# Sustainable Health Systems and Fair Financing for achieving Universal Health Coverage in Kenya

## A framework for support from the World Bank Group

**September 2014**

**Background:**

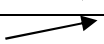
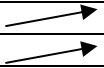
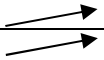
a) Country context

1. Kenya with an estimated population of about 43 million is going through transformational changes with its new constitution. The Kenyan economy grew steadily from 5.1% in 2003 to 7.0% in 2007, but declined to a low of 1.5% in 2008 largely due to the post-election violence and the global economic crisis. Kenya has maintained a stable macroeconomic environment despite challenges of financing the new devolved system of governance. The economy is projected to have grown by 5% in 2013, and it is expected to grow by 5.1% in 2014. Medium term prospects are stronger, with the growth in Gross Domestic Product (GDP) projected to improve to around 6%.

2. According to the recent World Bank's economic update, Kenya has made some notable progress during the past half century. Kenyans are living two decades longer, fertility and infant mortality have been cut into half, and school enrolment at primary and secondary level has more than doubled. GDP per capita has increased eightfold and Kenya's financial sector is now the third largest, after South Africa's and Nigeria's, in sub-Saharan Africa. Kenya now needs to reflect how such overall country progress helped to transform the lives of the majority of Kenyans. Nearly four in 10 Kenyans still live in poverty, maternal mortality is among the highest in Africa, secondary school enrolment is low and learning achievement levels are well below their potential. GDP growth, while solid, has yet to reach the takeoff level necessary to transform Kenya into a modern market economy and change the lives of ordinary Kenyans.

3. Table 1 summarizes key demographic, economic and social development indicators as measured in different time periods.

**Table 1: Demographic, Economic and Social Development Indicators[1,2,3,4]**

| Indicator | Status | Year | Trend |
|---|---|---|---|
| Total population(millions) | 43.1 | 2012 |  |
| Fertility rate | 4.6 | 2008 |  |
| Life Expectancy at Birth | 61 | 2012 |  |
| Gross Domestic Product (GDP)(US$ billions) | 40.7 | 2012 |  |
| GDP per capita (US$) | 942.5 | 2012 |  |
| GDP growth rate | 4.6% | 2012 |  |
| Poverty head count | 45.9% | 2006 |  |
| Gini Index | 0.477 | 2007 |  |
| Life Expectancy at Birth | 62 | 2012 |  |
| Under five mortality | 74 | 2008 |  |
| Infant Mortality Rate | 52 | 2008 |  |
| Prevalence of HIV (15-49 years) | 5.6 | 2008 |  |
| % of births assisted by skilled health worker | 43.8% | 2008 |  |
| % of pregnant women making>= 4 antenatal visits | 47.1% | 2008 |  |

b) New Constitution and devolution

4. Kenya's new constitution is most progressive and widely perceived by Kenyans from all walks of life as a new and positive beginning. The devolution envisaged by the constitution aims to reduce longstanding spatial inequalities and make access to essential services a basic right to Kenyan citizens. A devolved government makes eminent sense given Kenya's socio-cultural diversity and past

[1] World Bank Development Indicators.
[2] Kenya National Bureau of Statistics, ICF Macro (2010): Kenya Demographic and Health Survey 2008-09.
[3] Ndirangu L. and Mathenge M (2010). Decomposition of regional inequality in rural Kenya. CSAE Conference Paper, March, Nairobi.
[4] Kenya National Bureau of Statistics - Ministry of Planning and National development (2006). Kenya Integrated Household Budget Survey 2005-2006.

experience with political use of central power. The equitable share formula addresses long term disparities at the subnational level by providing higher per capita shares to historically marginalized (Arid and semi-Arid) compared to historically privileged Counties.

5. According to the report "*Devolution without Disruption*" jointly prepared by the World Bank and the Austrian Aid, devolved government presents an opportunity to address the diversity of local needs, choices and constraints. Kenya is a very diverse country with ten major and more than thirty minor ethnic Groups. The needs are very different between the arid and semi-arid north, the highlands, the rural northern Rift Valley, the urban centers of Mombasa, Nairobi, and Kisumu, the Coast, and Western Kenya.

6. Counties will be better placed than the national government to deliver social services, because they have specific challenges and the local knowledge to address them. For instance, in the case of health, lagging counties still need to catch-up in providing basic health services, while the leading urban counties will be faced with new emerging challenges with non-communicable diseases such as diabetes, hypertension, and cancer. With these stark differences across counties, it makes little sense to provide the same mix of services across the country. With a constitutional guarantee of unconditional transfers from the center, Kenya's counties will have the means and the autonomy to begin to address local needs, and their citizens will have more opportunities to hold them accountable for their performance.

7. Kenya's devolution is very ambitious, and therefore commensurately risky. First, it is a massive undertaking from a logistical point of view, and secondly there are diverging views on how far and how fast it should be implemented. On one side, it has the potential to redress perceived ethnic and political bias by giving local communities far greater control over resources and decisions about service delivery. On the other, devolution could potentially undermine national unity and reverse some of the gains made in the delivery of services that are essential for the welfare of the entire population, as well as for the health of its growing economy.

8. Equal distribution of wealth across Kenya may be desirable politically, but it is impossible economically. The very strong urbanization trend has not spared Kenya. With a few exceptions, counties will be too small to generate the economies of scale. Moreover, no matter what remote counties do to attract them, most investors will chose to locate their operations in Kenya's big cities. The next two years therefore will be critical as the foundations of the devolution architecture get laid and will crystallize.

9. Kenya's devolution is not only a critical milestone in this country's history; it is also remarkable in global terms. Many countries—both rich and poor—have transferred power and resources to lower levels of government. Few have done so to entirely new subnational units, which they have had to establish from scratch. The country will undergo a dual transition: a transfer of power and resources from the center to the subnational level and a simultaneous reorganization of local government, with the consolidation of existing local administration.

c) Commitment to achieve Universal Health Coverage

10. Universal Health Coverage (UHC) currently dominates the global health agenda. Since the 58th World Health Assembly, governments, international organizations, funders and others have engaged in debates on how countries can move rapidly towards UHC[5]. UHC requires the entire population to access quality healthcare services when needed and without incurring financial catastrophe. Thus, it has two main goals: financial risk protection and access to needed care. Making progress towards these goals requires high levels of income and risk cross-subsidization.

[5] World Health Organisation (2010). The World Health Report: health systems financing: the path to universal coverage. Geneva: World Health Organisation.

11. UHC features prominently in Kenyan health policy over the past decade and is among the flagship initiatives identified by the current government. The UHC is identified as one of the pillars that will support the country's transition to a middle income status as envisaged by Kenya's Vision 2030. Kenya's Second Medium Term Plan (2012-17) listed several steps to attain UHC. The key milestones are summarized as follows:

- *Development of a Social Health Insurance (SHI) bill in 2004/2005*. The SHI bill drew attention both locally and internationally but was met with resistance from various stakeholders including some political leaders, employers and employees, private healthcare providers and private insurance companies. The bill was passed in parliament, but could not get the presidential assent due to a mix of technical and political reasons. Discussions were again initiated in 2007 and a draft health financing strategy developed in 2008[6]. The process again stalled and got reactivated in 2013, when the Ministry of Health (MoH) requested support from the Providing for Health (P4H) network to review their draft strategy and suggest the way forward. A 2014 draft policy options paper will inform the finalization of the health financing strategy. However, lack of an overarching health financing strategy still remains a constraint for embarking on the much needed reforms for attaining UHC.

- *User fees removal at dispensaries and health centers in 2004.* The Government removed user fee in dispensaries and health centers, and replaced them with a registration fee of Kenya shillings (KES) 10 and 20 respectively (commonly known as 10/20 policy). Pregnant women, children under five, the poor and selected conditions/services like malaria and tuberculosis were exempted from any payment. An evaluation of the 10/20 policy, six months after implementation recorded a 70% increase in utilization. The large increase, however, was not sustained, although in general utilization remained 30% higher than prior to user fees removal[7]. A follow up assessment of the policy three years after implementation showed that facilities had reversed back to the varying user fees due to many challenges related to lack of full and timely compensation for lost revenue, drug shortages, poor policy design and implementation challenges[8].

- *Direct cash transfers to primary health care facilities in 2010.* The Government of Kenya introduced the Health Sector Services Fund (HSSF) with support from the World Bank and DANIDA. This initiative builds on the findings of the successive public expenditure tracking surveys that non salary recurrent costs meant for the primary healthcare facilities do not actually reach the facilities. Under the HSSF, primary care facilities received funds directly to their bank accounts without going through the district treasury. The funds are managed by Health Facility Management Committees (HFMC) consisting of community members and the officer in charge of the facility. The system was to obviate the funding predictability gaps of the old system, and to empower the community to actively participate in the management of primary health care services. Preliminary evaluation of the HSSF indicated that these funds contributed to service delivery improvements through supporting the purchase of drugs, employing support staff, renovating buildings and paying for utilities like water and electricity[9]. The HSSF still continues to function under the devolved system and efforts are underway to realign it with the new constitutionally sanctioned structures.

[6] Ministry of Public Health and Sanitation and Ministry of Medical Services (2009). Health Care Financing Policy and Strategy: Systems change for universal coverage.
[7] Ministry of Health (2005). Rural Health Faciltieis unit cost/cost sharing review study and the impact of the 10:20 policy.
[8] Chuma J, Musimbi J, Okungu V, Goodman C, Molyneux C (2009). Reducing user fees for primary health care in Kenya: Policy on paper or policy in practice? *International Journal of Equity in Health*, 8:15.

[9] Apwora A, Kabare M, Molyneux S, Goodman C (2010). Direct facility funding as a response to user fee reduction: implementation and perceived impact among Kenyan health centres and dispensaries. *Health policy and planning*, **25**(5): 406-418.

