time saved looking for firewood or other biomass fuels.

In the event of disease, treatment becomes a necessity. Both oral and parenteral antibiotic therapies are cost-effective and safe in the treatment of severe pneumonia in

District level immunization delivery and integrating immunization with other health services have proven effective for reaching underserved populations

Reducing indoor air pollution through the use of better stoves and cleaner fuels helps lower childhood pneumonia deaths

More efforts are needed to treat pneumonia when it occurs and to expand the use of oral rehydration substances to treat diarrhoea

children (Rojas-Reyes and Granados Rugeles, 2009; Wardlaw and others, 2006). Only one third of children with pneumonia received the antibiotics they needed by late 2014 (World Health Organization, 2015). Wardlaw and others (2006) identify various factors preventing the expansion of the coverage of antibiotic interventions, which developing countries would need to address going forward. In particular, large-scale implementation of antibiotic treatment is still viewed as costly because of the weak health systems and poor supply and logistic chains. Concerns have also been raised about the low technical level of community health workers administering antibiotics to children with pneumonia. Lastly, although there have been efforts to include community-based approaches, these programmes have often been small-scale and fragmented, with the community and health-facility components not adequately integrated.

Rehydration therapy with intravenous fluids or oral rehydration substances (ORS) is the critical intervention to treat diarrhoea. ORS is among the most cost-effective interventions in treating diarrhoea. Countries adopted the MDGs at a time when programmes earmarked to control diarrhoeal diseases through oral rehydration therapy (ORT) and other key interventions had already resulted in important reductions in the number of deaths attributable to diarrhoea among children under five (Victora and others, 2000). Even so, not all children in the developing world with a diarrhoeal disease receive the appropriate treatment. Measures to overcome the constraints to expanding ORT to treat diarrhoea should add to those seeking to expand the coverage of antibiotic interventions against pneumonia going forward.

Interventions to improve maternal health

There has been progress in maternal health at the global level. While many developing countries could not achieve the 75 per cent reduction needed (globally) between 1990 and 2015 to meet the maternal mortality target of MDG 5, maternal death is a rare event in a number of other developing countries. The interventions contributing to this progress include those that have improved maternal nutrition, promoted attendance to antenatal check-ups, and integrated family planning and reproductive health in policymaking. Delivering these interventions in a timely and adequate manner has required a well-functioning health system and interventions at the community level (see the section on strengthening of the health system). Social protection policies and efforts that improve education outcomes and address gender inequality issues have also been important to maternal health, as noted in chapter III.

The interventions include the provision of weekly iron and folic acid supplements (WIFS), multiple micronutrient supplementation and balanced-protein energy supplementation to women of reproductive age (WRA), all of which contribute to better health outcomes for both mothers and newborns. They can especially reduce the risk of anaemia during pregnancy, although their impact largely depends on the method of service delivery. A review of 8 of 10 WIFS programmes in 6 different developing countries reports that in many instances the traditional approach of accessing non-pregnant WRA and adolescent girls through health clinics proved unfeasible. WIFS were more successfully introduced through institutions such as schools or factories and by mobilizing women's unions or community groups (World Health Organization, 2011). Yet, programmes like these will only succeed in having an impact if they are expanded to cover women on a universal basis. A national nutritional anaemia-control programme targeting adolescent girls in Maharashtra (India), for example, performed poorly in urban slum areas because

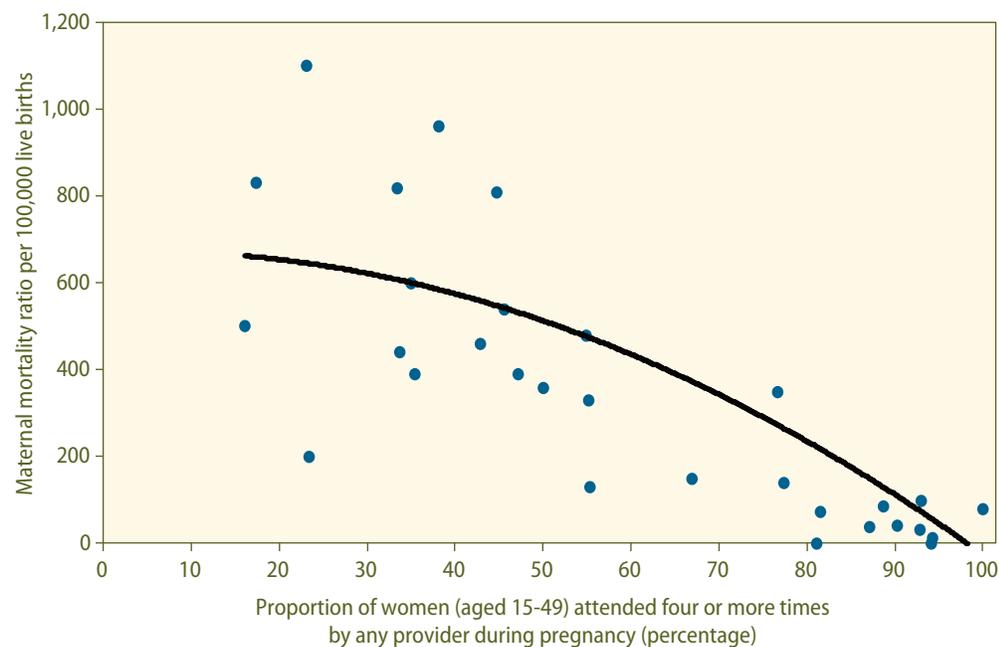
Weekly iron and folic acid supplements help to produce better outcomes for both mothers and newborns

coverage was not universal; the programme was more focused on tribal and rural areas (Deshmukh, Garg and Bharambe, 2008). Following the logic of “integrated child health events” can be useful in ensuring that any contact that a health-care worker has with a pregnant woman also serves to check her nutritional condition and, if need be, administer the required supplements.

The World Health Organization (WHO) also recommends a minimum of four antenatal care visits to ensure the well-being of mothers and newborns; when this minimum is reached or surpassed, countries tend to have lower maternal mortality rates (figure IV.5). However, only 52 per cent of pregnant women had the recommended number (or more) of antenatal care visits during pregnancy in 2014, although this was an increase from just 35 per cent in 1990 (United Nations, 2015a).

Because antenatal care visits are indispensable for the well-being of mothers and newborns, it is important to track attendance and monitor mothers

Figure IV.5
Maternal mortality and proportion of women receiving four or more antenatal check-ups in low- and middle-income countries, 2010



Source: UN/DESA, based on United Nations MDG Database.

