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THE UNITED REPUBLIC OF TANZANIA

PROGRAM FOR RESULTS
STRENGTHENING PRIMARY HEALTH CARE FOR RESULTS

TECHNICAL ASSESSMENT

Prepared by the World Bank

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Technical Assessment

A.   Strategic relevance and technical soundness of the proposed Program

A.1   Strategic relevance

1.   Over the last 10 years, in Tanzania, progress has been made in reducing death rates in younger age groups and improving coverage of selected high impact interventions. Especially, Tanzania has made significant strides in improving immunization coverage and surpassing the Millennium Development Goals for reducing child mortality. Between 1999 and 2010, infant mortality fell from 99 per 1,000 live births to 51 per 1,000 live births respectively, while under-5 mortality declined from 147 to 81 per 1,000 live births (Tanzania Demographic Health Survey (TDHS), 2010). A 2008 Lancet article on child survival gains in Tanzania[1] attributed a large proportion of these improvements to investments in health systems and scaling up specific interventions through a decentralized approach. These include an increased proportion of children under five years of age sleeping under bed nets (from 36.3 percent in 2007/8 to 72.6 percent in 2009/10), increased vaccination coverage, vitamin A supplementation, and improved functioning of Integrated Management of Childhood Illness (IMCI) at the facility and community levels.

2.   However, the progress in reduction of maternal mortality and neonatal mortality has been slow. Maternal mortality ratio remains high at 423 deaths per 100,000 live births in 2012 (Census 2012) against a backdrop of low facility deliveries and family planning coverage while neonatal mortality rates are 26 per 1,000 live births (TDHS, 2010). There is also a persistent high level of stunting (42 percent among children under five years of age), affecting over 3 million children. Overall, communicable, maternal, neonatal, and nutritional causes remain the major burden of mortality and illness for the population (Table 1).

Table 1: Top causes of life years lost (YLLs) in Tanzania

Rank and disorder 2010	# YLLS in thousand dollars (% of total)
1. HIV/AIDS	4,503 (20.6%)
2. Malaria	3,068 (13.9%)
3. Lower respiratory infections	2,000 (9.2%)
4. Diarrheal diseases	930 (4.3%)
5. Neonatal encephalopathy	851 (3.9%)
6. Preterm birth complications	812 (3.7%)
7. Protein-energy malnutrition	676 (3.1%)
8. Neonatal sepsis	636 (2.9%)
9. Syphilis	615 (2.8%)
10. Road injury	512 (2.3%)
11. Tuberculosis	501 (2.3%)
12. Maternal disorders	491 (2.3%)

Source: Institute for Health Metrics and Evaluation 2013.

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[1] Masanja, H., et al, *Child survival gains in Tanzania: analysis of data from demographic and health surveys*, The Lancet, 2008; 371: 1276–83.

3.   Without effectively improving health of the nation, Tanzania will not be able to materialize the aspirations of Tanzanian Development Vision 2025 and reduce health-related economic costs. Currently, US$431 million is being spent on treatment every year; and an estimated GDP loss of US$272.6 million occurs annually due to the common diseases affecting the working population alone. Such numbers are expected to rise.

4.   In this context, there is a consensus that health is important to economic development and poverty reduction in Tanzania. It has been identified as a priority in (i) the Government's Tanzania Development Vision 2025 (launched in 1999), (ii) the National Strategy for Growth and Poverty Reduction 2010-2015 (MKUKUTA II); and (iii) the World Bank's Country Assistance Strategy 2012-2015.

Table 2: Tanzania's health outcomes and health expenditures

	Tanzania[1]		Sub-Saharan Africa[2]
Outcome Indicators	**2005**	**2010**	**2013**
Under 5 mortality rate per 1,000 live births	112	45[3]	92.4
Infant mortality rate per 1,000 live births	68	51	61
Maternal mortality ratio per 100,000 live births	578	432[3]	510
Total Fertility Rate (Children per Woman)	5.7	5.2[3]	5.1
Stunting (Height for Age <-2SD, %)	38	42	37
Underweight (Weight for Age <-2SD, %)	22	16	21
Wasting (Weight for Height <-2SD, %)	3	5	9
Service Coverage Indicators			
Skilled birth attendance (% of pregnant women)	47	51	50
Contraceptive prevalence rate (% of women ages 15-49 years)	20	27	24
Full immunization coverage (% of children aged 12-23 months)	71	75	
Children who slept under an ITN last night (% of under-5 children)	16	64	35.2
Women who slept under an ITN last night (% of pregnant women)	16	57	
Health Financing Indicators[3,4]			
Total expenditure on health per capita	11.9	41.3	96.2
Total public expenditure on health per capita	5.9	16.3	
Share of health in the government budget	10.3	8.7	

[1]Data of MMR, TFR, nutritional and service coverage indicators are for years 2005 and 2010 ;
[2]Nutrition indicators are for Sub-Saharan African developing countries' average only, while others are for the whole regional average;
[3] 2012 Census data
[4]All health financing indicators listed under "2010" indicate latest year data;
[5]All per capita expenditure data are in the unit of current US$ (i.e. at exchange rate rather than purchasing power parity).
Source: DHS, Census 2012, World Development Indicators and WHO data.

A.2 Technical soundness

The Program's focus on quality of PHC in general and RMNCH in particular is appropriate

5.   A large share of health challenges in Tanzania, including RMNCH, can be effectively prevented and managed at the PHC level, using a well-known package of evidence-based cost-effective interventions.[2] In Tanzania, access to a health care has sharply improved in recent year with more people being within 2 hours of a health facility. Moreover, 3 out of 4 (74.9 percent) facilities offer services for women to give birth which is a critical need in a high fertility environment.

6.   However, the challenge is the quality of PHC in general and RMNCH in particular. For example, the quality of basic and comprehensive obstetric care is low. A mere 7.5 percent of PHC facilities can be deemed compliant with BEmOC requirements. Only a dismal 2.6 percent of dispensaries offer the full BEmOC package. This proportion increases only to 18 percent for health centers and a paltry 44 percent for first level hospitals (Service Delivery Indicators, 2014). As the result, the RMNCH continuum is weak in Tanzania. More than half of health workers are either absent or late during work hours. According to SDI (2014), although on average 14.3 percent of health providers in surveyed facilities were absent from the facility, absence was more prevalent in Dar es Salaam where 1 out of 5 (20.7 percent) were in fact found in the facility. Moreover, doctors especially those in urban areas are the most likely to be absent and their absence is more likely to not have been approved. There is limited adherence to good clinical practices. A review of clinicians' ability to manage maternal and neonatal complications under the SDI 2014 showed that providers surveyed adhered to only 30.4 percent of the clinical guidelines for managing maternal and newborn complications. There was no significant difference between the performance of public and private (for- and not-for-profit) providers. Doctors are again more likely to adhere more closely although they would follow only about 35.7 percent of guidelines. Further, essential drugs are frequently out of stock, and facilities are in poor conditions.

7.   Poor quality of PHC results in low utilization despite relatively good access. For instance, studies show that community perceptions of the quality of the local health system influence women's decisions to deliver in a clinic. Improving quality of PHC services and communicating this to communities therefore will assist efforts to increase facility delivery in Tanzania.[3]

Key bottlenecks to quality of PHC and RMNCH have been clearly identified under the Program

8.   Under the overall BRN initiative by the Office of the President, the BRN in Health was developed through an intensive six-week "Health Lab" process (22 Sep – 31 Oct 2014). It involved 138 representatives from 65 agencies representing key stakeholders in the sector (including academia, government officials, development partners, CSOs, private sector representatives and

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[2] The World Health Report 2008 *Primary Health Care: Now More Than Ever*, World Health Organization
[3] Kruk ME, Rockers PC, Mbaruku G, Paczkowski MM, and Galea S. *Community and health system factors associated with facility delivery in rural Tanzania: a multilevel analysis*. Health Policy. 2010 Oct;97(2-3):209-16.

others). A total of 32,000 man hours was devoted to the development of BRN. The BRN process identified the following bottlenecks to quality of PHC in Tanzania on the supply side.