- *Civil servants health insurance scheme in 2012.* This scheme provides coverage for all civil servants and the military. It provides comprehensive cover for outpatient and inpatient services for civil servants and their dependents. Contributions to the civil servants scheme - administered through the National Hospital Insurance Fund (NHIF), are based on medical allowances that were previously paid to staff on a monthly basis, and amount to a total of KES 4.5 billion per year. For the first time, provision of outpatient services on a capitation basis was introduced in this scheme. However, there is no formal assessment of its efficiency.

- *User fees removal for primary healthcare in June 2013.* The Jubilee government abolished all user fees in dispensaries and health centers again and established a new mechanism to compensate facilities for their lost revenue. Under the new policy, dispensaries and health centers are compensated for lost revenue estimated using their previous collection levels. In 2013 the government committed KES 700 million for compensation of lost revenues. The implications of the new policy on utilization and service provision have not yet been documented.

- *Free maternity care in public health facilities in 2013.* The government announced a policy to remove fees for maternal health services in all public health facilities, and committed KES 3.8 billion to fund it in FY 2013-14. All public health facilities are compensated for any lost revenue arising from free delivery at a standardized rate of KES 2,500 for dispensaries and health centers; KES 5000 for level 4 and 5 hospitals and KES 17, 000 for Level 6 hospitals. The implications of this policy for access to skilled health workers have not been systematically assessed, although anecdotal information suggests that many more mothers are now delivering in health facilities following the free deliveries policy.

- *Health Insurance Subsidy for the Poor (HISP) Program in 2014.* The pilot phase of this countrywide initiative was recently launched covering about 500 households in each of the 47 counties. The households, selected from a list of orphans and vulnerable children, are issued with a NHIF card, which allows them to access outpatient and inpatient services in accredited public and private health facilities. The HISP program is supported by the World Bank Group and will operate for two years. The Kenyan government has already indicated commitment to continue it and expand coverage to the poorest population after the pilot. Several County governments are also showing commitment to UHC, with some counties allocating part of their budget to purchase health insurance for poor households. An impact evaluation will be undertaken by the WBG during 2015, which will inform the necessary design changes for its nationwide introduction. Other partners, especially Japanese International Cooperation Agency (JICA) and the German Development Bank (KfW) are keen to join this initiative.

12. While, the NHIF remains a key player for delivering UHC in Kenya, it faces several governance, institutional and operational challenges that could affect its performance. Furthermore, the efforts to reduce the very high administrative costs (over a third of the premiums paid) have not yet brought the desired results. This is partly due to non-revision of mandatory NHIF share to be paid by staff employed in the formal sector. Efforts to enhance the coverage for informal sector have not been very successful. A strategic review undertaken by the IFC informed the key challenges being faced by the NHIF and suggested a number of measures to address them. Subsequently, a task force constituted by the new Cabinet Secretary has proposed specific short term quick wins to improve efficiency and transparency and some longer term measures to improve coverage. Despite the cabinet endorsement to this approach, the progress on NIHF reforms remains tardy.

**Situation Analysis:**

a) Demographic and Geographic Transition

13. The ongoing demographic and political transitions in Kenya provide an important window of opportunity for promoting shared prosperity. Kenya's population is projected to climb from 44 million today, to nearly 60 million during the next decade, and to almost 100 million by 2050 (Table 1). According to UN projections, Kenya's population will grow by around 1 million per year - 3,000 people every day - over the next 40 years. Kenya will be the world's 20th most populous nation by 2050 and the 15th largest by 2100 (Annex 3 provides detailed projections). These projections, however, depend on government policies and the broader economic environment.

14. Until about 2000, Kenya's population growth was driven by increasing numbers of children. This is no longer a driver for population growth with the number of births by a woman falling sharply, from 8.1 children in 1978 to 4.6 children in 2008, and projected to possibly reach below 3 children by 2050. Based on these trends, the total number of children aged 0 to 14 is expected to increase by only 40 percent by 2050, from 17.5 million to 24.5 million. But the total population will nonetheless more than double, due to several-fold increase of adult population.

15. Kenya is at the start of a "demographic transition" and the proportion of the working-age population will grow much faster than the young and elderly population groups that depend on them. A study by the World Bank[10] suggests that the rapid population growth is contributed by two factors. Higher fertility is the main driver for population growth in previous decades. As a result, there are many more families today. Even though families are smaller, the total number of children continues to grow due to increased number of families. In addition, Kenyans are living longer. Life expectancy is projected to increase from 54 years today to 68 years by 2050. As a result of these trends, the fastest growing population groups are economically productive adults (15-64 years). From only 22 million working-age people today, by 2050 the country will have about 56 million working-age people.

16. Kenya will also benefit from the "geographic transition". While rapid population growth remains a challenge in many poor countries, the debate has changed in recent years. The World Development Report for 2009, "Reshaping Economic Geography", found a strong correlation between population density and economic development and concluded that no country has ever reached high income levels with low urbanization. Population growth with rural-urban migration creates larger urban agglomerations, which are critical for achieving sustained growth.

17. Kenya's dynamic service industry, which typically has lower barriers of entry than agriculture or manufacturing, provides opportunities for young entrepreneurs. Further, larger groups of population living in close proximity allow for economies of scale. Companies can produce goods in larger numbers and more cheaply, serving a larger number of low-income customers. Over the past decade, Kenya has seen the emergence of a number of companies such as Safaricom, Equity Bank and BIDCO that have successfully targeted the large numbers of lower and lower-middle income groups,the "bottom of the pyramid". Their business model is viable because they can serve a multi-million customer base, which has increased by 25% over the last 10 years and which continues to grow rapidly.

18. In light of these facts, it is clear that Kenya's future patterns of fertility and urbanization offer a huge potential for contributing to shared prosperity. To effectively harness the opportunity created by its demographic dividend, Kenya needs to invest in enhancing human capital. The government needs to facilitate building skills and employment opportunities for youth to effectively offer needed services on a much larger scale and to a rapidly growing and urbanizing country.

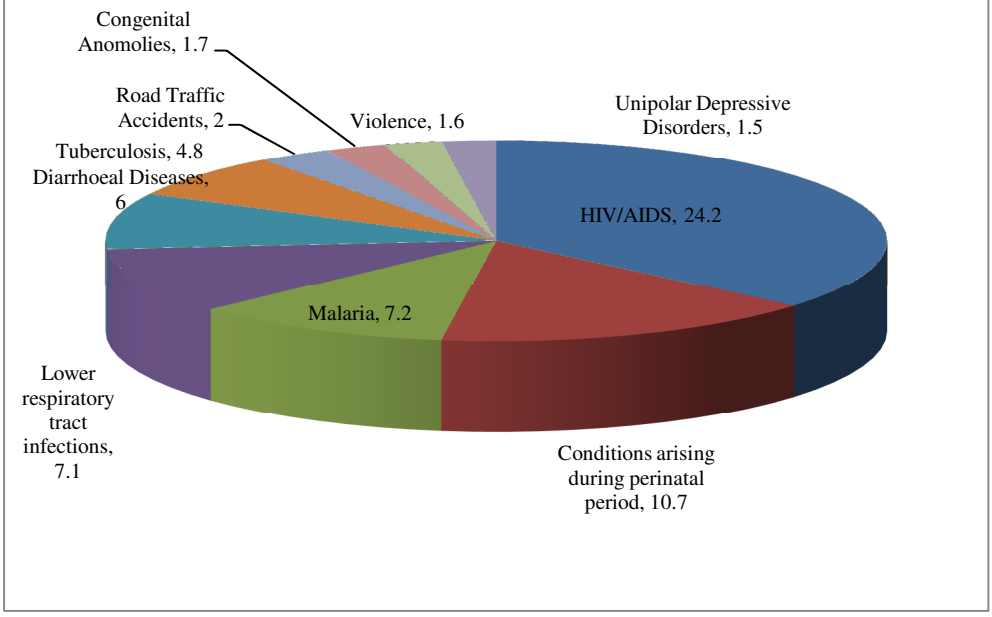
b) Disease burden: changing trends

19. The Global Burden of Disease Study 2010 (GBD 2010) by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington suggests that in terms of the number of Years of

[10] Demographic Transition and Growth in Kenya, Wolfgang Fengler, April 2010

Life Lost (YLLs) due to premature death in Kenya, HIV/AIDS, lower respiratory infections, and malaria were the highest ranking causes. Out of the 25 most important causes of burden, as measured by Disability-Adjusted Life Years (DALYs), lower respiratory infections showed the largest decrease, falling by 21% from 1990 to 2010. The leading risk factor in Kenya as % of DALY is childhood underweight (Figure 1).