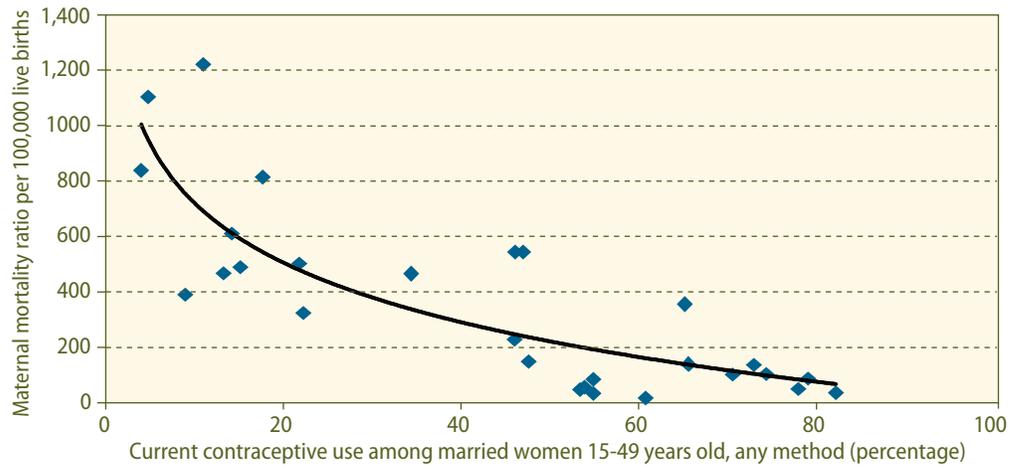
Access to antenatal care is seriously constrained by inadequate health infrastructure in many developing countries and this inadequacy will take a long time to be resolved (see the section on strengthening of the health system). Additional solutions need to be implemented in the meantime, taking advantage of the fact that most women innately worry about the progress of their pregnancy. It has been found that attendance to antenatal care increased in countries such as Kenya and the United Republic of Tanzania with the use of an antenatal attendance card. Such cards facilitate prompt care in case of complications later in the pregnancy or ensure that women can attend a health facility to deliver (Pell and others, 2013; Mrisho and others, 2009). The existence of adequate monitoring systems and the integration of maternal and child health care are indispensable for engaging women in antenatal care. An effective measure has been the move from using manual records to

IT-based mother and child programmes. Along these lines, a programme in Oman, for example, resulted in impressive reductions of maternal and child mortality; the United Nations awarded and distinguished the programme as one of the two best innovative practices in public governance in 2013 (see Sánchez, Julca and Winkel, 2015b, box 4; United Nations, 2014b).

Access to universal reproductive health has many benefits, including prevention of unintended and high-risk pregnancies and maternal deaths

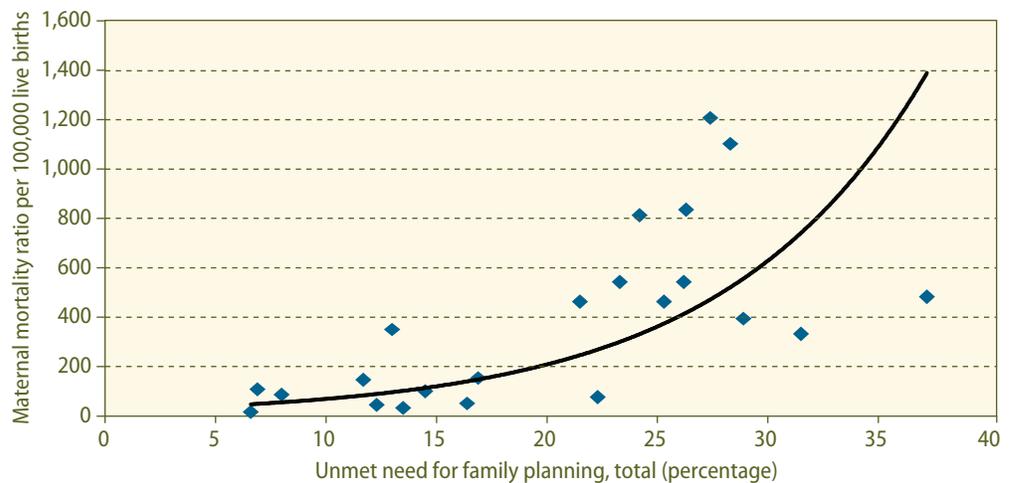
Universal access to reproductive health is also critical and was incorporated as part of MDG 5 in 2005. Targets on contraceptive use, unmet need for family planning and the adolescent birth rate were adopted in 2007. There has been progress with regard to these targets across developing regions, with those countries making most headway by 2010 showing lower mortality rates (figures IV.6 to IV.8). A wealth of research reviewed in Sánchez, Julca and Winkel (2015b) supports these correlations.

Figure IV.6
Maternal mortality and contraceptive use in low- and middle-income countries, 2010



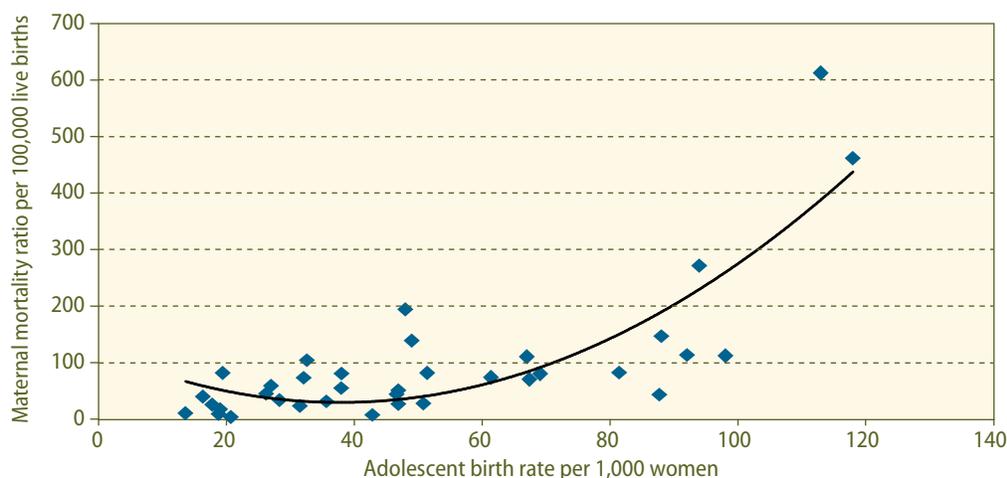
Source: UN/DESA, based on United Nations MDG Database.

Figure IV.7
Maternal mortality and unmet need for family planning in low- and middle-income countries, 2010



Source: UN/DESA, based on United Nations MDG Database.

Figure IV.8
Maternal mortality and adolescent birth rates in low- and middle-income countries, 2010



Source: UN/DESA, based on United Nations MDG Database.

The benefits start with the prevention of unintended and high-risk pregnancies. Subsequently, evidence shows that providing universal access to sexual and reproductive health and reducing fertility rates increases parents' chances of escaping poverty; allows families to invest more in their children's nutrition, health, and education; and boosts incomes because of life cycle, distributional and intergenerational benefits (Sánchez, Julca and Winkel, 2015b; United Nations, Department of Economic and Social Affairs, 2014b). The prevention of early childbearing is critical to avoiding child malnutrition, missed opportunities at school and work, the consequent intergenerational transmission of inequality and poverty, and the forestalling of social mobility, as a vast amount of evidence regarding developing countries demonstrates (*ibid.*).