9.   First, human resource for health (HRH) is a major constraint to PHC service delivery. Nation-wide, there are 554 dispensaries without skilled health workers; of which 135 (25%) are in the 9 regions with critical HRH shortage (HMIS 2014). Instead, they are staffed by medical attendants who are not qualified to manage patients by themselves. The national average ratio of clinicians and nurses per 10,000 population is low at 7.74 (compared to 22.8 as per WHO recommendations). HRH is unevenly distributed across regions, districts and health facilities: 74% of doctors are found in urban settings, resulting in a doctor to population ratio 17 times higher in urban than rural areas. Kilimanjaro, Dar es Salaam and Mwanza have 75% of all skilled HRH (HRH Profile 2014). The current HRH planning process relies on LGAs to identify their HRH needs and then submit them to POPSM for approval. The process often does not take into account the existing distribution of skilled HRH workforce in the country.

10.   Second, decentralization in the health sector has not fully materialized, hindering the operations of facilities. Health facilities have limited financial autonomy to utilize their own funds. Most PHC facilities do not even have a bank account. Funding for PHC is channeled to LGAs which unfortunately represent a major bottleneck preventing resources to reach lower levels. Without adequate resources, PHC facilities at the frontline do not have the basic inputs to ensure structural quality of care.

11.   Third, there is a poor accountability for results at all levels, including between (i) central government and Local Government Authorities (LGA), (ii) LGA and facilities and (iii) facilities and communities. More than half of health workers are either absent or late during work hours. There is no systematic effort to monitor quality of care, provide accreditation or conduct continuous quality improvement in PHC.

12.   Fourth, poor supply chain management leads to frequent stock-outs of essential drugs and medical supplies in PHC facilities. Less than 50% of health facilities have updated stock cards. The working capital of the Medial Store Department (MSD) has been depleted due to the growth of debt. MSD's capacity to deliver medicines is limited to around 65% of health facilities. The remaining 35% needs to be provided by the private sector.

13.   Fifth, the RMNCH continuum is weak. While there are various Development Partners funding CHW interventions in various parts of the country, CHWs have not been formalized as part of the existing health care structure.   Outreach services have not been fully established to enable women and their families to receive selected RMNCH services in their communities. Average readiness score for EmONC was found to be 53% for facilities (SARA 2012). Blood Transfusion Services are located at zonal centres, far away from health facilities that conduct CEmONC services, and thus access to blood is a concern.

The Program design has clear causal links between the challenges, interventions and expected results

14.   On the basis of the identified challenges, under BRN in Health, the country has developed interventions which correspond to each bottleneck under Program. Table 1 represents a summary

of key BRN interventions for each bottleneck and the results. Figure 1 explains the conceptual framework of BRN in Health.   RBF is seen as an activity within the BRN work stream "Performance Management" to help incentivize facilities to improve.

Program interventions are technically sound

15.   The BRN in Health supports evidence-based, cost-effective interventions. Accreditation has been shown to improve quality of care in both OECD and LMIC countries (although the number of evaluations for LMIC is fewer). The same applies to quality improvement plans for health facilities. Fiscal decentralization contributes to provider managerial autonomy, which in turns facilitates service delivery. Social accountability is universally accepted as a mechanism to hold providers accountable for results as per the WDR 2004 conceptual framework.   HRH represents a critical input for quality of care and, in fact, a dimension of structural quality. For maternal and neonatal care, access to quality BEmONC and CEmONC are essential.

Table 3: Summary of key BRN interventions corresponding to each PHC bottleneck

| Human Resources for Health	Performance Management for Facilities
Prioritize allocation of employment permits to regions with critical shortage of skilled HRH — 100% of the 9 Critical Regions to reach the National Average for Density of Clinicians and Nurses per 10,000 population. Provide skilled HRH through PPP/Private sector engagement — 50% reduction in the number of Dispensaries without Skilled HRH. Redistribution of health care workers within the regions — 16 Regions to implement HRH redistribution between their own districts & attain 100% reduction in no. facilities without Skilled HRH. Optimising the pool of new recruits: ✓ Reinforce bonding policy ✓ Introduce Compulsory attachments for Clinicians and Nurses — 70% of government sponsored students will be bonded to serve at public facilities. 6 compulsory attachment status for 6 cadres confirmed & 100% students undergoing compulsory services	Assess, rate and develop specific facility improvement plans for 1- and 2-Star primary level health facilities — 80% of health facilities at identified regions are elevated to level 3 & above by 2017/18. Implement fiscal decentralization by devolution from council level to health facility level — 80% of health facilities achieve financial autonomy by June 2017. Increase social accountability at the facility and community level to address local health priorities/concerns — 80% of LGAs have functioning social accountability mechanisms by June 2017. Introduce the use of performance targets and contracts at the primary facilities to address and enforce staff accountability in delivery of quality health services — 80% of health facilities have attained 75% customer satisfaction and above by June 2018
Health Commodities	**RMNCH Continuum**
Governance: Improving governance, accountability, and sense of ownership of Health Commodities supply chain to eliminate frequent occurrence of stock-out — 100% Health Facilities audited and supervised by CHMT, 0% proportion of facilities found with commodities pilferages. Finance & Business Model: Strengthen management of MSD working capital for sustainable availability of medicines and medical supplies — Establish baseline for current ratio, acid test ratio & % Margin recovery. Procurement & Distribution: To complement MSD in the procurement & distribution of medicines by engaging private sector — 15 number of call off orders to prime vendors & 15 signed contracts by 2015, 90% of medicines supplied against call off orders by 2015. Inventory Management: Scale up 5S-KAIZEN-Total quality Management(TQM) initiatives from district level to lower health facilities level — 85% of dispensaries and health centres adhering to good storage standards, 80% of lower level health facilities submitting accurate consumption reports to MSD. ICT: Introduce use of SMS to report on stock outs and quality of health services by service users and civil society — 50% of stock-out complaints solved by 2015/16, 100% of stock-out complaints solved by 2016/17	Expanding CEmONC services at strategically selected health centers and hospitals to serve as satellite sites — Reduction of maternal mortality ratio from 453 to 291 (per 100,000 live births) and neonatal mortality rate from 20 to 10 (per 1000 live births), by 2017/2018. Strategically selected dispensaries and health centers to provide full fledge BEmONC (7 signal functions). — 100% quality (measured be agreed Standards Base Management Tool) of services in facilities selected for provision of a continuum of care package which includes FP, ANC, BEmONC, PNC. Mobilise Community Health workers to improve RMNCH services — Utilize community based initiatives to improve RMNCH awareness to 100% and uptake by 50% at community level by 2017/18. Regional Satellite Blood bank facilities supporting CEmONC — Establish centres and mobilize blood donors and distribute safe blood to those in need especially pregnant women and new-born as close as to where they receive CEmONC services by 100%. Enhanced awareness and outreach through mHealth (SMS) and Maternal CHW App through PPP — Increase childbirth by skilled birth attendant to 80%