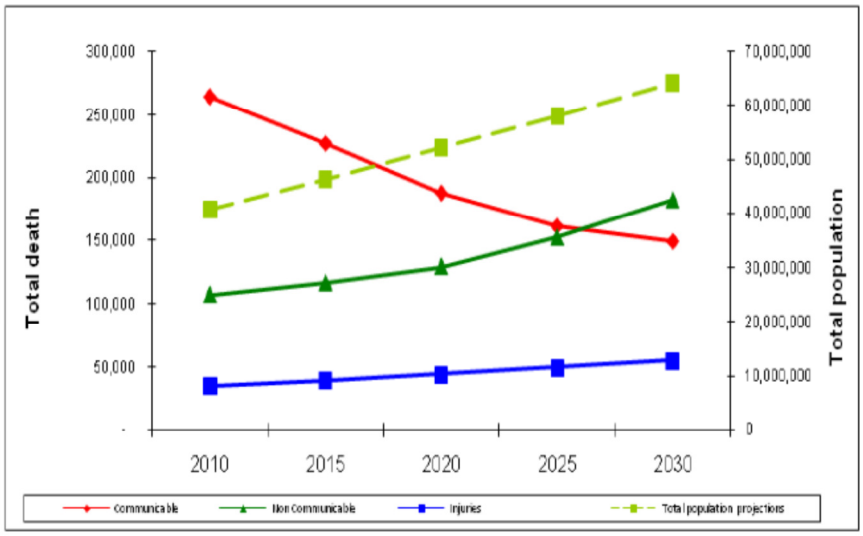
**Figure 1: Disability Adjusted Live Years Lost -Kenya**




20. The recent estimates suggest that Communicable Diseases, maternal and perinatal conditions continue to be leading causes of the disease burden in Kenya, with HIV/AIDS dominating the disability adjusted life years lost, followed by conditions arising during perinatal period, lower respiratory tract infections and diarrheal diseases. However, hospital data suggest that Non-Communicable Diseases (NCDs) account for 50 – 70% of all hospital admissions and up to 50% of all inpatient mortality. The current total annual mortality is estimated at approximately 420,000 people, out of which 270,000 (64%), 110,000 (26%) and 40,000 (10%) are due to communicable, NCDs and injuries respectively[11]. It is estimated that, by 2027, Kenyans are to suffer more from NCDs than communicable diseases even when injuries are excluded. Communicable diseases would decline to 140,000 (39%), and NCDs, and injuries to 170,000 (47%), and 60,000 (14%) respectively (Figure 2).

[11] Ministry of Health (2013). Kenya Health Policy 2012-2030.

**Figure 2: Cause specific mortality projections for Kenya: 2011-2030**[12]




c) Performance of Kenya with comparable countries

21. Despite making progress in the control of Communicable Diseases, Kenya's achievements in reduction of maternal and child mortality are much less remarkable compared to the countries in the East Africa Region. In fact in 1990, Kenya started with much lower estimated levels of child and maternal mortality. However, the other countries in the Eastern Africa region have made a more notable progress, especially in case of maternal mortality.

**Figure 3: Trends in Maternal Mortality in East Africa**

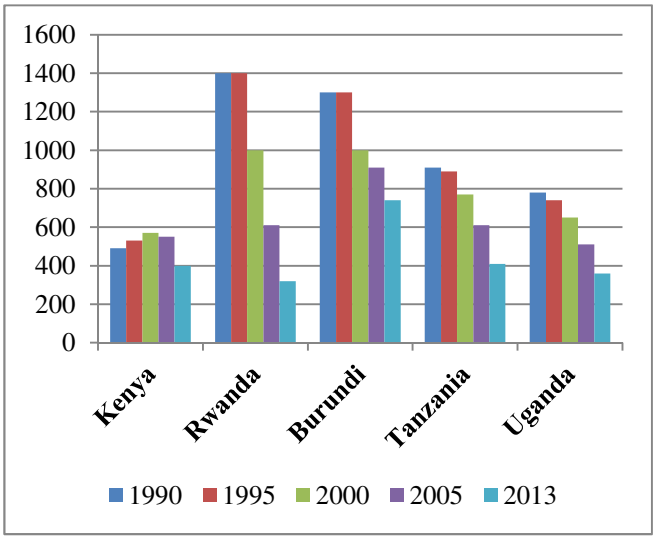
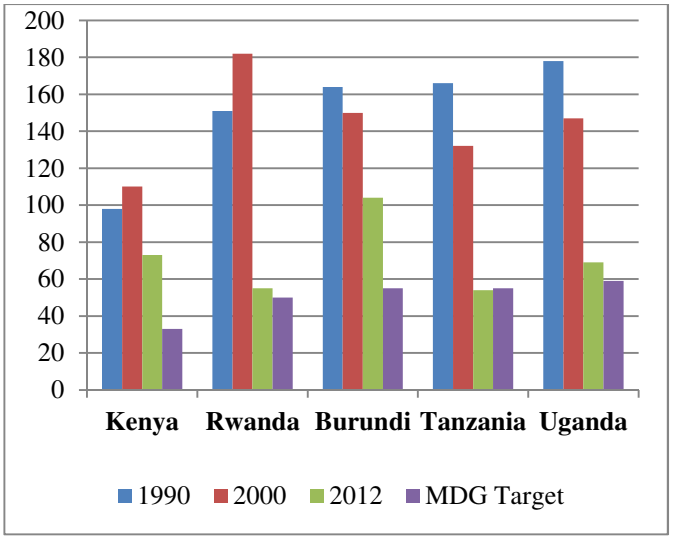



**Figure 4: Trends in Child Mortality in Eastern Africa**




22. A comparison of Kenya's health sector overall achievements with selected middle income countries show that average life expectancy of a person born in Kenya in 2011 is equivalent to a person born in the late 1960s in China, while the total fertility rate of Kenya in 2011 is comparable to that of Brazil in the early 1970s. These comparisons can help putting into context Kenya's Vision 2030

[12] Ministry of Health (2013). Kenya Health Policy 2012-2030.

aspirations that include reaching the middle income status and possibly realizing that this is an impossible target without sufficient and sustained human capital investments.

23. These trends clearly highlight the urgent need to fast track strategies and evidence based interventions for improving these important health outcomes. It is however paramount to note that it requires multi-sectoral contributions to improve health outcomes, especially women's education, food security and adequate nutrition, water and sanitation, roads and transport.

**Figure 5: Life Expectancy in Kenya in 2011 is comparable to that of China in late 1960s**

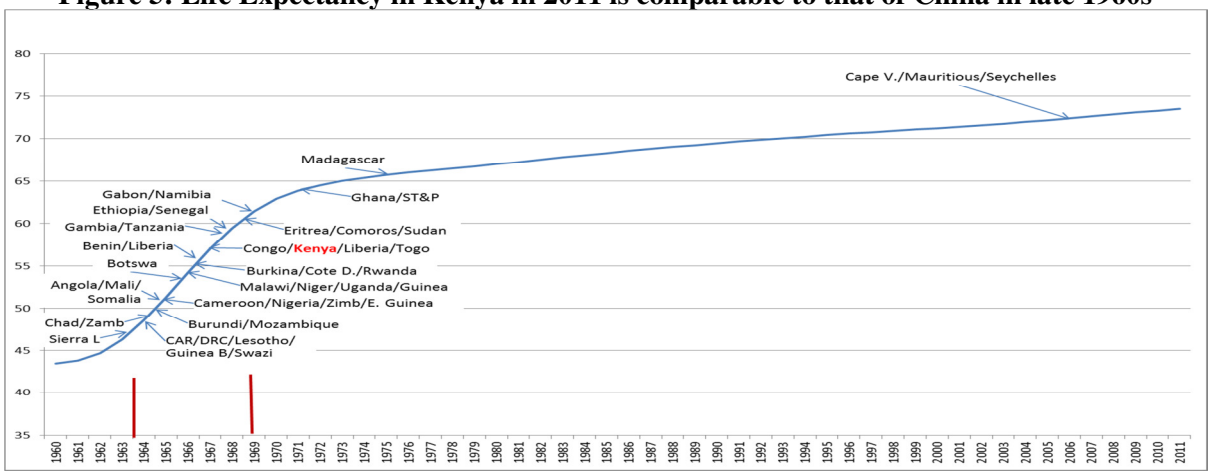
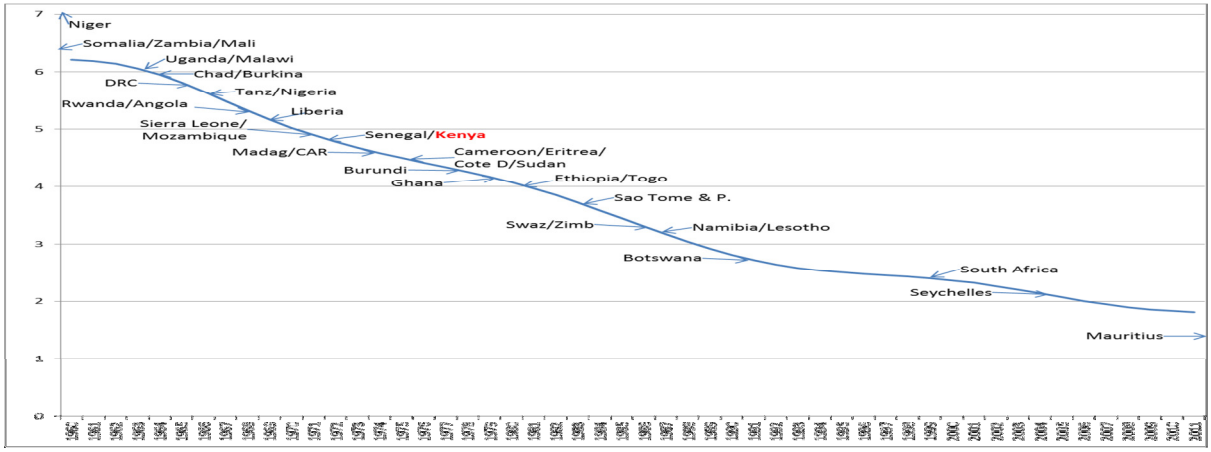



**Figure 6: Total Fertility in Kenya is comparable to that of Brazil in early 1970s**



d) Geographic and economic inequalities in HNP outcomes

24. As highlighted earlier, Kenya has made better progress in improving child health outcomes compared to that of maternal health. The Under 5 Mortality Rates (U5MR) declined by 36% from 115 deaths per 1,000 live births in 2003 to 74 2008, while Infant Mortality Rate has dropped by 32% from 77 deaths per 1,000 in 2003 to 52 in 2008[13]. Neonatal Mortality Rate declined more than 50% from 44 in 2003 to 21 in 2008. However, these improvements were not equitably distributed, and inequalities continue to exist by geographic location and wealth as shown in Figures (7 and 9).