Higher levels of contraceptive use in areas in Bangladesh, for example, led to lower levels of unintended pregnancy and thereby lower levels of abortion and maternal mortality (Rahman, DaVanzo and Razzaque, 2001). The Lady Health Workers initiative in Pakistan has trained women to deliver services related to maternal and child health, including family planning information and supplies. This initiative raised contraceptive use by rural women by almost 50 per cent and an evaluation found that doorstep delivery of contraceptives is central to achieving universal access to modern contraceptive methods in remote areas (Singh and others, 2009). Colombia has also had success with promotion of family planning services over a long period in a combined effort between the Ministry of Health and the non-governmental organization (NGO) Profamilia. They were able to raise contraceptive use among married women from about 20 to 78 per cent between 1969 and 2007 (*ibid.*).

Maternal, newborn and childcare strategies

The reduction of deaths in children under five years of age but older than a month has exposed the issue of neonatal mortality—that is, deaths of newborns occurring in the first 28 days of life. Globally, the proportion of deaths occurring in the first 28 days of life in under-five mortality increased from 37 to 44 per cent between 1990 and 2012.

The increase in neonatal mortality points to the importance of improving family planning and maternal health services

The causes of neonatal deaths are different from the causes in later childhood and are in most cases preventable.³ The best possible strategy for reducing them is through greater investment in family planning services and maternal health, not only before and during pregnancy, but also at the time of labour and delivery as well as the first 24 hours after birth. This in turn requires larger investments to improve health systems (see the section on strengthening of the health system). Furthermore, a number of preventive strategies and measures that focus on postnatal care can help to increase newborn survival rates (table IV.2), but these need to feature more prominently in the health efforts going forward. According to data from WHO (as of May 2012), only 13 per cent of women received postnatal care in the first 24 hours in those developing countries where home births are very common. Moreover, many mothers who give birth in health facilities cannot return for postnatal care because of financial, social or other barriers.

Because of the importance of reducing neonatal mortality and the type of preventive strategies and measures available to increase newborn survival rates, maternal health and child health have become more closely intertwined. Cost-effective health-care solutions

Table IV.2

Preventive strategies and measures to increase newborn survival rates

| Target group | Strategy | Measures |
|----------------------------------|---|---|
| All newborns | Home visits by a skilled health worker immediately after birth (on days one and three, and if possible, on day seven) | <ul style="list-style-type: none"> Promote and support early and exclusive breastfeeding Keep the newborn warm; promote skin-to-skin contact between mother and infant Promote hygienic umbilical cord and skin care Assess the baby for signs of health problems; advise families to seek prompt medical care if necessary Encourage birth registration and timely vaccination according to national schedules Identify/support newborns that need additional care (see other target groups) If feasible, provide home treatment for local infections and some feeding problems |
| Low-birth-weight babies | Home visits by a skilled health worker immediately after birth; in some cases, referral to a hospital | <ul style="list-style-type: none"> Increased attention to keeping the newborn warm Immediate assistance with initiation of breastfeeding; if a baby is unable to accept feeding from a cup, then refer to a hospital Extra attention to hygiene, especially washing of hands Extra attention to health danger signs and the need for care Additional support for breastfeeding and monitoring growth |
| Newborns with severe illness | Referral to a hospital and skilled health worker attendance | <ul style="list-style-type: none"> Help families to locate a hospital or facility where the baby can be cared for Treatment for infections (e.g., with antibiotic injections) by a nurse, doctor or skilled health worker |
| Newborns of HIV-infected mothers | Home/community/hospital interventions | <ul style="list-style-type: none"> Preventive antiretroviral therapy for mothers and newborns HIV testing and care for exposed infants Counselling and support to mothers for infant feeding |

Source: UN/DESA, based on World Health Organization (2012).

³ WHO identifies four major causes that account for nearly 80 per cent of deaths within the first 28 days of life: prematurity and low birth weight, infections (not necessarily similar as those affecting older children), asphyxia (lack of oxygen at birth) and birth trauma. For more details, see World Health Organization (2012).

have been combined as part of maternal, newborn and child health (MNCH) strategies. The core principle of these efforts is lifelong access to health care, which takes a “continuum of care” approach for the mother starting from long before pregnancy (during childhood and adolescence) through pregnancy and childbirth. The continuum begins again with adequate newborn care for the new life. As appropriate, care can be delivered in the home and community, as well as health clinics and hospitals.

MNCH strategies have been implemented in a number of developing countries (World Health Organization, United Nations Population Fund, United Nations Children’s Fund and World Bank, 2010). The countdown to the 2015 composite coverage index, which measures coverage by eight maternal- and newborn-related interventions along the continuum of care, shows a strong correlation between countries with higher levels of interventions and lower rates of child mortality (United Nations Children’s Fund and World Health Organization, 2014). Nonetheless, the increased coverage of the interventions varies dramatically across countries and also across wealth quintiles within countries. Even so, additional investments of merely US\$ 5 per person per year addressing women’s and children’s health (including interventions for MDG 6) have been projected to potentially yield high rates of return, producing up to nine times the economic and social benefit by 2035 in 74 countries that carry 95 per cent of the global maternal and child mortality burden (Steinberg and others, 2014).

Integrated maternal, newborn and child health strategies have proven effective in reducing child mortality, but more investment is needed

HIV/AIDS, malaria and other diseases

Efforts to combat HIV/AIDS, malaria, tuberculosis (TB) and other diseases predate the MDGs but have resulted in faster progress towards eradicating these diseases since these goals were adopted. They have involved significant collaborations among international organizations and donors (included through aid and vertical funds as noted earlier), national and local governments as well as NGOs and community organizations. There are generally accepted successful treatment and prevention regimes to combat these diseases that, going forward, need to be scaled up in some countries.

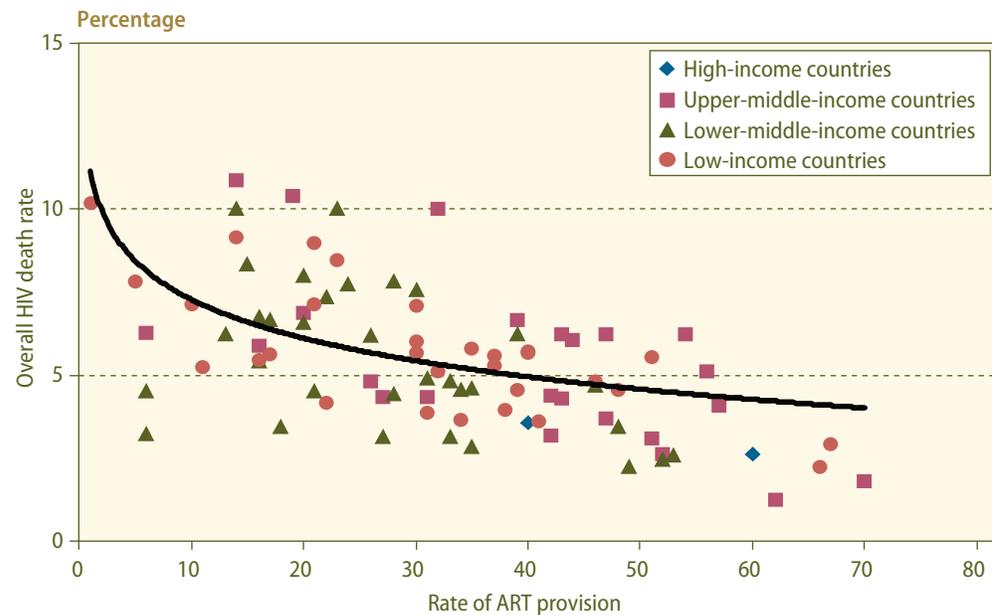
HIV/AIDS

Three of the most relevant interventions to combat HIV/AIDS are antiretroviral therapy (ART), voluntary medical male circumcision (VMMC), and pre-exposure antiretroviral prophylaxis. It has been shown that the risk of transmission can be reduced using these three interventions by 96 per cent, over 60 per cent for the first two interventions, by more than 40 per cent among men who have sex with men, and by 49 per cent among people who inject drugs for the pre-exposure antiretroviral prophylaxis (UNAIDS, 2013). The effectiveness of these measures has relied extensively on their integration into a number of programmes, starting with those aimed at raising awareness about HIV/AIDS.