Source: BRN in Health, PDB 2015

Figure 1: Conceptual framework of BRN
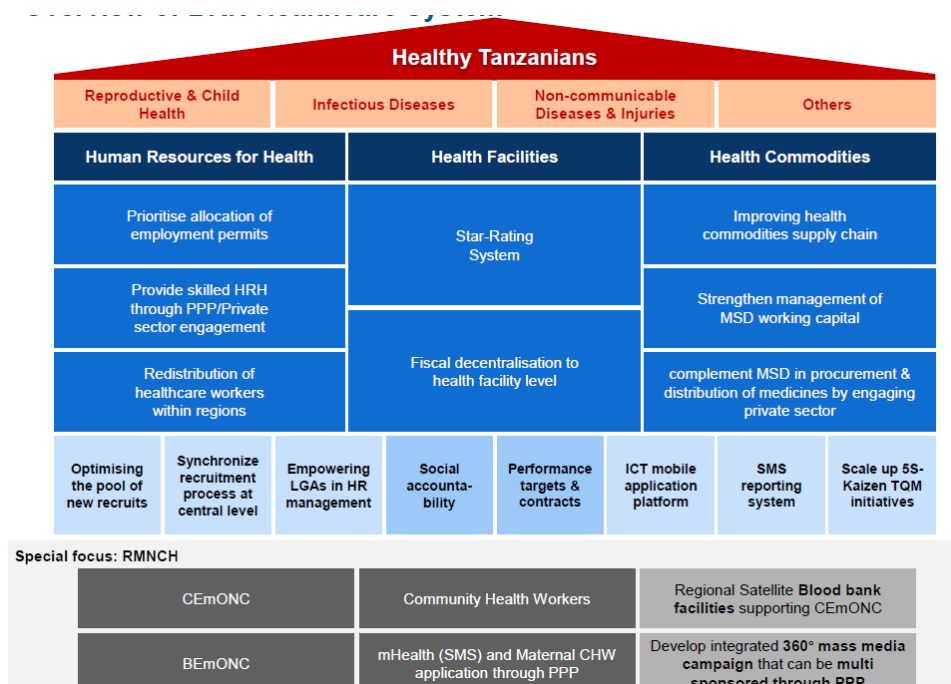
Source: BRN in Health, PDB 2015

16.   Given the nutrition challenges, the Program incorporates nutrition specific and sensitive interventions in the health sector to address under-nutrition including stunting.[4] High impact nutrition specific interventions in the Program include (i) growth monitoring/promotion among children under-five, (ii) vitamin A supplementation for children between 6 and 59 months (to support growth and help combat infections among children), (iii) iron and folic acid (IFA) supplementation for pregnant women (to reduce the risk of low birth weight, maternal anemia and iron deficiency); (iv) home visit to provide nutrition/health education by Community Health Workers (CHW) during the first 1,000 days of life (from pregnancy to two years of age). Appropriate incentives are built into the Program at the CHW, facilities, LGA and national levels to stimulate performances related to such indicators.

17.   The government of the Republic of Tanzania is intending to take urgent measures[5] to improve the Civil Registration and Vital Statistics (CRVS) system. The 2012 census revealed that birth registration coverage in Tanzania is at 15% (among the lowest in Africa and in the world) and a similar situation exists for death registration, while cause-of-death documentation[6] is far from satisfactory. As a first step, a comprehensive assessment[7] of the CRVS was undertaken to

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[4] Nutrition is a multi-sectoral issue. While the health sector certainly has a role, interventions by many other sectors is required, including education, social protection, agriculture, water and sanitation, etc.

[5] In line with the framework of the Commission for Information and Accountability of Women's and Children's Health (COIA) and the ministerial declaration of the second conference of African Ministers Responsible for Civil Registration

[6] Although this was not assessed by the census

[7] A draft document is to be released soon

identify underlying bottlenecks. A strategic plan[8] has also been drafted by Registration Insolvency and Trusteeship Agency (RITA) – the agency responsible for CRVS- and the National Bureau for Statistics (NBS) with involvement of MOHSW and PMO-RALG and other relevant stakeholders. The strategy intends to mainstream CRVS in Tanzania with a specific focus on the role of the health sector given its close connection with birth and deaths. UNICEF has already been supporting a pilot with registration at health facility level and is planning to scale this up to 10 new regions (with 2 regions added per year). The Canadian Department of Foreign Affairs Trade and Development (DFATD) is currently the main donor providing assistance to improving CRVS in Tanzania through supporting a variety of agencies such as the NBS[9] and RITA[10] as well as through WHO[11] to support the development and implementation of the abovementioned CRVS assessment and strategy.

18.   There is an emerging global body of evidence on the effectiveness of facility-level performance based incentive schemes such as the RBF in improving coverage and quantity of health services. The RBF also benefits from a wealth of practical RBF experiences generated by other projects supported by HRITF in many Sub Saharan African countries. The list of payment indicators in the RBF scheme balances pay-for-quantity vs. pay-for-quality to incentivize the delivery of a set of cost-effective interventions with inputs supported by BRN in Health.

19.   Under the Program, the RBF activity will include incentives for Community Health Workers (CHWs) and Traditional Birth Attendants (TBAs) to escort pregnant women to deliver in the health facility as well as to report any non-institutional maternal and perinatal death within 24 hours to the facility. In line with the upcoming national CRVS strategy, health facilities will register any births and deaths (including cause of deaths) as part of the RBF program, in line with the upcoming national CRVS strategy. Performance indicators for health facilities will be developed to incentivized CRVS-related activities at the facility level.

20.   In summary, from the technical point of view, the proposed Program has many of the critical building blocks required for delivering results. These include:

- Strong political commitment (including the Office of the President) to PHC and RMNCH;
- The focus on the key challenges faced by PHC in Tanzania;
- The incorporation of BRN in Health in HSSP IV and inclusion of RBF as a provider payment mechanism in the draft health care financing strategy;
- Technical soundness and alignment with international evidence and best practices; and,
- Clearly defined interventions, which are supported by relevant country and international experiences.

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[8] Not yet publicly shared

[9] Direct support to NBS see: http://www.acdi-cida.gc.ca/CIDAWEB/cpo.nsf/vLUWebProjEn/EAE2AAC1CA21D0958525771100372058?OpenDocument and through John Hopkins University - capacity building of the National Bureau of Statistics and MoHSW, see: http://www.acdi-cida.gc.ca/CIDAWEB/cpo.nsf/vLUWebProjEn/31233EB567EAC1C585257BAE00359A76?OpenDocument

[10] Through UNICEF supporting RITA for the implementation of the Birth Registrations Strategy

[11] WHO – two regional grants to support CRVS Country Assessment and Strategy see: http://www.acdi-cida.gc.ca/CIDAWEB/cpo.nsf/vLUWebProjEn/F9B386E2EC337E2285257CE100380967?OpenDocument and see: http://www.acdi-cida.gc.ca/CIDAWEB/cpo.nsf/vLUWebProjEn/CA0101FA9A04446A85257CE100384693?OpenDocument

B.   Expenditure framework

21.   In Tanzania, at the national level, documents such as the Tanzania Development Vision (TDV) 2025, MKUKUTA II, FYDPI and currently the BRN initiative outline key policy priorities and targets. At a sectoral level, Health Sector Strategic Plan IV, as well as National Key Results Areas (NKRAs) of the BRN present policy priority objectives and targets to be achieved over a certain period of time. Aligning financial resources through the budgets and actual spending with the policy priorities at all levels is among the critical inputs for effective implementation and achievement of intended results.

22.   Tanzania has a well-established structure of planning and budgeting, both at the central and decentralized levels. In addition, there is an annual Public Expenditure Review (PER) process that helps fiscal policy formulation and management. Under the PER process, a Rapid Budget Analysis (RBA) is conducted each year to assess the consistency of the approved budget and actual public expenditures and the government policy priority objectives. As such, a comprehensive review of the expenditure framework of the Government's program on primary health care can be derived from the budget analysis of the BRN in Health, National Health Accounts (NHA) for several years, annual PERs conducted by the MOHSW, RBA for 2014/15 and 2013/14 and Reports of the CAG for the sector.