**Figure 7: Distribution of U5MR by Region (2008)**

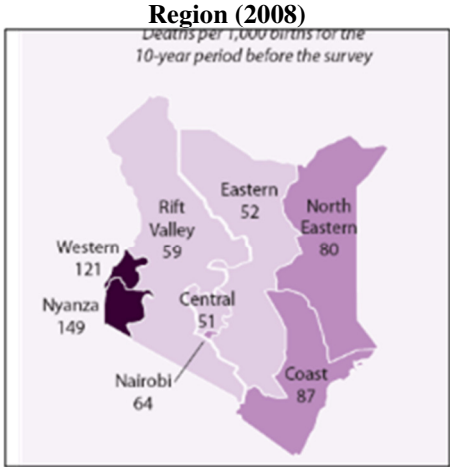
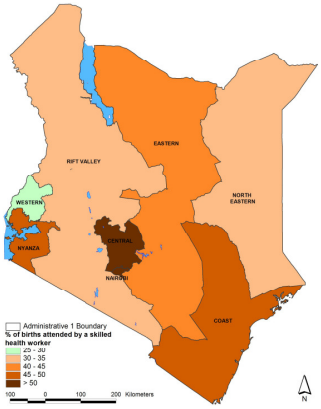
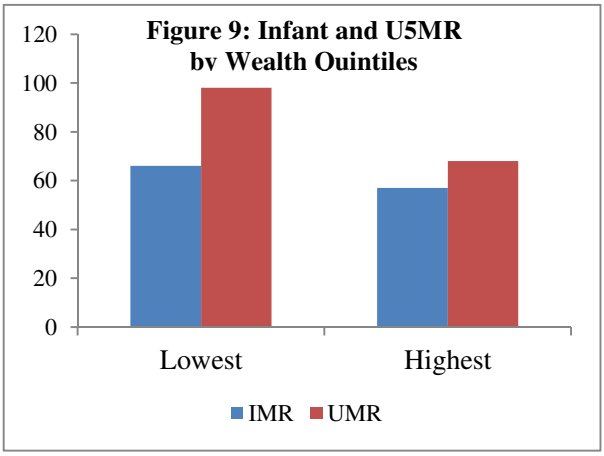



**Figure 8: Skilled birth attendants during delivery**




25. The observed regional disparities in both IMR and U5MR to some extent also reflect the distribution of poverty, mother's education that determines the child caring practices, household food security and access to water and sanitation and the role of broader economic, nutrition and social determinants on child mortality.

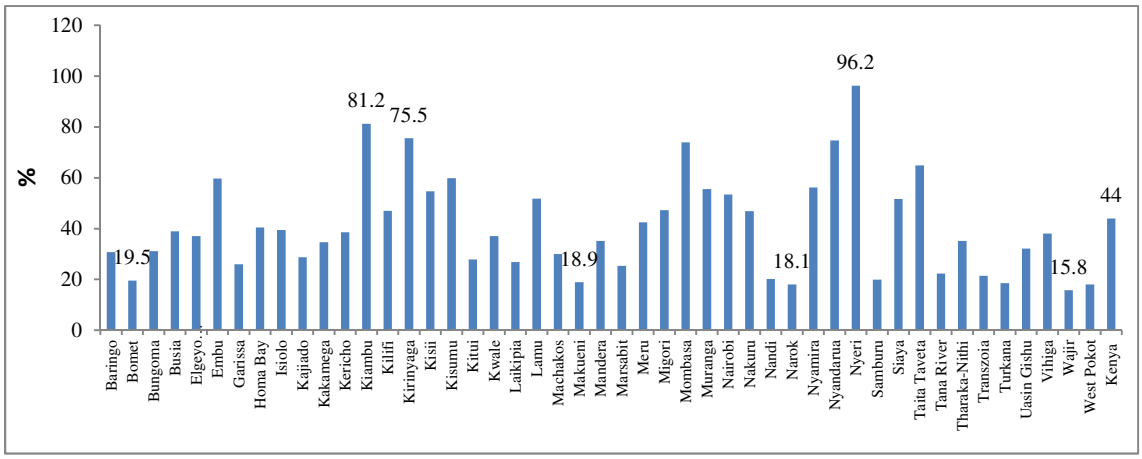
**Figure 9: Infant and U5MR by Wealth Quintiles**




26. Less than half of pregnant women in Kenya are attended by a skilled health worker during delivery. There are however wide regional variations. In 2008 in Western parts of the country only about 29%, compared to 89% and 74% in Nairobi and Central provinces respectively (Figure 8). Even within these areas there are socio-economic differentials, as people living in informal settlements of Nairobi are reported to have limited access to public facilities and are often serviced by private providers offering poor quality services due to lack of qualified personnel, equipment and supplies[14] Urban-rural, wealth and regional differences persist in access to and utilization of maternity services provided by skilled health workers.

[13] Kenya National Bureau of Statistics, ICF Macro (2010): Kenya Demographic and Health Survey 2008-09.
[14] African Population and Health Research Centre (2009). The maternal health challenges in poor urban communities. Policy brief 12, APHRC, Nairobi.

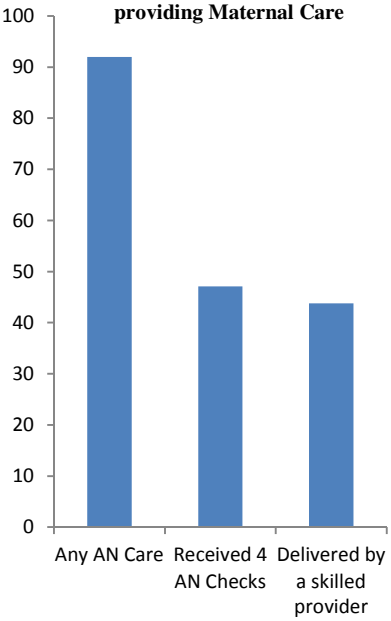
**Figure 10: Percentage of births delivered in a health facility**




27. The share of health facility deliveries (a proxy indicator for skilled attendance at birth) across counties is presented in Figure 10[15] . These data obtained from the Health Management Information System may not reflect the true population level situation, but it clearly shows wide disparities across counties. Almost all women in Nyeri County deliver at a health facility (94%) compared to only 15.8% in Wajir. Similar disparities are observed for chronic malnutrition (an accurate proxy for poverty) and underweight. However, there are minimal disparities across counties in the percentage of fully immunized children.

28. What is interesting is the huge missed opportunity to provide maternal health services in Kenya. While nearly 92% of women sought antenatal care at least once during their pregnancy, only about half of them (47%) received the recommended 4 antenatal visits in their last pregnancy[16]. Finally, the share further drops to 44% for those who received services from skilled health workers during child birth.

**Figure 11: Missed opportunities for providing Maternal Care**




e) Health expenditure trends and impact of devolution on public expenditure

29. A functional summary chart of health care financing in Kenya before devolution is shown in Figure 12. Although data on health care expenditure after devolution are not available, one would expect a similar pattern of health financing sources, and wide variations between counties. With devolution, counties receive a global budget, from which they decide what share to allocate to the health sector. Clearly the share of county budget allocated to health largely depends on each county's leadership perceived priorities.

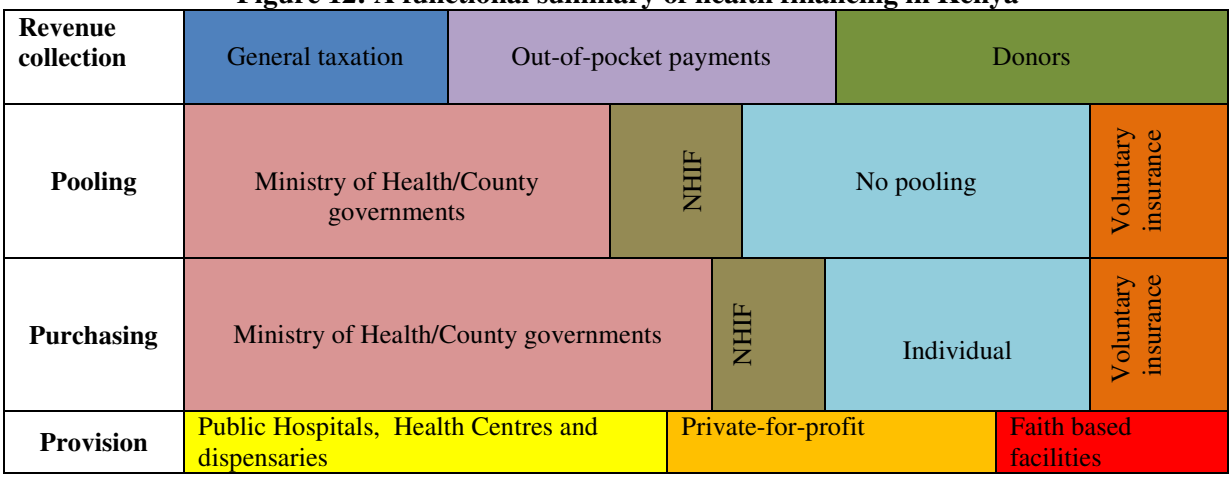
30. The Total Health Expenditure (THE) in 2009/2010 was equivalent to about 4.6% of Total Government Expenditure, a figure well below the 6% average of the African region, while Total per Capita Health Expenditure amounted to US$42.2. There is very limited

[15] Ministry of Health (2013). County Fact sheets 2012-prepared by Health Policy Project-Kenya
[16] Kenya National Bureau of Sstatistics, ICF Macro (2010): Kenya Demographic and Health Survey 2008-09.

pooling in Kenya. Its health care system is funded predominantly through Out-of-Pocket (OOP) payments, which amounted to 40% of THE in 2005 and 37% in 2009.