Irrespective of their income level, countries with higher rates of ART provision have seen a correlation with lower death rates from HIV towards the end of the 2000-2015 period (figure IV.9). The provision of ART has been expanded across a wide variety of countries, particularly those in sub-Saharan Africa, as a result of some reductions in costs related to the therapy. However, there are still significant issues with access to ART in a number of countries. In Botswana and Malawi, for example, the provision of low- or no-cost ART treatments comes as a result of subsidization by Governments or international organizations (UNAIDS, 2014). Zambia began distributing free ART drugs as early as 2005 and made

Provision of antiretroviral therapy has expanded significantly and is correlated with lower HIV death rates

Figure IV.9
Rates of ART provision and overall HIV-related death across countries, 2013



Source: UN/DESA, based on data from WHO's Global Health Observatory (GHO).

steps to decentralize drug distribution to the district level in order to improve coverage. The country also instituted programmes to provide ART at all provincial hospitals for further coverage expansion (Sánchez, Julca and Winkel, 2015b).

There are other useful policy interventions to combat HIV/AIDS but awareness needs to be raised for them to be more effective

A significant number of sub-Saharan African countries have undertaken large-scale VMMC programmes to ensure that this procedure is available in addition to increasing the number of procedures performed (UNAIDS, 2014; Njeuhmeli and others, 2011). The procedure is cost-effective but there are still a significant number of men who do not have access to it (UNAIDS, 2013). The other important intervention—pre-exposure antiretroviral prophylaxis for men who have sex with men and those who inject drugs—still has relatively limited application. While the cost of required drugs makes this intervention somewhat more rare, the relative effectiveness rates as well as the existing medical infrastructure for distribution of ART-related medicines makes it worth expanding this strategy further.

In order for these three policy interventions to be effective, it is necessary to raise awareness about HIV/AIDS, its transmission vectors, testing procedures and their availability, treatment options and prevention methods. Awareness starts at the top of the political leadership when it comes to HIV/AIDS. For example, the United Republic of Tanzania and Zambia have encouraged policymakers and political and community leaders to initiate discussions about the disease. Zambia established a cabinet committee devoted to HIV/AIDS and in Malawi, the President is also the Minister responsible for HIV/AIDS (Sánchez, Julca and Winkel, 2015b).

Important interventions to reduce the risky behaviour that can lead to HIV transmission among youth, and to boost the use of preventative measures such as condoms, include school-based sex education initiatives with proper teacher training, mass media campaigns and accessible information sources (ibid.). Some successful initiatives include radio and TV programmes (Botswana); nationwide prevention campaigns through the inclusion of community figures (Burkina Faso); marketing of condoms by community

organizations (Central African Republic); peer-led education seminars and interventions for migrant populations (Lao People's Democratic Republic); and national call centres (India, Nigeria, the Philippines and South Africa). There have also been special efforts to involve men in various processes, such as prevention of mother-to-child transmission (PMTCT) as well as issues of reproductive and sexual health and gender-based violence in the context of HIV (Nigeria and South Africa). In some cases (the United Republic of Tanzania) the awareness campaigns have been combined with testing for HIV, resembling the logic of "integrated health events". Some of these initiatives have increased testing coverage rates for not only HIV, but also for reproductive issues and for TB.

In general, free voluntary counselling and testing (VCT) has proven to be a valuable method of reaching potentially affected populations and raising awareness with regard to prevention and treatment of HIV/AIDS. Sánchez, Julca and Winkel (2015b) review a number of recent country progress reports by UNAIDS and Governments on different AIDS programmes and identify interesting interventions. Proper testing of pregnant women to determine their HIV status is also the first step of PMTCT. There have been moves to integrate testing into standard clinical practice, which has led to an increase in provider initiated counselling and testing (PITC), whereby HIV related interventions are often done automatically as part of other health services or as part of general check-ups. South Africa and Uganda have noted this as a successful factor in their anti-HIV efforts. Automatic testing initiated by the United Republic of Tanzania has also been an important factor in their HIV/AIDS programmes. VCT has been integrated into programmes for PMTCT and early infant diagnosis (EID) in Uganda as well. PMTCT initiatives are particularly important due to their synergies with child mortality and their ties with ART programmes. In Zambia, a programme to improve coverage of EID through distribution of test results via text message has been successful in expanding coverage, particularly among rural populations. The programme has also helped to improve postnatal follow-up care through appointment reminders.

Tailoring the interventions to the affected populations is also another necessary factor in limiting the spread of HIV and helping those with the disease to more adequately live a longer life. An example of this is the development of drop-in centres for testing, counselling, treatment and other HIV/AIDS and sexually transmitted infection (STI) related medical interventions. Wellness centres operated along the transport corridor between six East and South African countries are aimed at reaching sex workers, migrant labourers, and those involved in long-haul transportation. The centres also provide treatment for regular medical issues that these populations might encounter alongside HIV testing, which has helped to reduce stigma associated with the testing centres (United Nations Development Group, 2010). Similar centres have been operated since 1999 in the Lao People's Democratic Republic and are targeted towards similar populations with the addition of specific programmes for transgender individuals (Sánchez, Julca and Winkel, 2015b). India has taken important steps to address issues of transgender people, including ensuring high rates of coverage of prevention services and HIV testing services. In addition, India and Nepal have issued court rulings that recognize transgender people as a third gender and instructed the Government to formulate special programmes to support their needs (UNAIDS, 2014).

Another important vector of prevention is the appropriate treatment of users of injectable drugs, who have a high prevalence of HIV/AIDS relative to the rest of the population in many developing countries. There are interesting country examples with regard to this issue (ibid.). Bangladesh is one of the few countries that have the necessary

Voluntary counselling and testing is a valuable way of raising awareness and reaching potentially affected populations

Programmes and laws to support those living with HIV/AIDS will be more important as the death rate has fallen

programmes that meet the recommended availability of needles and syringes per user of injectable drugs. In Nepal, combined harm reduction therapy approaches have significantly reduced HIV prevalence in Kathmandu, while China has vastly expanded the availability of opioid substitution therapy, an important aspect of harm reduction therapy.