23.   The medium term financial prospects of Tanzania appear to be sound with stable GDP growth. The Tanzanian economy is projected to achieve a rate of growth of approximately 7 percent in the medium term. The main drivers of growth construction, communication and transport sectors are accompanied by an increase in public investment, including through the implementation of the BRN initiative. Domestic demand for communications, financial services, retail trade and construction is expected to remain sustained through technological changes and the rapid urbanization process. The rate of inflation is expected to remain steady at approximately 5 percent. The estimated fiscal deficit for 2014/15 is 3.7 percent with this figure declining to approximately 3 percent in future years. At these levels, the value of public debt will stabilize at the equivalent of 31 percent of GDP.

24.   The share of 2014/15 budget allocated to priority sectors defined by MUKUTA II (which includes health) is around two-third of public resources, which is about five percent lower than in 2013/14. This decline is principally explained by the increase in the debt-service payment, which is anticipated to absorb close to 10 percent of total expenditures. The resulting limited fiscal space, due to the rapid growth in the level of public debt in recent years, constraints the Government's commitment to finance fully the programs identified BRN initiative.

25. Health is a priority sector under the Big Results for Now (BRN) program starting 2015/16. However recognizing the constraints in fully financing the BRN initiatives in 2014/15, the BRN in Health preparation process focused largely on reducing inefficiencies and wastage in the sector than raising additional resources. As such, additional resources identified for BRN in Health over the 3 year period was US$100 million, significantly lower than that planned in other BRN areas.
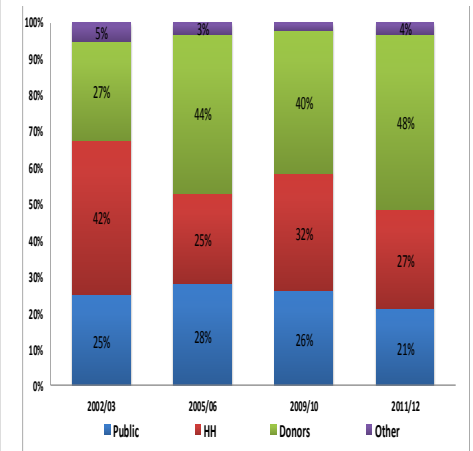
26. Overall, Tanzania spends a significant share of GDP on health (7 percent). However, 48 percent of health spending is from external financing (70 percent of which is off-budget) while household out of pocket spending is 27 percent and declining. Public sector share of total health spending is low at about 21 percent while share of other private spending (private firms) is marginal at 4 percent.

Figure 2: Total Health Expenditure by Financing Source, 2002/03 - 2011/12

27. The share of health in the budget has been declining over the years and fell to 8.1 percent in 2014/15, down from 9.3 percent in 2013/14, despite increased local funding into the health sector. The per capita health budget in 2014/15 is around Tsh. 31,132, which is equivalent to a 14 percent decline in real terms compared to 2013/14, and only one-third of the target recommended by the WHO (US$ 54 per capita or TSh 91,800). A reversal in this trend is expected in the near future with local contribution to the sector continuing to increase and inclusion of Health in the Big Results Now (BRN) initiative. Through the support for the BRN initiative, the government is committed to increasing resources for primary health care. The government is also aiming to allocate about 80 percent of the resources under the BRN in Health initiative through PMORALG to LGAs.

28. While public spending in health appears to be allocated efficiently along broad categories, there is still room for improvements in efficiency and reduced wastage. According to the 2011/12 NHA figures (Figure 3), hospitals receive about 29 percent of health funding, primary health care about 28 percent, preventive health about 17 percent while 13 percent is spent on administration.

Figure 3: Total Health Spending byProvider, 2002/03 – 2011/12

29. Resource flows for PHC is however fragmented through various MDAs, and LGAs are still fairly dependent on the central level for key inputs. In Tanzania, there are three budget line items: Personnel Emoluments (PE), Other Charges (OC) and Development. All non-salary recurrent spending is within the OC. Fund flows to LGAs from domestic resources are transferred directly from MOFEA as (i) PE block grants and (ii) recurrent health block grants (LGA

level OC). The rest are controlled by the central pool and includes: (i) part of OC allocations through external financing via MOHSW sent 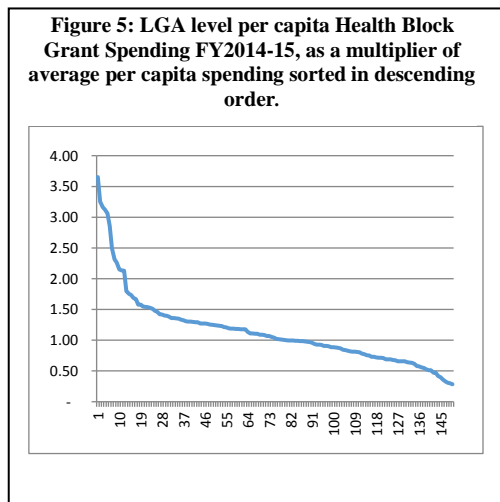to LGAs (HBF) and (ii) medicines allocations which are transferred as goods instead of cash from MSD to LGAs. LGAs are therefore very reliant on the central level for key inputs that affect primary care service delivery. LGAs also receive own-sources revenues through user fees and other contributions such as CHF but given low enrollment in CHF program and high level of exemptions, these are a small share.

30. While increasingly over time, more and more resources are being allocated to LGAs for primary care provision, there is limited flexibility at the health facility level in its use. LGAs are the legal entities and are responsible for the delivery of primary health care (district hospitals, health centers, dispensaries, public health, and community health programs). In 2014/15, about 45 percent of the health recurrent budget was allocated to LGAs through MOFEA via block grants. On a per capita basis, the block grant budget has increased from Tshs. 8,099 in 2013-14 to Tshs. 9,546 in 2014-15due mainly to growth in the PE budget. The OC budget has been relatively flat during the same time period (Figure 4). Therefore, LGAs are highly dependent on other sources of financing OC in health, including from central government, from external financing, and from own sources, and from internally generated revenues.

Figure 4: Per capita LGA block grant budget trends
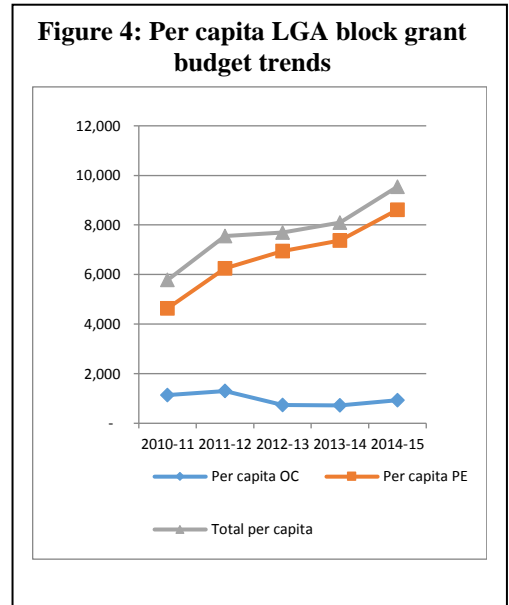
31. Geographic inequality in Health Block Grant (OC and PE) distribution amongst LGAs remains substantial and continues to widen. Equity between LGAs has been traditionally assessed by plotting the ratio of per capita funding an LGA receives over the average across all LGAs. In Figure 5, LGAs plotted on the left receive the highest allocations, while those on the right receive the lowest. Due to incomplete budget or population data for some districts, a total of 152 districts are assessed.

Figure 5: LGA level per capita Health Block Grant Spending FY2014-15, as a multiplier of average per capita spending sorted in descending order.