31. Government funds accounted for 29% of THE in 2005 and 29% in 2009. Donor funding is quite high, amounting to a 32% share of THE in 2005 and 35% in 2009/2010[17,18]. Between 2001/2002 and 2009/2010, the total contributions of donor funds to total health expenditure increased from 16% to 35%. A large proportion of these funds (24%) went to funding HIV/AIDS related programs. Donor funds are largely fragmented and with the largest chunk out of budget, crowd out government funding, and have contingent liabilities when donor funds decrease.

**Figure 12: A functional summary of health financing in Kenya**




32. The devolution had a major impact on overall health financing. During the FY 2012-13, about two thirds of the KES 87 billion health budget was transferred to the equitable share for the 47 counties. In addition, the national government allocated conditional grants to level 5 hospitals, which unfortunately did not fully match the actual need of these referral facilities serving a cluster of counties.

33. Devolved health budget is one of the important contributors of the equitable share amounting to over a third of the total allocation. As per the constitutional mandate, the national government cannot enforce sectoral ring fencing on the equitable share and the counties are free to spend the money as per their voted budgets. While many counties may actually enhance their contribution to the health sector, there are risks that some counties may not be able to provide adequate resources. Also, tracking allocations and expenditures on health could be challenging as many counties include health staff salaries, which contribute to the largest share of public expenditure on health under the county recurrent executive budget.

34. Finally, the systems for disbursement and reporting of newly introduced innovative approaches such as HSSF, user fee exemption for primary care, and free maternity care, all require a shared vision of objectives, approaches, and systems between the national and county governments. Conditional grants will need to be established for these priority initiatives for ensuring that all necessary resources are available in a timely manner at the point of service delivery. Counties play their oversight role by approving work plans, supporting their implementation, measuring results, and reporting expenditure. The national government ensures compliance with country policies, regulation, and global commitments made by Kenya.

[17] Government of Kenya, Health Systems 2020 Project (2009). Kenya National Health Accounts 2005/2006. Health Systems 20/20 project, Abt Associates Inc, Bethesda, MD.
[18] Ministry of Medical services, Ministry of public Health (2012). Kenya National Health Accounts 2009/10. Health Systems 2020.

f) Value for money and efficiency in public expenditure – Allocative and Technical

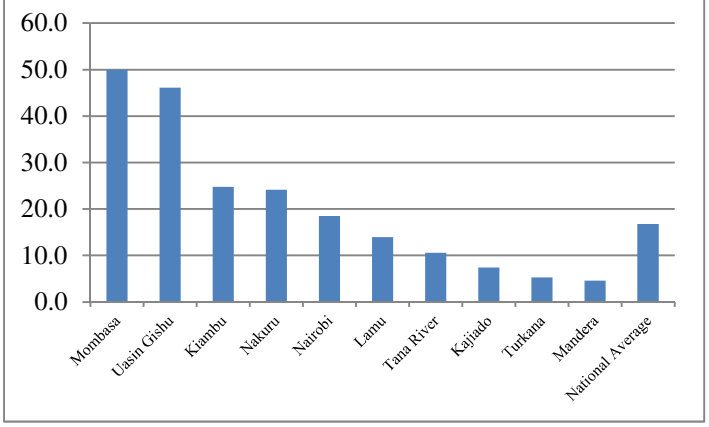
35. Like most developing countries Kenya faces challenges in ensuring better value for resources provided to the health sector. Inefficiencies are both allocative, and technical.

36. A notable share of the health budget is still taken up by hospitals, thereby adversely affecting the primary health care, which delivers both preventive/promotive and curative interventions, such as immunization, prevention and treatment of communicable diseases, family planning and maternal and child health care. Systematic investments in primary healthcare have helped countries like Rwanda to achieve the maternal and child health MDGs. The health worker program in Ethiopia delivers a well-targeted 16 packages of evidence based health and nutrition services, and helped the country to achieve MDG for child health. Brazil has made systematic investments in its family health program to improve access to basic health services and continues to invest in primary care.

37. Human Resources, the most critical element of the country service delivery system requires two thirds of public expenditure on health. We therefore focus on technical efficiency of human resources.

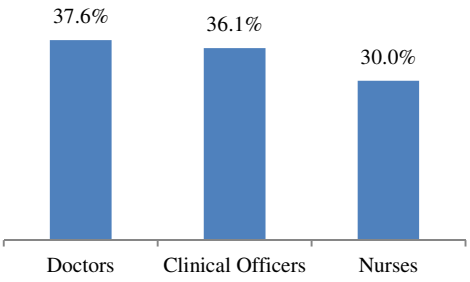
38. The most important challenge the Kenyan health sector faces is the uneven distribution of scarce Human Resources in health. The recent Service Availability and Readiness Assessment Mapping[19] clearly highlight huge disparities. Figure 13 shows the national average stands at less than 20 health staff for 10,000 Kenyans and evidence the huge variations among a selection of counties.

**Figure 13: Health worker per 10,000 population**




39. Even the limited availability of Human Resources gets further affected by high levels of absenteeism. The recent public expenditure tracking survey has shown that at a day of unannounced visits, one third of the health staff were absent from their places of work. Over four fifths of such absences were said to be authorized. Interestingly for nearly half of staff on authorized absence, no specific reason was mentioned. The new county governments bring administration closer to people and hopefully the increased oversight will be able to reduce such challenges.

**Figure 14: Absenteeism of health staff**

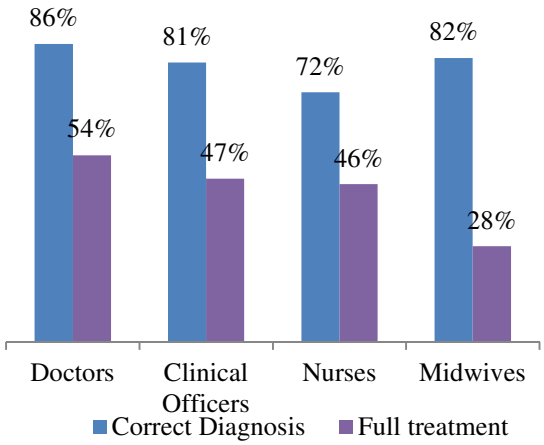



40. The service delivery indicators surveys using standardized approaches show that Kenya health providers have higher knowledge levels relative to their counterparts in other countries in the region. However, when it comes to practice only half of the Kenyan providers were applying their knowledge. Kenya therefore needs to optimize this unique advantage of highly competent providers by providing adequate supportive supervision, right incentives and appropriate operating environment.

[19] Ministry of Health (2013). Kenya Service Availability and Readiness Assessment Mapping.

41. A recent study supported by the WB covering a sample of 35 hospitals, 295 health centers and 33 dispensaries showed that inefficiencies exist in both the public and private sectors, but the private sector is generally more efficient in all levels of care with the exception of health centers. Key findings from this study were (Figure 15)[20]:

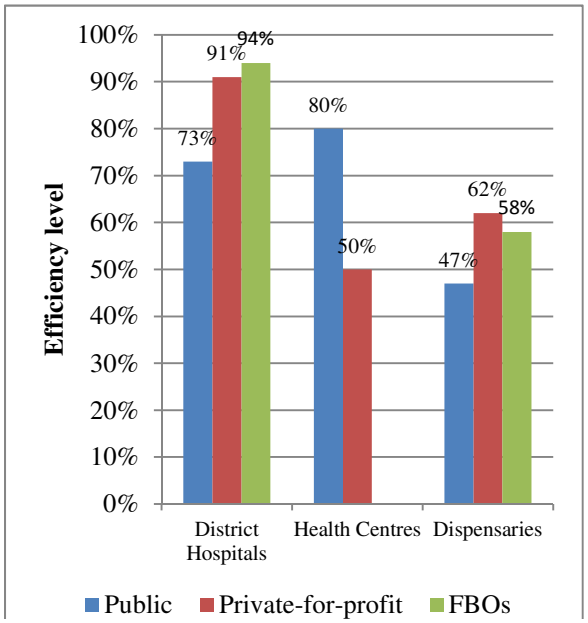
**Figure 14: Knowledge Practice gap among Kenyan Providers**




- Faith based hospitals are the most efficient compared to public and private-for-profit hospitals.
- Using their current resources, public referral hospitals can increase their outputs by 18%; district hospitals by 27%; health centers by 20% and dispensaries by 53%.
- Government health centers are more efficient than private health centers. Private health centers operate at an efficiency level of 50%, indicating that they can double their outputs without necessarily increasing the share of resources.
- FBO dispensaries can increase their outputs by 42%, while FBO hospitals are operating at close to maximum capacity (94%).

42. Despite limitations in data availability and scope of the analysis, the findings of this study clearly highlight that UHC initiatives should be accompanied by efforts to strengthen health systems and reduce inefficiencies. Such efforts should involve a detailed assessment of the causes of inefficiencies, redistribution of resources across geographical regions and levels of care where necessary and, most importantly, review and revise management approaches and tools. It is however important not to lose the equity focus in public sector provision and link payments to performance. Both individual and institutional incentives to improve efficiency and contribute to better health outcomes need to be built into health financing arrangements alongside with ensuring that all other aspects essential to well-functioning of service delivery points are adequately and sustainably covered. Financial incentives alone have ephemeral effects in motivating sustained good performance.

**Figure 15: Efficiency levels in public and private facilities**




[20] World Bank (2013). Health Sector Efficiency in Kenya: Implications for fiscal space

**World Bank Group support for Kenya**

a) Past operations and outcomes

43. The World Bank Group has a long term engagement with the Kenyan health sector which started with a series of population projects in early 1970s. These projects helped to strengthen the country primary health care services delivery. It was followed by operations to support health sector reforms and enhance efficiency of the national referral hospital. As the generalized HIV epidemic started unfolding the Bank supported operations to provide multi-sector response that operated under the direct oversight of the President's office. Unfortunately, cases of fraud and corruption adversely affected the health sector Bank's engagement in 2006. The Bank's subsequent engagement therefore prioritizes very strong governance measures to accompany all its projects and programmes. The post-election violence in 2007 and the subsequent splitting into two Ministries of Health slowed down partner engagement in the health sector.