As the death rate from HIV/AIDS has fallen, it has become more important for countries to put in place programmes that provide services and support for people living with the disease. Legal empowerment and education of people living with HIV (PLWH) along with community efforts have been important for reducing discrimination through a variety of programmes. These programmes include legal clinics in Kyrgyzstan, PLWH associations in Yemen, and the use of traditional leaders to work to combat the stigma attached to PLWH in Zambia (Sánchez, Julca and Winkel, 2015b). In a similar vein, the Bar Hostess Empowerment programme in Kenya was developed to train local sex workers as paralegals, including learning about local and national laws and educating other sex workers about their rights (UNAIDS, 2014). A collaborative programme involving Australia, the Lao People's Democratic Republic and Thailand has undertaken nutritional assessments of PLWH, combined education and counselling as well as capacity development for HIV-related service providers (the Lao People's Democratic Republic) for both nutrition and general HIV related procedures. These programmes resulted in better nutritional status of PLWH as well as raising overall HIV testing rates (Sánchez, Julca and Winkel, 2015b). Ecuador has introduced social protection measures to mitigate the negative effects of HIV/AIDS such as a cash transfer programme targeting caregivers of children under 14 with HIV/AIDS (UNAIDS, 2014)—which again corroborates the complementarity of social assistance programmes and health policies.

Malaria

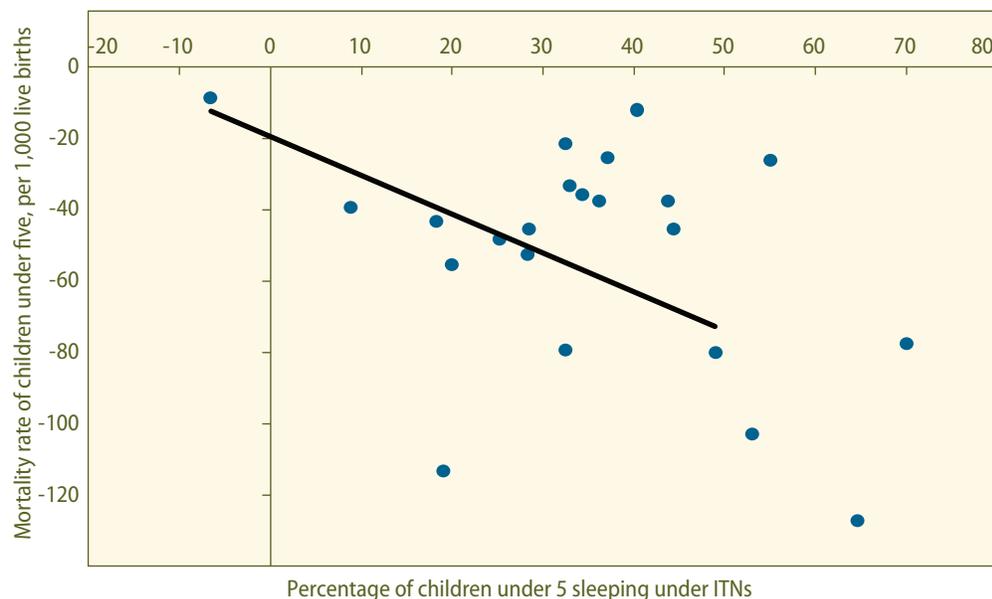
Malaria remains a serious issue for many developing countries and resulted in over half a million deaths in 2013 (World Health Organization, 2014b). There are a number of recommended interventions for combating, treating and preventing malaria that are agreed on by WHO: free distribution of insecticide-treated bed nets (ITNs), indoor residual insecticide spraying (IRS), and intermittent preventive therapy in pregnancy (IPTp). Rapid treatment of fevers in young children including rapid diagnostic tests (RDTs) is also recommended for both prevention and treatment. Artemisinin-based combination therapies (ACTs) have become the first-line treatment for uncomplicated *P. falciparum* malaria. Most country programmes are based on various ways of ensuring that these interventions are carried out successfully and reach the objective populations.

Insecticide-treated bed nets and indoor residual insecticide spraying have helped reduce malaria rates...

Malaria-affected countries with an increased percentage of children under five sleeping under ITNs have seen important reductions in child mortality (figure IV.10) (Demombynes and Trommerlova, 2012; Lim and others, 2011). IRS is another strategy that has proven effective in limiting (if not eliminating) the spread of malaria in many communities and regions (Pluess and others, 2010). A combination strategy of IRS and ITN use has been found to provide extra protection and should be implemented in high-risk areas (Hamel and others, 2011). The use of RDTs for children under five is important as it could reduce the rates of over-prescription and lead to better treatment outcomes (Mukanga and others, 2012). Their use has greatly expanded (World Health Organization, 2013a) and could potentially help in the treatment of other illnesses when malaria is ruled out (World Health Organization, 2013b).

Figure IV.10

Child mortality and children under five sleeping under ITNs in malaria-affected countries, absolute change between 2000 and 2012



Source: UN/DESA, based on United Nations MDG Database.

Note: For the percentage of children under five sleeping under ITNs, data refer to the most recent year available for 1999-2001 and 2009-2012, focusing on malaria-affected countries.

As part of efforts to reduce the death rate from malaria, the use of ACTs has proven to be particularly effective in many regions, although some countries in East Asia have seen a rise in resistance to ACTs by certain strains of malaria, which could be problematic for the future. Another issue is that there is limited data on progress for a number of countries for indicators such as malaria deaths or children under five with fevers who are being treated with malaria drugs. This is a particular issue for some of the countries with the most serious burdens. The Ebola epidemic in West Africa has also been a significant setback on malaria control efforts as resources have been understandably diverted towards more pressing needs (Hayden, 2014).

Some examples of countries where various programmes have been implemented include Sudan, which enacted a National Malaria Prevention and Control Programme that significantly increased the number of patients receiving ACT, provided free diagnosis and treatment of severe malaria (supported by GFATM), and expanded access to malaria services through an expansion of the number of health facilities. To deal with malaria transmission vectors, there were also ITN distribution programmes, changes to irrigation projects designed to combat mosquito breeding grounds and spraying of residential areas with insecticide (United Nations Development Group, 2010). In Ethiopia and Senegal, there have been significant ITN distribution, IRS programmes and important increases in malaria diagnostic testing (United States Agency for International Development, 2014). In Rwanda, the National Malaria Control Programme, whose main interventions have targeted distribution of ITNs, behaviour change, communication and improvements in treatment, has led to a significant reduction in deaths from malaria (Rwanda, Ministry of Health, 2008). In this case, regular large-scale ITN distribution campaigns have been combined with existing vaccination campaigns and antenatal care programmes. Indonesia also integrated malaria treatment and prevention programmes into maternal and child health

...while Artemisinin-based combination therapies have become the first-line treatment for many cases

services, which included ITN distribution (United Nations Development Group, 2010). Zambia has also implemented malaria prevention and control programmes including ITN distribution, IPTp, IRS and prompt treatment of malaria symptoms (Zambia, Ministry of Health, 2010). Because of the important opportunities for synergies between all health-related MDGs, a number of operations have also included the distribution of ITNs in integrated MNCH strategies (Wallace, Ryman and Dietz, 2012).

Tuberculosis

There has been gradual progress in reducing TB cases ever since the MDGs were adopted. However, TB remains one of the deadliest communicable diseases and the relative coincidence with HIV is fairly high (World Health Organization, 2014c). In a similar vein to malaria, the treatments and strategies for TB tend to be much more generally applied across countries.