32. Figure 5 speaks strongly to the persistence of highly unequal health block grant (OC and PE) distribution amongst LGAs. Excluding Kibaha which has an unusually high per capita budget of Tshs. 52,655, the top five districts - Mwanga, Mafia, Kibaha and Kisarawe, and Siha average about 31,000 Tshs per Capita (3.25 times the national average); while the bottom five –Nzega, Itilima, Kyerva, Uvinza, and Bariadi average about 3035 Tshs per capita (0.32 times the national average). On a population basis, those in the privileged top 10 percent of the population get twice the national average; while the least privileged 10 percent get 40 percent of the national average. While comparison with previous year's RBA is analysis is far from perfect given the incorporation of new districts and new population figures,

increasing standard deviation in per capita health block grant spending at the LGA level (from 0.65 in 2013-14 to 0.68 in 2014-15) suggests that inequality in resource distribution might be widening amongst LGAs. For 2014-15, the variation is significantly lower in the OC than in PE (standard deviation of 0.60 and 0.72 respectively).

33.   Given the huge variation in OC among LGAs, this PforR advocates for the government to adopt a formula that favor underserviced areas using a combination of population, poverty and health outputs similar to that of the HBF. Currently. MOFEA uses a population based formula to allocate OC to LGAs. The Health Basket Fund (HBF) uses an equity based formula for the allocation of HBF resources to LGAs. The HBF criteria include: population (70 percent of weight), poverty (10 percent), health outputs (10 percent) and geographical constraints (10 percent)).

34.   Further, personnel distribution and retention has been a challenge in the country, especially for lower level health facilities, and for rural areas, resulting in lack of availability of qualified personnel at facilities. Through the BRN initiative, special attention is being provided for a more equitable distribution of skilled personnel from the public sector, especially for dispensaries and health centers. Additionally, through the public-private partnership, service level agreements are being signed with nongovernment organizations to provide quality PHC services in rural and underserved areas. Other measures planned include, settlement allowances for staff retention, incentives through the results-based financing mechanism to motivate staff for better performance at dispensary and health centers. Emphasis is also on preventive and early care (incentives in RBF to support ANC visit within the first 12 weeks). Community workers are also being incentivized to create the appropriate and timely referrals to health facilities.

35.   New directives under the BRN in Health suggest greater fiscal decentralization to health facilities. While PE is directly allocated to staff bank accounts by MOFEA, decentralized OC budgets are allocated to the providers (health facilities) through the LGAs. LGAs however use their own discretion in allocating OC to health facilities and funds are not always for direct facility use. This hinder innovative solutions to solve local problems and ability of facilities to implement facility improvement plans. BRN in Health aims to strengthen fiscal decentralization through empowering facilities to plan and manage funds. LGAs would be required to transfer part of the resources (OC, HBF, council own source funds) directly to health facility bank accounts for facility level use.

36.   Budget execution rate in the health sector in 2013/14 performed relatively well compared to other sectors, even though arrears have grown substantially. Overall, the health sector budget execution rate in 2013/14 declined to around 86 percent, down from 89 percent in 2012/13. However, the recurrent budget performed far better than the development budget, at 91 percent compared to 80 percent. With regards to the development budget, both foreign and local budget were under executed in 2013/14. Nevertheless, the execution of the locally funded component of the health budget was lower than the foreign funded component. Moreover, there is a buildup of arrears with Medical Stores Department (MSD), estimated to be around US$50-60 million by the end of 2013/14. Recognizing this, the Health Commodities work stream of the BRN focuses on improving governance, accountability, and sense of ownership of health commodities supply chain while strengthening management of MSD working capital for sustainable availability of medicines and medical supplies.

C. Program's results framework and monitoring

37. The DLIs have been chosen to address the bottlenecks along the results chain that require incentivizing, with both ambition ("stretch") and feasibility ("realism") taken into account. All PDO and the Intermediate Results Indicators were selected as DLI because of their ability to measure and incentivize key intended changes in the health sector.

38. A set of specific, measurable and relevant indicators was agreed with the GOT to monitor the Program. As part of the M&E harmonization agenda under SWAP, the vast majority of Program indicators are extracted from the Government's M&E framework (e.g. HSSP IV and BRN in Health indicators). This aims to increase the Government's ownership in Program results and reduce fragmentations in M&E. As discussed in the M&E section above, Program results will be monitored through the routine health management information system or administrative data systems of MOHSW and PMO-RALG. This is a deliberate choice to (i) align Program's monitoring methodology with that of the Government; (ii) reduce the country's reliance on surveys to generate data; (iii) maximize the use of routine information platforms; and (iv) help further strengthen the country's information systems.

39. The cornerstone of PHC information system is the District Health Information System 2 (DHIS 2). Tanzania completed its country wide rollout of DHIS 2 in 2013 after deploying a revised health management information system tool national wide. Data from all PHC facilities in the country are now entered monthly in the National Data Warehouse through internet connections.

40. As part of monitoring progress towards the PDO, the Bank team will conduct regular implementation support missions based on the detailed Implementation Support Plan (Annex 9), whose focus would be on timely implementation of the agreed Program Action Plan (Annex 8), provision of necessary technical support, conduct of fiduciary reviews, and monitoring adherence to verification protocols, where appropriate.

D. Governance structure and institutional arrangements

41. An adequate governance structure and coordination arrangements are in place to implement the Program. Coordination mechanisms for the MOHSW and PMORALG to collaborate with each other as well as to coordinate with country stakeholders and external development partners are well established. In order to implement this Program, a Steering Committee will be established between the key implementing agencies that will meet biannually.

42. In addition, as part of BRN, there are various mechanisms put in place by the GoT to ensure the Program's success results by holding various actors accountable for results *at all levels* along the hierarchy, from front-line providers to the office of the President. First, in BRN, there will be governance and delivery structures at different levels (e.g. Ministerial Delivery Unit, NKRA Steering Committee). Second, the proposed restructuring of the HBF will help foster the accountability of LGAs as discussed above. Third, RBF will introduce performance-based contracts with PHC facilities to hold them accountable for service delivery. Fourth, various social accountability mechanisms will be used in both BRN and RBF (e.g. Health Facility Committees, use of CSO for verification of results). Last but not least, very high level of country ownership in these two initiatives is a major enabling factor for the future Program results.

E.   Economic analysis of the Program

43.   The Program supports strengthening of the primary health care delivery system particularly maternal and neonatal child health services nationwide. Primary Health Care in Tanzania is provided at the community level (households and communities) and in health facilities (dispensaries, health centres and the district hospital). While a range of services are provided at the PHC level, services targeted towards women of reproductive age and children constitute the largest share. These include Integrated Management of Childhood Illnesses (IMCI), malaria, tuberculosis, HIV prevention and control, Sexually Transmitted Infections (STIs), Reproductive Maternal and Child Health (RMCH) and Prevention of Mother to Child Transmission (PMTCT). Over the period 2009 to 2014, the number of health facilities and the number of health workers deployed have increased, but per capita utilisation of health services did not increase significantly primarily due to low perceived quality of care.

44.   Quality improvement of primary health care is therefore a major focus of HSSP IV, propelled by the BRN in Health activities. The development of a certification and accreditation system for facilities will underscore this. Quality is also expected to improve through adequate supply of medicines and health products. Performance management systems (including provision of incentives for improved PHC quality especially at the local government and facility level) will further enhance quality as well as accountability of health workers.

45.   This economic analysis covers (i) the rationale for public investment, (ii) the summary of costs and benefits and (iii) risk-sensitivity analysis.

46.   ***Rationale for public investment.*** Government intervention in the health sector at the primary care level is strongly justified in Tanzania on the ground of improving equity, as well as positive externalities and public goods. The poor are highly dependent on the public sector for services, especially in the rural areas where choices are limited. However, quality of care in PHC facilities is low. Public subsidy is thus called for to improve quality of PHC care where the poor access services. Improved quality of care also means improved technical efficiency. It should therefore help reduce overall costs in the medium to long-term. The BRN in Health and the Program with an emphasis on increased resources to primary care encourages domestic funding to focus on areas where there is a clear role for government. Further under the health facility based incentives, facilities are incentivized for providing services to the extreme poor as identified by the Conditional Cash Transfer (CCT under PSSN) program thus directly targeting those most in need. Additionally, as geographic inequality in health block grant distribution amongst LGAs remains substantial and continues to widen, the Program emphasizes the allocation of resources in a more equitable manner including the promoting the use an equity formula for distribution of resources to LGAs.