44. In 2009 the sector context improved and the Bank actively re-engaged itself when Ministries of Health were patently keen to roll out reforms to improve primary health service delivery and pilot health insurance subsidies for the poor. At the same time Kenya played a strong role in promoting regional operations under the leadership of the East African Community.

b) Ongoing operations and experiences

45. The World Bank supports two active operations at the country level. The Total War Against HIV/AIDS (US$133.5 million) focused on a strong preventive response to HIV involving community based organizations, complementing with supply of essential commodities such as, anti -Tuberculosis medicines and Long Lasting Insecticidal Nets (LLINs) for supporting the Government of Kenya's efforts to achieve universal coverage for malaria prevention in high endemic areas. The recent Kenya AIDS indicators survey[21] has shown that this project has successfully achieved most of its development objectives. The Kenya Health Sector Support Project (US$ 156.8 million) supported two key reforms started by Government of Kenya which included the HSSF providing direct cash transfers to primary health care facilities to improve planning and delivery of services; and the introduction of an all levels pull delivery system for EMMS. The external evaluations suggest that both reforms have contributed to improved overall service delivery. In addition, pilots were undertaken to study the operational feasibility and impact of Results Based Financing (RBF) and social accountability. In December 2013, an additional financing of US$ 61 million - which includes US$ 41 million equivalent IDA and US$20 million grant from the Health Results Innovation Trust Fund - was provided for scaling-up of RBF, support and evaluate the introduction of HISP and join ongoing efforts to build capacity of county health systems.

46. In addition, two regional operations, the East Africa Public Health Laboratory Networking Project (Kenya share US$23.5 million) and the East Africa Medicine Regulatory Harmonization Project (Kenya share US$ 0.5 million) are supporting strengthening of core public health functions following a harmonized regional approach.

c) Support from IFC

47. The IFC has established the Health in Africa division to nurture private sector growth and naturally Kenya with its thriving private sector was among the first countries to benefit from this input that came from the World Bank Group. The IFC also undertook the strategic review of the NHIF and

[21] National AIDS and STI Control Program, Ministry of Health, Kenya (2013). Kenya AIDS Indicator Survey 2012: Nairobi, Kenya.

also supported a comprehensive review of the existing regulatory framework for the health sector that resulted in the preparation of a draft health law.

d) Key challenges

48. The ongoing devolution provides a great opportunity to enhance health system accountability and make providers more responsive to users. However, as envisaged, too rapid devolution and lack of clarity in the division of labor among national and county governments are slowing down the recent gains made by Kenya in improving utilization of health services.

49. The first challenge of effective communication between the two levels of the government has been to a large extent resolved now with the creation of the Intergovernmental Technical Committee for Health and the County Executives for Health Forum. However, efforts are still required to enhance the understanding of the health staff as well as citizens about the respective roles and responsibilities of both levels of government (Table 2).

**Table 2: Overview of devolution structures in Kenya**

| Structure | Chair | Comments |
|---|---|---|
| Summit | President | |
| Council of Governors | Elected Governor | County Governor elected by all Governors |
| Intergovernmental Technical Committee (Health) | Governor selected by the Council of Governors | Advisory functions to the Council of Governors |
| Sector Intergovernmental Forum (Health) | Cabinet Secretary CE Forum Chair, Co-chair | Created by an Act of Parliament |
| County Health Executives Forum | One County Executive selected from the County Health Executives Forum | All County Executives of Health select the five member County Health Executives Forum to collectively represent their interests. |
| County Executives for Health | NA | |
| County Chief Officers for Health | NA | Technical |
| County Health Management Teams | NA | |
| Each County has its own organizational set up | NA | |

50. The second challenge is transition of human resources from the national level to the county level and addressing the concerns about staff who are non-existent or working elsewhere (aka ghost workers). The MOH has taken over the responsibility to pay for the health staff during the first 6 months of FY 2013-14 and the national government successfully transitioned the pay roll to counties in January 2014. In the meanwhile counties undertook human resource audits to fix the problem of "ghost workers". Some Governors such as in Mandera also played a proactive role in recruiting staff to make their primary healthcare services functional.

51. The third challenge is ensuring sufficient and sustained supply of EMMS to all service delivery points. The role of the KEMSA has drastically changed with the decentralized allocation of resources for EMMS. A detailed note on efforts made during past five years to improve pharmaceutical supply chain is included in the Annex 2. The capacity built and systems developed by KEMSA to ensure quality, efficiency and governance helped to fit in to the new role. All counties have now entered into a Memorandum Of Understanding with KEMSA, which is now increasingly trying to respond to the needs and wants of 48 demanding masters who have other options. However, there is still concern about sustained supply of important program items such as vaccines, TB and anti-retroviral drugs, condoms, and other family planning commodities. Also, clarity is required about which level of government is responsible to fund the purchase of those inputs that have to be replaced periodically such as cold chain equipment, LLINs, etc.

52. The fourth challenge is reorganization of the MoH for its structures to be adjusted to fit its newly defined functions (Table 3). A long process brought the current set up. While this is a step in the right direction, it has to continue as it has an impact on the reforms progress and the wider engagement with development partners. It is critical for the MoH to focus on its policy and oversight role and effectively support counties. Its role has a direct impact on the financial and technical modalities the counties will adopt when implanting arrangements of key policies that support UHC, such as elimination of user fees, free maternity care and the recently launched HISP.

**Table 3: National and County Exclusive Functions according to Schedule IV of the Constitution**

| **Functions** as per Schedule 4 (Exclusive) | **National** | **County** |
|---|---|---|
| | 1. Health Policy<br>2. National referral health facilities<br>3. Capacity building and technical assistance to counties | 1. County health facilities and pharmacies;<br>2. Ambulance services;<br>3. Promotion of primary health care;<br>4. Licensing &control of undertakings that sell food to the public<br>5. Veterinary services (excluding regulation of the profession);<br>6. Cemeteries, funeral parlours and crematoria; and<br>7. Refuse removal, refuse dumps and solid waste disposal |

**Framework for support from the World Bank Group**

a) Strategic Shift in HNP engagement

The World Bank Group will focus on supporting the Government of Kenya to take on UHC to achieve the twin goals of elimination of extreme poverty and promoting shared prosperity. This means that by 2030 no one will be tipped into or kept in poverty due to expenditures on health, and the poorest 40% will have access to quality essential health services.

b) Guiding principles:

- Enhancing focus on service delivery with emphasis on quality of care and results;
- Promoting financial protection to the poor;
- Building sustainable institutions and effective and efficient management systems at all levels; Supporting partnerships – between different levels of governments, public and private sectors; and government and development partners; and
- Working collectively as one World Bank Group

c) Enhancing strategic policy dialogue

- Continue to provide technical support towards developing the UHC vision and strategy through active participation in relevant committees and technical working groups for health financing.

- Catalyze support from key partners committed to support the UHC agenda by identifying common areas of interest including possibility of jointly supported programs.
  - **Immediate (1-2 years):**
    a. Minimize the side effects to service delivery quality and quantity the abrupt devolution to county level has brought about.
    b. Facilitate Kenya internal and international experience sharing.
  - **Medium term (2-4 years):**
    a. Strengthen existing and, as necessary, build new sustainable financing institutions for facility and systems at county and national levels.
    b. Identify and test alternate options for improving delivery of services (Results Based Financing, Health Insurance Subsidies for the Poor, Vouchers, etc.,) and rigorously evaluate and document them.
  - **Longer term (5 years+):** Support Kenya to achieve UHC.

The World Bank Group strategic engagement for Kenya would include a combination of lending and learning activities.

**Lending:**

**Building country capacity for achieving UHC**

1. Implementing Kenyan context specific UHC reforms requires sufficient capacity, continuous dialogue and knowledge exchange to learn from other countries that have implemented UHC. Such experience sharing helps Kenya to avoid some of the mistakes made by other countries while Kenyan experiences help other countries keen to take make progress towards the UHC. Specifically the WBG can support Kenya through:

- Working closely with the MoH and county governments, identify their institutional, managerial, and human capacity gaps to develop and implement specific capacity building activities. The potential areas for such capacity building include leadership and management; organizational and human resource development in devolved health system; financial management and procurement; public private partnerships in service provision, planning, monitoring and evaluation of health service delivery.
- In collaboration with local training institutions, support flexible capacity building efforts especially targeting the marginalized counties (i.e., Arid and Semi-Arid Lands). This will include the option of scholarships for diploma level nurses and medical technician training to youth with required qualifications selected by county governments and other specific training needs identified through capacity needs assessments. When indicated and/or possible, preference will be given to learning modalities that do not disrupt significantly service delivery.
- Strengthen existing mechanisms for intergovernmental dialogue such as Intergovernmental Forum on Health and County Chief Executives of Health Forum by strengthening existing liaison mechanisms with the national government.
- In collaboration with the World Bank Institute, support knowledge exchange programmes on UHC reforms.

**Strengthening institutions**

1. Identifying specific areas of weakness in institutional arrangements, organizational practices and governance set-up of key institutions responsible for health care financing, quality of care and regulation.
2. Providing technical support to address identified areas of weakness collectively with other partners to support key institutions that are expected to play an important role in the transition to UHC. The main institutions would include the NHIF, Insurance Regulatory Authority (IRA) and Kenya Accreditation Service (KENAS).