The Directly Observed Treatment Scheme has been a key feature of efforts to stop TB

The Directly Observed Treatment Scheme (DOTS) is at the heart of efforts to stop TB, including case detection (by sputum smear microscopy).⁴ With regard to diagnostics, an example of a successful intervention includes the introduction of the GeneXpert system in South Africa. This system is better able than the traditional culture approach to diagnose TB and Rifampicin resistance (a good indicator of drug-resistant TB) simultaneously (Sánchez, Julca and Winkel, 2015b). Universal (or almost full) coverage of DOTS has been achieved through national programmes in countries such as Zambia, India and Bangladesh as a review of national plans and programmes suggests (ibid.). Zambia has significantly increased TB testing for HIV patients and India has trained more than 600,000 health-care workers to carry out tests along with over 10,000 dedicated lab workers examining the samples. While expansion of DOTS has been successful in reducing mortality rates in many countries, this will not lead to an eradication of the disease; only expansion of immunization programmes can accomplish that (Enarson and Billo, 2007). However, while vaccination has proven quite effective for children, it has far less effect on pulmonary TB in adults, pointing to the need for continued investment and expansion in other prevention and treatment programmes (Jamison and others, eds., 2006).

Strengthening of the health system

A well-functioning health system that is appropriately situated in the society will play an important role in achieving health-related goals going forward

The aforementioned policy interventions can only be delivered with equity and quality if there is a well-functioning health system. While all of the supply-side needs of health systems continue to be indispensable, including the availability and capability of health workers and infrastructure, the experience of the past years indicates that the positioning of the health system within society also plays a significant role.

The MDG process may, by and large, have encouraged a focus on specific discreet spending (for example, to scale up immunizations, free distribution of ITNs, and so on) rather than the broad health-care reform that strengthens the underlying systems. For example, while vertical funds have been a critical source of resource mobilization, they also led to some distortion of health priorities for many countries due to their narrow focus on particular diseases, as noted. The dissociation between development policies and

⁴ DOTS is a standardized treatment regimen using a regular, uninterrupted drug supply, observed by a health-care worker or community health worker; and a standardized recording and reporting system to assess treatment results.

budgetary frameworks has also undermined policy coherence and generated spending gaps for achieving development goals, including the health-related MDGs, as noted in previous chapters.

Even so, there has unquestionably been a new push to strengthen health systems for many reasons, including the necessity of additional efforts to meet the health-related goals in an integrated manner, the rising importance of non-communicable diseases and the need to move towards universal health coverage. All of these are important aspects of the 2030 Agenda for Sustainable Development.

Health-care personnel

Health systems in developing countries face severe human resource constraints. This is evidenced by the fact that 40 million births in developing regions were not attended by skilled personnel in 2012, the bulk of which occurred in rural areas (United Nations, 2014a). According to a comprehensive survey-based study, only 20 per cent of hospitals in Africa had full-time physicians (Manasyan and others, 2009). Thus the quality of health services is seriously undermined by the quantity and quality of health-care personnel in developing countries.

There are basically three main reasons behind the problem. First, some countries are not producing enough doctors, nurses, and technicians necessary for their health-care system. Second, existing and new doctors, nurses, and technicians do not remain in certain countries and instead migrate elsewhere. The problem of migration of skilled health professionals is particularly acute for sub-Saharan countries, which have lost a significant part of their health-care personnel both to emigration and to the HIV/AIDS epidemic (Naicker and others, 2009; Tawfik and Kinoti, 2006; Awases and others, 2004). In another variant of this problem, health-care professionals may leave the public health system and join the better-paid and better-equipped private sector. Third, some of the health-care professionals who are left behind (in the country or in the public health system) do not possess high-level skills and may be less motivated to serve.

Coping with the personnel challenge requires a multi-pronged strategy customized to the particular situation of a country. Those countries that are not producing enough doctors, nurses, and technicians need to boost the relevant educational capacity in the long run. These may necessitate setting and meeting education goals at the highest education levels. Complementary training interventions that can be quickly deployed are worth trying in the short run. Examples of short-term training modalities in developing countries include broad-based training programmes for doctors, midwives and nurses (Botswana, the Gambia, Sierra Leone and Malawi), scholarship schemes (Uganda), and support for schools of midwives and the training of midwives in emergency and obstetric care (Zimbabwe) (Odusola, 2013). Shorter durations of training in developing countries has also allowed for task shifting that eases staffing pressure without compromising the quality of care (Huicho and others, 2008).

Short-term training initiatives have become particularly critical to combating HIV/AIDS or malaria. South Africa has had success with nurse-initiated management of patients on ART, a programme where nurses have been trained and authorized to administer ART and monitor patients (Sánchez, Julca and Winkel, 2015b). Many programmes for combating malaria have also included treatment training for doctors and medical assistants (Sudan),

The quality of health services is seriously undermined by the quantity and quality of health-care personnel in developing countries

Quality education and a variety of short-term training initiatives and career opportunity programmes can help to mitigate personnel issues

training on case management services for thousands of extension workers (Ethiopia), and home-based care programmes with trained community health workers (Rwanda) (ibid.).

Traditional birth attendants (TBAs) are another resource to consider in certain countries where cultural acceptance, cost and distance to hospital services (see the section on infrastructure) prompt women to use them. Some countries no longer allow TBAs to attend deliveries, though. An alternative approach is to use the strengths of TBAs while overcoming their weaknesses—for example, by ensuring that their roles become more complementary to those of trained medical personnel. TBAs can be trained in life-saving skills, in recognizing early danger signs, and in encouraging pregnant mothers to deliver in waiting homes and accompanying them during labour. Even in the most difficult contexts in Africa, such training has been possible as part of integrated maternal health efforts (Satti and others, 2012; Andemichael and others, 2009). Initial resistance by TBAs to become part of the system can be challenging, but it can be effectively addressed through incentives and community intervention.

Low compensation and limited staff development opportunities feature among the key factors discouraging health-care professionals in developing countries. A meta-analysis of 20 studies identified 7 major themes with potential to motivate and retain health workers in developing countries including financial rewards, career development, continuing education, hospital infrastructure, resource availability, hospital management and recognition/appreciation (Willis-Shattuck and others, 2008). Financial rewards seem to be particularly important. Paying providers based on their performance in Rwanda, under the pay-for-performance scheme, helped to boost the rates of uptake of HIV counselling and testing at a relatively minimal cost per patient (de Walque and others, 2013). Countries have also been able to expand the health workforce in a short time by broadening the recruitment pool and offering flexible career opportunities and non-traditional entry points to health workers (Maeda and others, 2014). Community health workers in Brazil and health extension workers in Ethiopia, for example, were found to require shorter periods of education and were quickly deployed.

Infrastructure

Infrastructure constraints even beyond the health-care system have significant impacts on availability and quality of care

A characteristic of health-care systems in many developing countries is the decaying infrastructure of their facilities as well as a lack of basic equipment, medical supplies and pharmaceuticals. Emergency obstetric and newborn care (EmONC) facilities, a critical intervention for reducing maternal mortality, typically do not have the capacity to deliver all the health services they are designated to provide in developing countries (Ameh and others, 2012). An important number of hospitals across different developing regions have been found to be unable to perform caesarean sections and possess deficient blood banks and oxygen supplies (Manasyan and others, 2009). In many instances, health facilities are simply not available, or those that are available are difficult to reach. This explains why far too many births still continue to occur outside health facilities. In contrast, developing countries that have increased the rate of institutional deliveries or introduced a centralized EmONC facility and ambulance transfer system at the local and district levels have averted an important number of maternal deaths (Tayler-Smith and others, 2013; Padmanaban and others, 2009).