47.   The Program supports strengthening fiscal decentralization to the level of the health facilities to foster innovation and cost-effective local solutions**.** Decentralization of service delivery in Tanzania is still incomplete with local governments still reliant on central levels for key inputs (medicines, part of operating cost funding etc.). The introduction of bank accounts at the facility level with clear financial management guidelines supported and incentivized by the Program brings resources closer to where services are delivered and helps foster local solutions to shortages in health personnel and medicines.

48.   Key beneficiaries of the Program are women of reproductive age and children under the ages of five and key program indicators will be monitored by gender. The BRN in Health supported by the Program prioritizes regions with highest burden of maternal, neonatal, and child mortality. In addition, it aims to target and expand coverage of selected evidence-based interventions in RMNCH that will have the greatest impact on lives saved through strong district level support in decision-making and implementation.

49.   Widespread shortages of qualified health workers especially in rural and poor districts result in the delivery low quality of primary care services to those most in need. Redistribution of skilled personnel especially at the dispensary level with a focus on regions with critical shortages as planned under BRN HRH work stream and supported by the Program is expected to further reduce inequities at the LGA level. The Program also supports and incentivizes the new community health worker strategy bringing services closer to the population and promotes efficiency and health worker performance management through incentives, contracts and recognition, and provides opportunities for hiring of skilled HRH through PPP/Private sector engagement.

Summary of Benefits and Costs

50.   There is considerable amount of literature that points to the efficacy of primary care services. Primary care services is associated with improved control of routine illnesses that have serious consequences if left untreated. Availability of such services close to where the population reside improves patient satisfaction. Longitudinal care offered by primary care services reduces use of ancillary and laboratory services, leads to shorter lengths of stay at hospitals and improves patient compliance.

51.   While primary care services are largely associated with reducing burden of disease and at a low cost, there are welfare benefits that accrue to a household as a result of prevention of severe disease. Severe disease can limit the ability of patients and care givers to work and lead to consumption of household assets in purchasing of care. Through prevention and early treatment, accessible primary care services can thus reduce consequences of ill-health for households, reduce absenteeism, and enhance children's performance at school.

52. This section compares the costs of the Program with the measurable benefits that arise from the implementation of the Program. Economic benefits of the Program are analyzed in terms of infant and maternal deaths averted as well as reduced productivity loss and illness cost loss. It should be noted that this is an underestimate of the actual economic impact of the Program. Other benefits not quantified here include: poverty alleviation, psychological benefits of a healthy population, etc.

53. Here, we simulate the number of infant and maternal deaths that would be averted as a result of the Program over the period 2015-2035.

54. The economic analysis assumes that use of services will improve primarily due to improvements in quality of care (less drug stock outs, access to qualified health personnel) and with the presence of more motivated staff that

Table 4: Tanzania, Demographic and Health Indicators (2004-5 and 2010)

Total Population, millions	33,710,000	43,190,000
Women of reproductive age		
- %	23	24
- no.	7,753,300	10,365,600
Maternal mortality ratio (MMR)	578	454
no of maternal deaths	8,261	7,620
Crude Birth Rate (CBR)	42.4	38.86
Infant mortality rate (IMR)	68	51
Neonatal mortality rate (NNMR)	32	26
no of infant deaths	97,193	85,597
no of neonatal deaths	45,738	43,637
No. of new births	1,429,304	1,678,363
% of births delivered by professionals	46.3	50.6
% of births delivered at facilities	47.1	50.2
No of births by professionals	661,768	849,252
No of births at facilities	673,202	842,538

Source: Demographic and Health Survey, 2004-5 and 2010

perform better as a result of the results-based financing and other interventions supported by the Program.

55. The baseline information on morbidity profiles and use of services used in the analysis is from the Demographic Health Surveys (2005, 2010) (Table 4). The baseline for the causes of infant deaths in Tanzania is from the WHO database (2010) (Table 5).

56. As shown above, in Tanzania, approximately half of infant deaths are among children in the neonatal age group (first month of life). Among neonates, sepsis and respiratory distress are the leading causes of death and adequate care at birth or immediately after birth can significantly reduce mortality. Among post-neonates, malaria, pneumonia, and dehydration due to diarrhea as the leading causes of death.

Table 5: Causes of Death for Infants, 2010

Causes of Death	Percentage of infant deaths	
	2005 (%)	2010 (%)
Neonatal period	**47%**	**50%**
neonatal tetanus	3%	
severe infection	29%	19%
birth asphyxia	27%	29%
Diarrhea, dehydration	3%	1%
Congenital malformation	7%	7%
preterm births	23%	35%
Others	8%	9%
Post-neonatal period	**53%**	**50%**
HIV/AIDS	12%	9%
Diarrhea, dehydration	23%	13%
Measles	1%	1%
Malaria	31%	17%
Pneumonia	29%	20%
Injuries	3%	8%
Others		32%

Source: WHO, 2006, 2012.

Assumptions

57.   Table 3 provides the assumptions used for the simulations. It is assumed here that the program will avert infant and maternal deaths as institutional deliveries as well as quality of antenatal care increases. Additionally, reduction in morbidity and increased use of appropriate health services further reduces mortality among infants. The analysis is run for three different sub-groups: (a) neonates, (b) post-neonates, and (c) pregnant women.

58.   Between 2005 and 2010, the annual increase in institutional deliveries was 1%. To calculate neonatal deaths averted, the model assumes that with improved quality of care, institutional deliveries will increase by about 5% per year during the program period (2015-2020). Following which, as a result of improved quality of care, institutional delivery will increase by 2% per annum. The model starts with 52% institutional delivery in 2015 and reaches 88% institutional delivery by 2034.

Further it is assumed that the risk of a neonatal death varies by place of delivery. For instance, in 2014, based on trend data using the Demographic Health Survey, the risk of a neonatal death at a health facility is 0.003. In comparison, the risk of a neonatal death at home is 0.04. As the quality of health services improves, the risk of a neonatal death at a health facility reduces (from 0.003 in 2015 to 0.001 in 2020). In addition, services quality improvements will further result in an increase in the share of institutional delivery thus having an exponential effect on the number of neonatal deaths averted. Further as quality of antenatal care improves, the risk of a neonatal death further reduces.

Table 6: Assumptions used for the simulations.

Intervention Assumptions	2010-2012 baseline	2015	2016	2017	2018	2019	2020	2034	Remarks		
									2005-2010	2015-2020	2021-2035
Neonates											
% birth delivered at health facilities	51%	52%	55%	57%	60%	63%	66%	88%	annual increase by 1%	annual increase by 5%	annual increase by 2%
% births delivered at home	49%	48%	45%	43%	40%	37%	34%	12%			
risk of dying if delivered by skilled birth attendant	0.003	0.003	0.002	0.002	0.002	0.002	0.002	0.002	risk of dying went from 0.014 to 0.008	reduced risk of dying due to improved quality of care	no change in risk after intervention period
risk of dying if delivered at home	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.04			
share of causes of death for post-neonates:											
measles	1%	1%	1%	1%	1%	1%	1%	1%		no change in share	
pneumonia	20%	20%	18%	16%	13%	11%	10%	2%	5% reduction pre intervention period	50% reduction during intervention period	10% reduction post intervention period
Malaria	17%	17%	15%	13%	11%	9%	8%	2%	5% reduction pre intervention period	50% reduction during intervention period	10% reduction post intervention period
diarrhea	13%	13%	11%	10%	9%	8%	7%	2%	5% reduction pre intervention period	50% reduction during intervention period	10% reduction post intervention period
HIV	9%	9%	8%	8%	7%	7%	6%	1%	5% reduction pre intervention period	50% reduction during intervention period	10% reduction post intervention period
other causes										5% reductions during intervention period	2% reduction post intervention period
maternal health											
risk of dying if delivered at health facilities	0.001	0.001	0.0009	0.0008	0.0007	0.0006	0.0005	0.0005	risk of dying went from 0.0011 to 0.0003	reduced risk of dying due to improved quality of care	no change in risk after intervention period
risk of dying if delivered at home	0.0073	0.0073	0.0073	0.0073	0.0073	0.0073	0.0073	0.0073			

59.   For post-neonates, the intervention focuses on improved coverage and quality of care for malaria, pneumonia, diarrhea/dehydration and HIV.