**Supporting Health Financing Reforms for UHC**

1. The recently approved additional financing will support the phase I of two key health financing reforms. An impact evaluation undertaken by the World Bank will inform decisions on scaling-up these innovations. These two reforms include :

    a. The RBF design will be further improved based on the lessons learnt from the Samburu pilot and scaled up to 20 counties in arid and semi-arid parts of Kenya.
    b. The HISP will be piloted in all counties covering 500 households in each county. This will be complemented by targeted initiatives to provide similar subsidies for the vulnerable and marginalized populations

2. The follow-on operation planned in FY 2015 will support the next phase of reforms in Kenya to accelerate progress towards UHC and this will be informed by the findings of the Impact Evaluation. The World Bank Group will play catalytic role to convene all partners that are keen to support UHC.

**Learning:**

**Supporting evidence based policy making**

1. Support capacity building for the design and implementation of evidence based policies. This will be done through supporting the creation of an UHC unit in the MoH, supporting investments in capacity building for the unit and offering technical support when needed.
2. Strengthen partnerships with local training/research institutions (including universities and the Kenya Medial Training Colleges) to generate timely evidence to inform UHC policies and make midcourse corrections.
3. Prepare policy briefs and technical papers on various topics related to service delivery, health financing, governance and quality:
    - Strategic options for improving delivery of quality Primary Health Care Services
    - Networking to rationalize hospital services for improving access to effective referral care in Kenya based on analysis of distribution of hospitals (including number of beds, large equipment), relative need and utilization patterns
    - Qualitative research to identify the main causes of inefficiencies in health service delivery and inform the design of interventions to promote efficiency.
    - Document innovative options for increasing domestic financing for health based on internal experiences to provide policy options to the Ministry of Health and the National Treasury.

**Annex 1**

## Governments Functions as per the 2010 Constitution

The new Constitution has assigned, in Schedule IV, different tasks to the national and the county as exclusive functions.

**Table 4: Categories of functions and implications**

| Classification | Description | Implications |
|---|---|---|
| **Exclusive functions** | Exclusive to the a level of government (according to Schedule 4) | Should be transferred to the respective level |
| **Concurrent functions** | Functions assigned to both levels of Government through 'unbundling' | To be performed collaboratively by both Governments |
| **Residual functions** | Functions not assigned by the Constitution or national legislation to a county (CoK, art. 186 (3) | Assigned to the National level |

**Table 5: Exclusive Functions of National and County Departments of Health (CoK, Schedule 4)**

| Functions as per Schedule 4 (Exclusive) | National | County |
|---|---|---|
| | 4. Health Policy<br>5. National referral health facilities<br>6. Capacity building and technical assistance to counties | 8. County health facilities and pharmacies;<br>9. Ambulance services;<br>10. Promotion of primary health care;<br>11. Licensing &control of undertakings that sell food to the public<br>12. Veterinary services (excluding regulation of the profession);<br>13. Cemeteries, funeral parlours and crematoria; and<br>14. Refuse removal, refuse dumps and solid waste disposal |

**Exclusive Functions of State and County Departments of Health**

| National level | County level: County Health Services |
|---|---|
| Kenyatta National Hospital (KNH) | 0016 Provincial Health Services |
| Moi Teaching and Referral Hospital (MT&RH) | 0017 District Health Services |
| Kenya Medical Training College (KMTC) | 0005 Environmental Health Services |
| Kenya Medical Supplies Agency (KEMSA) | 0006 Communicable Disease Control |
| National Hospital Insurance Fund (NHIF) | 0008 Nutrition |
| National Quality Control Laboratory (NQCL) | 0009 Family Planning Maternal and Child Health |
| National Blood Transfusion Services | 0010 Health Education |
| Pharmacy and Poisons Board | 0015 Health Informative System |
| National Public Health Laboratory | 0018 Food Control Administrative Services |
| Government Chemist | 0022 Vector Borne Disease Control |
| Radiation Protection Board | 0023 Communicable Disease Control and Management |
| Kenya Medical Research Institute (KEMRI) | 0028 Provincial Administration and Planning |
| Mathari Mental Hospital | 0029 Rural Health Centres & Dispensaries |
| Spinal injury Hospital | 0030 Rural Health Training and Demonstration Centre |

**Table 7: Concurrent Functions of State and County Departments of Health**

| National and County Level | |
|---|---|
| **State Department of Health** | **County: County health services including** |
| Legislation | Legislation |
| Resource mobilization | Resource mobilization |
| Health financing (Policy & regulation) | Health financing (implementation) |
| Financial Management | Financial Management |
| Planning and budgeting | Planning and budgeting |
| Maintenance of health infrastructure, including medical equipment, devices and plant | Maintenance of health infrastructure, including medical equipment, devices and plant |
| Quarantine administration | Quarantine administration |
| Disaster preparedness and response | Disaster preparedness and response |
| Disease prevention & control (policy & coordination), including surveillance | Disease prevention & control, including surveillance |
| Emergencies/outbreaks | Emergencies/outbreaks |
| Partnerships, including Public and Private | Partnerships, including Public and Private |
| Intergovernmental relations | Intergovernmental relations |
| Procurement of health products and technologies | Procurement of health products and technologies |
| HRH management and development | HRH management and development |
| Monitoring and Evaluation | Monitoring and Evaluation |
| Health research (regulation and implementation) | Health research (implementation) |
| Health Information systems | Health information systems |
| Public relations | Public relations |

**Table 8: Residual functions of the State Department responsible for Health**

| National Level only |
|---|
| Regulation of Health Products & Technologies |
| Regulation, setting norms and standards |
| Regulation of Health Professionals & Services (Boards & Councils) |
| Port health services |
| International health relations and diplomacy |
| International Health Regulations (IHR) |
| Regulation of medical training (tertiary & middle level) |
| Food Safety Policy & Regulation |

**Annex 2**

**Improving Pharmaceutical Supply Chain – Kenyan experiences**

1. Timely availability of Essential Medicines and Medical Supplies (EMMS) is critical for delivering quality health services. Like most developing countries Kenya also has made efforts to ensure sustained supply chain of EMMS. Two major challenges faced in achieving this objective are unpredictable flow affecting timely procurement of EMMS by the Kenya Medical Supplies Agency (KEMSA) and high levels of wastage as well as surplus stocks at the facility level.

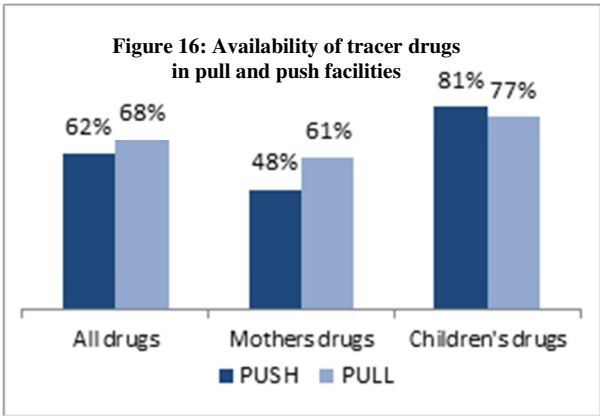
2. To reduce high levels (up to 20%) of wastages and ensure supplies responsive to local needs, Kenya piloted the pull system of supply in 2006. The pull system allows facilities to place orders based on their drawing rights while the wastage rates tend to be higher under the push system of supplying prepackaged kits. The Government of Kenya was finally able to scale-up the pull system to all primary healthcare facilities by February 2013. The MOH facilitated establishment of drawing rights for districts while districts in turn made drawing rights for individual facilities based on work load. This initiative was complemented by support from the World Bank and Danida to capitalize and reform the KEMSA. The technical assistance provided by the US Government also helped implementation of automated systems. The government of Kenya started to reimburse KEMSA upon submission of proof of delivery to health facilities every quarter which ensured replenishment of the capital and better procurement planning.

3. Simultaneously the government of Kenya reconstituted the KEMSA Board which hired competent staff through open market recruitment. KEMSA also strategically outsourced warehousing and transport while instituting proper tracking systems and introduced barcoding of all its supplies. Each batch of EMMS procured by KEMSA is subjected to quality testing by a WHO pre-qualified laboratory before releasing it into the supply chain. This enabled KEMSA to effectively respond to the changing paradigm and improve its efficiency and transparency. A comparison of KEMSA procurement prices undertaken by the MOH in 2011 has shown that at the aggregate level KEMSA was able to procure at 74% of the median international reference price.

4. A case study undertaken by the Bank assessed the effect of KEMSA reforms in improving the provision of EMMS to poorer locations. This was done by regressing KEMSA supplies with district level poverty data. The study showed that per capita value of supplies made by KEMSA were marginally higher in districts with highest proportion of the poor (75%) compared to districts where about a quarter of the population was living below poverty line (K.Sh99 vs. K.Sh86). The study also showed that it costs KEMSA more to ship supplies to poorer districts compared to better-off districts, probably due to longer distances from Nairobi, and dispersed location of facilities in such districts.

5. The public expenditure tracking survey 2013 has shown marginal improvements in availability of essential medicines with much enhanced availability of commodities for maternal health.

**Figure 16: Availability of tracer drugs in pull and push facilities**




6. The devolution resulted in a major change in the existing arrangements to procure and distribute EMMS. The resources for supplying EMMS are now devolved to counties which are at their liberty to procure EMMS. Due to political compulsions, the Kenyan devolution process was accelerated which resulted in disruption of supply chain. The MOH has made transition arrangements by allowing KEMSA to release supplies for first two quarters of FY 2013-14. Meanwhile KEMSA and another important agency undertaking pooled procurement for faith based organizations the Mission for Essential Medicines and

Supplies (MEDS) both reached out to counties. As it stands, KEMSA has entered in to memoranda of understanding with all 47 counties and during the third quarter of FY 2013-14 forty four counties have placed orders. There are however concerns that there could be an overall reduction in volume of ordering by counties as they have to purchase these commodities out of their unconditional grants and therefore have to compete with other country priority purchases. There is therefore a significant risk that hospitals would be favored at the expenses of lower level facilities thereby forcing them to reintroduce some form of cost sharing for guaranteeing their own functionality.. A quick comparison of supplies made by KEMSA in the third quarter in the past three years, when the funding was still centralized, shows that generally orders made by counties in the 3rd quarter of FY 2013-14 was higher compared to corresponding period of previous two years. Further, the share of orders placed for rural health facilities (RHF) was higher than that of the hospitals. A more detailed analysis presented in Figure 18 showed that 27 out of the 44 counties, ordered 50% or more of supplies made to Rural Health Facilities (dispensaries and health centers). While this is a positive trend, more careful security is required by the MOH to carefully track these trends and also compliance with essential drug list. Counties need to focus on improving quantification, timely ordering, proper storage and rational use which makes it win -win for all.