The infrastructure constraints that affect health outcomes are more than just the health-care facilities themselves. While the provision of drinking water and basic sanitation

contributes to preventing diseases such as diarrhoea, the related infrastructure continues to be at a poor state in many developing countries (see chap. V). Poor transport infrastructure also seriously hampers access to health facilities, especially in the face of emergencies and complications. Lack of time and transportation are among the most frequent barriers to women giving birth in a health facility in developing countries (Lerberg and others, 2014).⁵ Partnerships and local communities are important for easing transportation constraints while the necessary investments are realized (Odusola, 2013). Partnerships involving joint action of the private sector and NGOs in Africa, for example, are using mobile phones to facilitate both provision of and access to transport to reach remote locations. Local communities are easing transport constraints in some African countries through subsidized or interest-free loans for pregnant women to attend check-ups or deliver their babies.

Even when transportation is available, the distance to the health facilities is an issue, especially when pregnant women (approaching the stage of labour and childbirth) living in remote areas cannot easily reach hospitals or clinics. One life-saving intervention has been the establishment of maternal waiting homes in communities that target pregnant women by providing them with antenatal care and emergency obstetric care, among other potential services. This supply intervention works most effectively if there is demand for the services of waiting homes. Free food and free or subsidized transportation to these homes have been important incentives to prompt pregnant women to stay there prior to their expected delivery dates. A number of studies for African countries point to the benefits of maternal waiting homes, including more deliveries attended by skilled personnel and willingness of pregnant women to seek antenatal care, resulting in a sharp reduction in maternal deaths (Andemichael and others, 2009; Ruiz, 2010; Satti and others, 2012).

Integrated community case management

In many developing countries, particularly those with the lowest income, facility-based health-care systems alone cannot provide adequate access to the best-known preventive health interventions and treatment. This is particularly true for countries where health policies fail to reach all targeted populations, especially populations that reside in the poorest, most marginalized areas that are hard to reach. In spite of the progress developing countries have seen in meeting health-related goals, relative inequalities in the health indicators are still appreciable, partly because there are populations living in poverty that are hard to reach, as a comprehensive survey analysis spanning 64 developing countries has shown (Wagstaff, Bredenkamp and Buisman, 2014). Countries with high child mortality rates are particularly affected. For example, in spite of the proven effectiveness of immunization in preventing measles, a fifth of children under the age of five in a number of countries are still not given MCV1 (United Nations, 2014a). Similarly, not all children in the developing world with a diarrhoeal disease receive oral rehydration therapy and most of these children reside in such populations.

Attention must then be paid to efforts that have succeeded in overcoming the barriers to expanding health policies to such underserved populations. Various examples presented above with regard to the policies point to the critical role of communities in helping extend coverage of key health-care services to hard-to-reach populations (see chap. VI for a broader

⁵ There may also be other key infrastructure-related constraints in developing countries that affect health systems, notably a lack of or irregular access to energy, which are not discussed in this *Survey*.

discussion on the role of communities in development goals). As noted, there are numerous examples of health interventions at the community level covering preventive maternal and neonatal practices, micronutrient supplementation for children and women, national immunization days, integrated child health events, and others.

Integrated Community Case Management provides training, supply and supervision to enable front-line community health workers to better diagnose and treat children

However, community efforts need to be implemented in a coordinated and integrated manner, ideally as part of the health system, which is not the case in many of the community efforts noted earlier. The United Nations Children's Fund (UNICEF), WHO, and partners in many developing countries have supported the integrated Community Case Management (iCCM) strategy for a sustained reduction of child mortality, a strategy that is well integrated as part of the health system. It provides training, supply, and supervision of front-line workers at the community level in order to equip them with adequate skills to diagnose deadly childhood diseases and, if needed, treat them using some of the interventions listed in table IV.1. Moreover, iCCM strategies also enable community health workers to identify children with severe acute malnutrition through the assessment of mid-upper-arm circumference.

Programmatic experience documented by Young and others (2012) shows evidence of the effectiveness of these strategies. In Nepal, which has experience in iCCM of child illness, 69 per cent of children under five years of age have access to treatment, and the case-fatality rate for acute diarrhoea and the proportion of severe pneumonia among acute respiratory infection cases across the country have significantly decreased. In Ethiopia, workers deployed in remote communities delivered two and a half times more treatments for three key diseases than all the facility-based providers in the same district. An iCCM study on pneumonia and malaria in Zambia found that 68 per cent of children with pneumonia received early and appropriate treatment from community health workers, and that overtreatment of malaria significantly decreased. The rapid treatment of fevers in young children believed to have malaria symptoms based on RDTs have also been expanded through iCCM programmes, resulting in reductions in the rates of over prescription and leading to better treatment outcomes (Mukanga and others, 2012; World Health Organization, 2013a).

Nonetheless, effective implementation of iCCM strategies can come at a high financial cost when these strategies require significantly stepping up policy support, training, supervision, performance maintenance and regular supplies. In addition, community health workers are increasingly responsible for many health and development tasks, and expansion of their duties needs to be carefully considered in this light (Young and others, 2012).

Health care as a core social institution

Positioning the health system as a core social institution will be critical to providing people-centred solutions that will raise the quality of care

Improved health-care delivery necessitates more than increasing the supply of health workers and facilities and other important infrastructure. Health systems cannot just be addressed as mechanical delivery systems for clinical interventions. It is critical that they are positioned as core social institutions that are deeply embedded in the social, political and economic context of local and national settings in which people-centred solutions are developed with the engagement of communities and front-line health providers. One useful way to think about health systems is as having “hardware” and “software” dimensions (bir Sheikh and others, 2011). Hardware includes all the supply-side inputs, such as health-care personnel, infrastructure and so on. Software includes the ideas and interests, values and norms, and affinities and power that guide actions and underpin the relationships among

actors and elements of the system. All of these elements are critical to overall performance as well as the extent to which solutions are people-centred. In this perspective, like all institutions with a relevant role to play for development, health systems have important dynamics that determine how they function.

Implementing people-centred solutions requires adequate quality of health care. Importantly, this includes not just clinical quality, but also an adequate interpersonal relationship between health-care providers and end users. There have been a number of studies showing that high coverage of key clinical interventions has not had the expected impact on mortality because of low-quality interpersonal relationships between health-care providers and end users (Souza and others, 2014). A good example of a social policy that led to high coverage of a theoretically effective intervention is India's Janani Suraksha Yojana conditional cash transfer programme, which paid women to deliver in facilities. The evidence shows that the programme succeeded in raising institutional births significantly. However, a significant association between institutional birth proportion and the maternal mortality ratio has not been observed partly because of the low quality of care at institutions (Randive, Diwan and De Costa, 2013).