60.   A similar simulation was conducted to estimate the number of maternal deaths averted as a result of the Program. Here, it is assumed that maternal deaths would be averted as more and more women receive quality antenatal care, deliver at health facilities or assisted by skilled attendants and receive quality postnatal care within 48 hours of delivery. Maternal morbidity would also reduce as women seek treatment and comply with the treatment protocols (e.g. iron supplementation for anemia). Subsequently, less women would need additional care, resulting in savings in the cost of treatment and travel. Women's productivity too would improve as their health status improves.

Figure 6: Infant Mortality Rate projection, 2000 to 2034
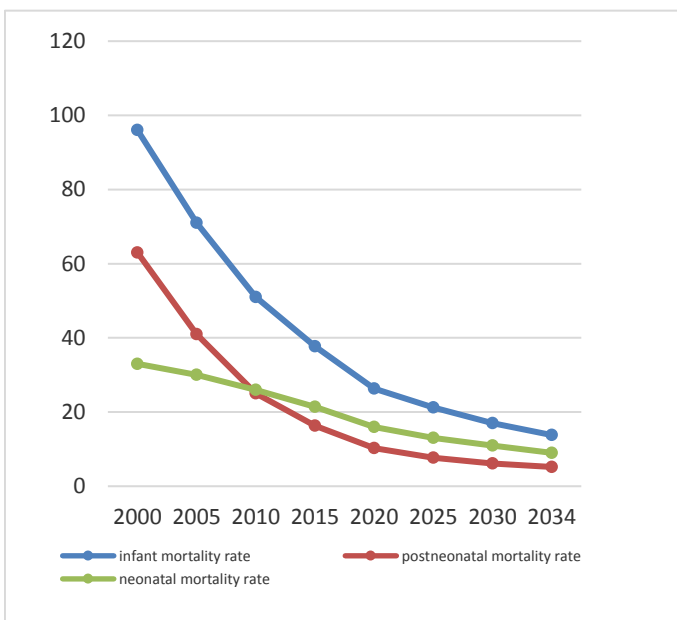
Source: Bank staff calculations. Note: actuals are for 2000-2010. Projections are for 2015 to 2034.

61.   In 2014, based on trends from DHS data, the risk of a maternal death when delivering at a health facility is at 0.001 and when delivering at home is at 0.007 respectively. It is further assumed, that as a consequence of improved quality of health care, the risk of a maternal death at health facility and when the delivery is attended by a skilled attendant reduces during the program intervention period.

62.   The simulation shows several benefits. As shown in Figure 6, infant mortality rate reduces over time from 37 per 1,000 live births in 2015 to 14 infant deaths per 1,000 live births by 2034.

63.   Table 7 provides the results of the simulation model of the number of infant and neonatal deaths averted during the program period. Here we assume that 40% of the program cost is allocated for improvements in child health. It is also estimated that the cost of year of life gained (YLG) is US$6, and the cost per disability adjusted life years (DALY) is US$10 during the program intervention period.

64.   Maternal mortality ratio too reduces over time from 410 maternal deaths per 100,000 live births in 2015 to 135 maternal deaths per 100,000 live births by 2034 (Figure 7).

Table 7: Results of the economic analysis for averted infant and neonatal death (2015-2020)

Year		intervention childbirth attended	Averted infant deaths Neonatal	Post-neonatal	Number of Infant lives Saved	Years of life gained (NPV)	YLG sum (NPVsum)	DALY (NPV)	DALY sum (NPVsum)
2014	baseline	51%	total	total	project	project	project	project	project
2015		52%	1034	0	1034	60,063		33,570	
2016		55%	4164	15997	21196	1,231,368		688,230	
2017		57%	6482	18539	46217	2,684,971		1,500,671	
2018		60%	9044	21209	76470	4,442,518		2,482,990	
2019		63%	11868	23648	111985	6,505,804	12,245,807	3,636,192	6,844,366
2020		66%	14149	24404	150538	8,745,547	18,771,869	4,888,018	10,491,880

Figure 7: Maternal mortality ratio projections, 1990-2034
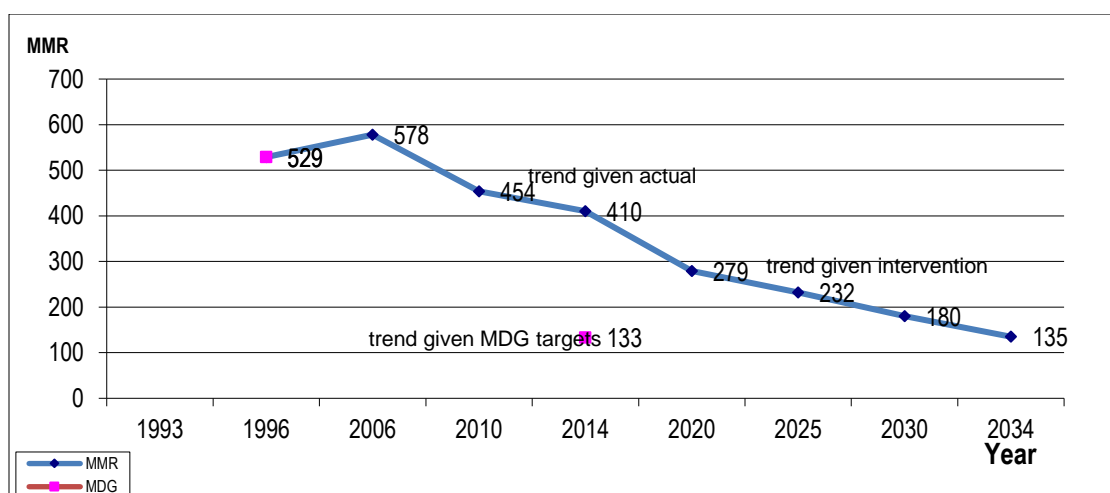
Source: Bank staff calculations. Note: Actuals are for 1990 to 2014. Projections are for 2020 to 2034.

65. Table 8 presents the costs and the measurable economic benefits that arise from the implementation of the Program. It shows savings incurred due to death or morbidity averted. In 2011/12, the per capita health spending in Tanzania was US$ 45 (NHA). Assuming 3% inflation, per capita health spending in future years is calculated. For women's health, it is assumed that US$100 is saved in health spending due to each case of mortality and morbidity averted. Further, reductions in ill-health would reduce absenteeism and this result in productivity gains as earning potential increases. GDP per capita is used as a proxy for earnings potential, while inflation is assumed to be 3% per year. A five percent discount rate is assumed while estimating future costs and benefits.