**Figure 17: Value of EMMS supplies made by KEMSA during the 3rd quarter of FY 2010-11, 2011-12 and 2012-13 by type of facility**

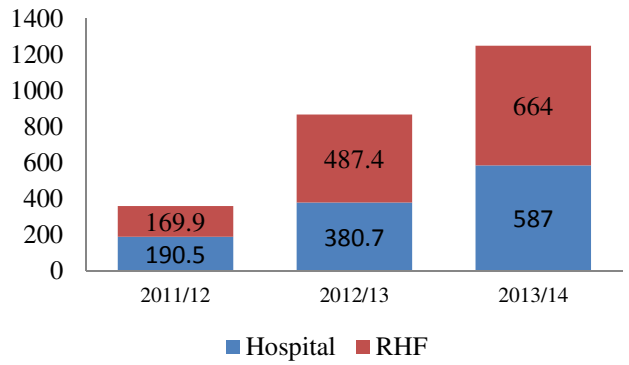
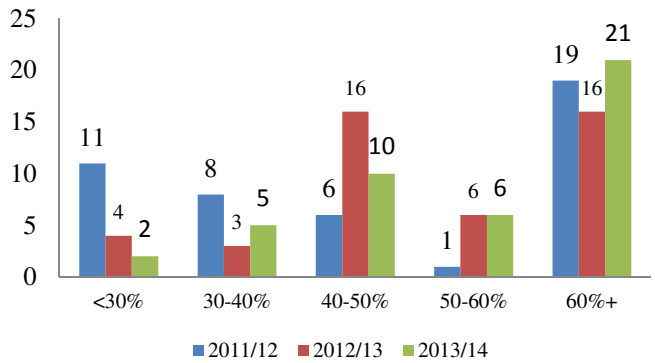



**Figure 18: Distribution of Counties by share of expenditure on EMMS allocated to Rurual Health Facilities in Q3 of 2011/12, 2012/13 and 2013/14**



## Annex 3

| Table 1. KENYA Population projections (World Bank) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Projection (000s) | | | | | | | | |
| AGE GROUP | 2010 | 2015 | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| | | | | | | | | | |
| TOTAL M+F | 40,513 | 46,313 | 52,527 | 58,999 | 65,840 | 73,126 | 80,798 | 88,682 | 96,600 |
| MALES | | | | | | | | | |
| 0-4 | 3,358 | 3,749 | 4,013 | 4,205 | 4,465 | 4,777 | 5,074 | 5,298 | 5,460 |
| 5-9 | 2,873 | 3,249 | 3,643 | 3,913 | 4,114 | 4,383 | 4,704 | 5,008 | 5,240 |
| 10-14 | 2,422 | 2,829 | 3,206 | 3,602 | 3,875 | 4,079 | 4,351 | 4,673 | 4,980 |
| 15-19 | 2,164 | 2,384 | 2,790 | 3,168 | 3,564 | 3,838 | 4,044 | 4,317 | 4,640 |
| 20-24 | 2,070 | 2,122 | 2,340 | 2,743 | 3,119 | 3,514 | 3,789 | 3,997 | 4,270 |
| 25-29 | 1,782 | 2,018 | 2,072 | 2,287 | 2,684 | 3,058 | 3,451 | 3,726 | 3,935 |
| 30-34 | 1,425 | 1,724 | 1,958 | 2,013 | 2,225 | 2,615 | 2,984 | 3,374 | 3,649 |
| 35-39 | 1,081 | 1,364 | 1,659 | 1,890 | 1,945 | 2,152 | 2,533 | 2,897 | 3,282 |
| 40-44 | 793 | 1,022 | 1,299 | 1,587 | 1,813 | 1,868 | 2,070 | 2,442 | 2,799 |
| 45-49 | 608 | 742 | 963 | 1,232 | 1,511 | 1,730 | 1,786 | 1,982 | 2,344 |
| 50-54 | 487 | 564 | 691 | 904 | 1,162 | 1,431 | 1,642 | 1,698 | 1,888 |
| 55-59 | 394 | 448 | 520 | 640 | 841 | 1,088 | 1,344 | 1,545 | 1,601 |
| 60-64 | 285 | 356 | 405 | 471 | 583 | 771 | 1,001 | 1,241 | 1,431 |
| 65-69 | 186 | 248 | 310 | 353 | 413 | 514 | 684 | 892 | 1,111 |
| 70-74 | 141 | 150 | 201 | 252 | 289 | 340 | 427 | 572 | 751 |
| 75+ | 165 | 178 | 192 | 237 | 298 | 358 | 430 | 535 | 703 |
| TOTAL | 20,234 | 23,148 | 26,263 | 29,496 | 32,900 | 36,516 | 40,313 | 44,198 | 48,085 |
| FEMALES | | | | | | | | | |
| 0-4 | 3,306 | 3,695 | 3,956 | 4,145 | 4,400 | 4,704 | 4,991 | 5,206 | 5,356 |
| 5-9 | 2,842 | 3,216 | 3,611 | 3,881 | 4,080 | 4,344 | 4,655 | 4,948 | 5,166 |
| 10-14 | 2,400 | 2,805 | 3,182 | 3,580 | 3,853 | 4,056 | 4,323 | 4,635 | 4,929 |
| 15-19 | 2,150 | 2,369 | 2,774 | 3,153 | 3,553 | 3,828 | 4,033 | 4,301 | 4,615 |
| 20-24 | 2,067 | 2,115 | 2,334 | 2,738 | 3,117 | 3,517 | 3,795 | 4,001 | 4,270 |
| 25-29 | 1,781 | 2,017 | 2,070 | 2,288 | 2,688 | 3,066 | 3,466 | 3,744 | 3,951 |
| 30-34 | 1,398 | 1,717 | 1,954 | 2,012 | 2,229 | 2,625 | 2,999 | 3,396 | 3,674 |
| 35-39 | 1,013 | 1,328 | 1,645 | 1,883 | 1,946 | 2,162 | 2,550 | 2,920 | 3,312 |
| 40-44 | 761 | 949 | 1,258 | 1,572 | 1,811 | 1,878 | 2,091 | 2,472 | 2,836 |
| 45-49 | 639 | 711 | 892 | 1,195 | 1,504 | 1,742 | 1,813 | 2,022 | 2,395 |
| 50-54 | 552 | 600 | 666 | 842 | 1,137 | 1,441 | 1,675 | 1,748 | 1,954 |
| 55-59 | 459 | 520 | 563 | 625 | 795 | 1,081 | 1,376 | 1,606 | 1,681 |
| 60-64 | 329 | 426 | 482 | 521 | 581 | 743 | 1,016 | 1,301 | 1,524 |
| 65-69 | 214 | 295 | 383 | 433 | 470 | 526 | 677 | 934 | 1,202 |
| 70-74 | 166 | 179 | 248 | 324 | 368 | 402 | 453 | 589 | 820 |
| 75+ | 202 | 224 | 247 | 313 | 407 | 494 | 571 | 661 | 830 |
| TOTAL | 20,279 | 23,165 | 26,265 | 29,504 | 32,940 | 36,609 | 40,485 | 44,484 | 48,515 |
| Dependency ratio (%) | 82.2 | 81.6 | 79.1 | 74.7 | 69.7 | 65.6 | 63.4 | 62.0 | 60.9 |

| Table 2. Projections for Key Fertility Indicators (World Bank) | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Indicator** | **2010-15** | **2015-20** | **2020-25** | **2025-30** | **2030-35** | **2035-40** | **2040-45** |
| Birth rate (per 1,000 people) | 36.9 | 34.5 | 31.8 | 30.0 | 28.6 | 27.3 | 25.7 |
| Death rate (per 1,000 people) | 10.0 | 9.1 | 8.4 | 7.9 | 7.5 | 7.2 | 7.0 |
| Rate of natural increase (per 100 people) | 2.7 | 2.5 | 2.3 | 2.2 | 2.1 | 2.0 | 1.9 |
| Net migration rate (per 1,000 people) | -0.2 | -0.2 | -0.2 | -0.2 | -0.1 | -0.1 | -0.1 |
| | | | | | | | |
| Population growth rate (average annual %) | 2.7 | 2.5 | 2.3 | 2.2 | 2.1 | 2.0 | 1.9 |
| Total fertility rate (births per woman) | 4.6 | 4.3 | 4.0 | 3.7 | 3.5 | 3.2 | 3.1 |
| Net reproduction rate (female births per woman) | 1.9 | 1.8 | 1.7 | 1.6 | 1.6 | 1.5 | 1.4 |
| Life expectancy at birth (years) | 57.9 | 59.6 | 61.2 | 62.8 | 64.4 | 65.7 | 66.9 |
| Life expectancy at age 15 (years) | 50.1 | 51.0 | 52.0 | 53.0 | 53.9 | 54.7 | 55.5 |
| Infant mortality rate (per 1,000 live births) | 58.1 | 52.9 | 48.5 | 43.9 | 39.3 | 35.2 | 31.8 |
| Under-5 mortality rate (per 1,000) | 89.0 | 79.3 | 71.4 | 63.5 | 55.5 | 48.5 | 42.8 |