Against this backdrop, the quality of care is an aspect of health systems that is being highlighted in new global MNCH strategies. In maternal health, there is a new movement for respectful maternal care, the lack of which is now understood to be a huge barrier to access (Freedman and Kruk, 2014). It is especially important to ensure that women's health during pregnancy and childbirth (not to mention before pregnancy) is a basic human right. There are multiple resolutions in the Human Rights Council in recent years stating this, as well as available technical guidance on how to implement a rights-based approach to maternal mortality policy and programmes (United Nations, General Assembly, 2012 and 2014a). Because a large proportion of obstetric complications cannot be predicted or prevented but can be treated, the basic principle is that all women need to have access to emergency obstetric and newborn care, recognizing that the same interventions (for example, caesarean section) will be critical to saving the lives of many newborns and mothers.

Policy efforts and strengthening of health systems going forward

This chapter has reviewed health policy interventions that are most commonly known for achieving health-related goals, as well as preventive practices for tackling the problem of neonatal mortality, which was overlooked early in the new millennium. In most instances, these health interventions are cost-effective; otherwise, they are effective but may have cost issues that should be addressed going forward. These policies still hold great potential to address the unfinished business of the MDGs and pursue the broader 2030 Agenda for Sustainable Development. The ways in which this holds true may vary from goal to goal, from sector to sector, from country to country, and even across developing regions.

Areas of focus for policy efforts to address unfinished business

The concrete areas where the policy efforts should focus to complete the unfinished business of the MDGs in developing countries are threefold.

First, increased efforts to prevent neonatal deaths will be necessary as the proportion of deaths occurring in the first 28 days of life in under-five mortality has been increasing. Thus, implementing effective integrated solutions for both mothers and newborns, including family planning, will be critical going forward.

Second, in spite of past progress, it will still be of paramount importance to continue combating infectious diseases such as pneumonia, diarrhoea and malaria as they continue to cause most of the deaths in children under age five. Reaching underserved populations as well as strengthening large-scale implementation interventions and addressing their cost issues will be critical steps in combating these and other diseases affecting broader populations.

Third, continued improvement of nutrition will be necessary. Many under-five deaths still occur in children already weakened by undernutrition. Moreover, pregnant women also typically continue to face serious constraints to improving their nutrient intake, especially in low-income countries.

While existing policy interventions to tackle neonatal mortality, infectious diseases, and nutrition deficiencies need no reinvention, they will not succeed without greater policy coherence and strengthening of the health system.

Integrated solutions with greater policy coherence and effectiveness

Health policy interventions appear to have had the best results—in terms of contributing to faster progress towards achieving the health-related MDGs—when they featured as part of integrated strategies whose core principle is lifelong access to health care for women, newborns and older children. Not only are these strategies useful for integrating solutions against key diseases and life-threatening conditions, they can also ensure that family planning becomes part of primary health care; tackle nutritional and environmental concerns that influence health; and create more awareness to prompt adequate healthy behaviours. However, integrating solutions may not be enough to achieve good outcomes if the three important following issues of coherence and effectiveness are not addressed going forward.

First, some of the policy interventions of integrated health strategies have been seen to detract from others. For example, there have been instances of vaccination rates falling due to higher costs of integrated interventions, longer service delivery times and other logistical issues. These issues should be addressed in order to increase the efficiency of integrated strategies for improving achievements on a variety of health development targets simultaneously. An adequate interface between development policies and budgetary frameworks, which was referred to in previous chapters, may contribute to policy coherence in health as well. However, the strengthening of the health system should be the most critical area of focus with a view to achieving greater policy coherence going forward.

Second, the effectiveness of each policy intervention itself, even before it features as part of an integrated health strategy, is another important aspect to consider. The impact of policies has been determined by a multiplicity of factors, starting once again with the adequacy of health systems, not only in terms of both quantity and quality, but also other factors, such as relevance of the intervention in particular country contexts; extent to which the intervention reaches underserved and vulnerable populations or, where relevant, whether it can be implemented on a large scale; cost issues; and people's awareness of diseases and methods of prevention through healthy behaviours.

Third, some of the health policies used to pursue development goals seem to be reaching their limits as progress is achieved and the causes of disease and death change, particularly in middle-income countries. Going forward, it is important that health systems are able to understand starting conditions in order to identify those interventions that should feature prominently in their strategies. Along the route, it will be important to closely monitor the effectiveness of policies in view of changing conditions. When inefficiencies arise, it will be critical to reallocate resources to undertake new and innovative effective interventions tailored to country realities.

Areas of focus for strengthening the health system

Achieving integration, coherence and effectiveness of policies to tackle the problems of neonatal mortality, infectious diseases, and nutrition deficiencies will depend enormously on the functioning of the health system. A variety of factors closely associated with the limitations of health systems have held back progress with regard to all health-related MDGs. The supply-side needs of health systems will continue to be critical, but it will also be necessary to pay more attention to the quality of care and the positioning of health systems as core social institutions. Strengthening the health system in developing countries will demand the following pathways.

First, the shortage of skilled health personnel was not adequately addressed in many developing countries since the MDGs were adopted. Motivating and retaining health workers will be important to addressing the shortage, especially to prevent emigration of health-care personnel from countries which severely lack them. Nonetheless, the lesson is that even if health workers can be motivated and retained, the critical policy for overcoming the existing deficit of health professionals is to produce more of them, especially through long-term education.

Second, short-term, broad-based training programmes for existing health-care professionals will be required while the pool of new professionals rises through long-term education, especially in the least developed countries. Broadening the recruitment pool and offering flexible career opportunities and non-traditional entry points to health workers will also be important. The roles of traditional birth attendants should become complementary to those of trained medical personnel in the countries where they are still culturally accepted. Community health workers and health extension workers should feature as critical actors for the provision of health services as they typically require shorter periods of training and can be deployed quickly. They need to be formally integrated as part of a comprehensive primary health system.

Third, more traditional and non-traditional health facilities need to be constructed. The latter include maternal waiting homes as well as drop-in centres for testing, counselling, treatment and other medical interventions, in close proximity to communities and targeted populations. Incentives such as free food, free or subsidized transportation, and others will be important for creating demand for less traditional health centres once they have been built.

Fourth, efforts for strengthening infrastructure should go beyond health facilities. Investing in transport infrastructure will be critical to expediting access to health centres. Governments should rely on partnerships and local communities to ease transport constraints, targeting those populations that most need medical attention while also incentivizing their

demand for these services. Policies to reduce child and maternal mortality will have less effect if water and sanitation infrastructure does not improve.

Fifth, health systems should be increasingly positioned as core social institutions that are deeply embedded in the social, political and economic context of local and national settings. Interventions should become people-centred and be developed with the engagement of communities and front-line health providers. People-centred solutions will require adequate clinical and non-clinical quality of health care and a rights-based approach to policies and programmes. All women must have access to emergency obstetric and newborn care and the lives of people living with HIV/AIDS must be supported and improved through programmes.

Sixth, investment and operating costs involved in improving the functioning of health systems will be high and can hamper sustainability going forward. This highlights the need to bridge existing health spending gaps. External assistance has to continue and increase for countries that do not have enough domestic resources to finance the spending required. Furthermore, vertical interventions should continue to be harmonized with the horizontal health system so that the former do not weaken the latter and instead strengthen it.