66. By 2034, it is expected that as many as 1 million infant and neonatal deaths are averted, as is 84,000 maternal deaths. While the analysis focuses on infant and maternal deaths, many of these interventions would also reduce infant and maternal distress and morbidity. Consequently, total

Table 8: Net Present Value and Internal Rate of Return (2015-2035)

Averted for child		Averted for mother		Total	Discount	Discounted	Program incremental	Program Net	Discount	Discounted	NPV	IRR	year
Productivity Loss, $	Illness Cost, $	Productivity Loss. $	Illness Cost, $	Benefits $	rate r= 5%	Benefits	cost (MNCH) $	Benefits $	rate 5%	Net Benefits	$	$	
				0	1			-	1	-			2014
	46,524	121,767	3,971	172,262	1.05	164,059	49,000,000	(48,827,738)	1.05	(46,502,608)	(46,502,608)		2015
	1,011,892	448,989	14,642	1,475,523	1.10	1,338,343	48,000,000	(46,524,477)	1.10	(42,199,072)	(88,701,680)		2016
	2,272,601	836,429	27,276	3,136,307	1.16	2,709,260	64,000,000	(60,863,693)	1.16	(52,576,346)	(141,278,026)		2017
	3,873,023	1,292,436	42,147	5,207,606	1.22	4,284,310	39,000,000	(33,792,394)	1.22	(27,801,086)	(169,079,112)		2018
	5,841,967	1,826,442	59,561	7,727,970	1.28	6,055,067	60,000,000	(52,272,030)	1.28	(40,956,503)	(210,035,615)		2019
	8,088,767	2,314,036	75,462	10,478,265	1.34	7,819,043		10,478,265	1.34	7,819,043	(202,216,572)		2020
	10,650,865	2,618,105	85,378	13,354,348	1.41	9,490,686		13,354,348	1.41	9,490,686	(192,725,886)		2021
	13,553,919	2,952,940	96,297	16,603,157	1.48	11,237,670		16,603,157	1.48	11,237,670	(181,488,216)		2022
	16,825,778	3,321,325	108,310	20,255,413	1.55	13,056,820		20,255,413	1.55	13,056,820	(168,431,396)		2023
	20,496,807	3,726,452	121,522	24,344,781	1.63	14,945,584		24,344,781	1.63	14,945,584	(153,485,812)		2024
933,092	24,442,891	3,983,808	129,914	29,489,706	1.71	17,242,020		29,489,706	1.71	17,242,020	(136,243,792)	(0)	2025
19,703,415	28,836,706	4,450,781	145,143	53,136,044	1.80	29,588,138		53,136,044	1.80	29,588,138	(106,655,654)	-10%	2026
44,251,758	33,715,199	4,963,085	161,849	83,091,892	1.89	44,065,404		83,091,892	1.89	44,065,404	(62,590,250)	-4%	2027
75,414,947	39,118,429	5,524,779	180,166	120,238,322	1.98	60,728,523		120,238,322	1.98	60,728,523	(1,861,727)	**0%**	2028
113,753,926	45,244,739	6,140,035	200,230	165,338,931	2.08	79,530,853		165,338,931	2.08	79,530,853	**77,669,126**	**3%**	**2029**
157,503,300	51,634,738	6,552,356	213,676	215,904,070	2.18	98,908,142		215,904,070	2.18	98,908,142	176,577,268	6%	2030
207,392,104	58,666,143	7,260,737	236,777	273,555,761	2.29	119,351,472		273,555,761	2.29	119,351,472	295,928,740	8%	2031
263,919,947	66,391,327	8,034,860	262,022	338,608,156	2.41	140,698,683		338,608,156	2.41	140,698,683	436,627,423	10%	2032
327,629,116	74,866,698	8,880,106	289,586	411,665,506	2.53	162,910,020		411,665,506	2.53	162,910,020	599,537,443	11%	2033
399,110,853	84,153,058	9,802,351	319,661	493,385,922	2.65	185,951,965		493,385,922	2.65	185,951,965	785,489,408	12%	2034
475,948,441	93,991,121	10,348,334	337,466	580,625,362	2.79	208,411,040		580,625,362	2.79	208,411,040	993,900,448	13%	2035

health benefits, as measured by a composite measure such as disability-adjusted life years would be significantly greater.

67.   The program reaches a positive net present value (NPV) by 2029 (or in its 14th year after program effectiveness). The net benefits accruing to the country are maximized thereafter. We find that the internal rate of return (IRR) is positive but reaches the discount rate level by 2030 (or at 15th years from program effectiveness) making the program an acceptable investment.

Risk-sensitivity analysis

68.   The above simulation has taken 3 scenarios: (a) scenario 1 - status quo, (b) scenario 2 - reduced mortality rates as a result of increased institutional delivery by an annual increment of 5% reaching 66% institutional delivery by 2020, and (c) scenario 3 - reduced mortality rates as a result of increased institutional delivery by an increment of 10% reaching 80% institutional delivery by 2020. The sections above show the results of scenario 2 as compared to scenario 1. When the model is re-run for scenario 3, we find a positive NPV by 2028 (13th year), and IRR is positive and reaches the discount rate by 2029 (14th year).

69.   A sensitivity analysis was conducted using variable discount rates of 5% and 12%, and variable institutional deliveries by 2020 of 66% and 80%. The results are shown in Table 9.

Table 9: Sensitivity Analysis.

Net Present Value, $	Institutional delivery by 2020	
Discount rate of 5%	66%	80%
Positive NPV	77,669,126	43,395,116
(year)	2029	2028
Positive NPV and IRR above discount rate of 5%	176,577,268	136,913,336
(year)	2030	2029
Discount rate of 12%		
Positive NPV	29,084,054	24,679,887
(year)	2031	2030
Positive NPV and IRR above discount rate of 12%	--	---
(year)	beyond 2035	beyond 2035

Technical risks

70.   By and large, the Program designed by the GOT is technically sound and risk of non-implementation of Program activities is low given the fact that detailed implementation plans with time-bound actions, good division of labors, clear accountability and M&E mechanisms have been developed for all work streams under BRN in Health. Some of the BRN in Health activities are already under implementation such as the "Star Rating" initiative. Although the limited capacity of Program implementers remains a concern, the Program's annual capacity building plans are expected to help address this issue.

71.   In summary, any residual risks related to technical design, implementation and M&E will be mitigated through the use of DLIs, Program's annual capacity building as well as TA to be financed through parallel financing from development partners. These are summarized in Table 7.

Table 10: Technical Assessment: Key Risks and Mitigation Strategies

Risks	Mitigation
Technical Design	
Insufficient financing for the Program	- TA for HSSP IV costing and budgetary framework - TA for development of Health Financing Strategy - DLI 1 minimum condition on share of health in GOT's recurrent expenditures
New approaches (e.g. "Star Rating" accreditation, RBF) being implemented on a significant scale in Tanzania for the first time	- Careful pilots with assessments to improve the design - Impact evaluation of selected activities (e.g. RBF) to generate the evidence base for policy making - GOT's own mechanisms for adaptive implementation such as periodic BRN in Health check-ins; mid-term review of the HBF for fine-tuning as needed
High intensity of RBF activity	- Gradual roll-out
Program's imbalance between focus on processes and actual results	- Thorough analysis and stakeholder consultations to strike a balance between (i) key service delivery results and (ii) key bottlenecks in processes which need to be tackled to deliver such key service delivery results
Risk of non-implementation of certain Program activities	
Non-implementation due to poor planning	- Detailed implementation plans developed, with specific time-bound actions - DLI 1 minimum condition to improve planning at the council level
Non-implementation due to lack of accountability	- Accountability mechanisms for each level of implementers - Higher levels are also held accountable for results at the lower levels - DLIs to stimulate performance at every single level: national, regional, LGAs and PHC facilities
Non-implementation due to lack of capacity	- Detailed annual capacity building plans under the Program for all level - DLI criterion related to the development and implementation of such plans - TA provided by development partners though parallel financing
Risks related to M&E	
HMIS does not produce quality data on a timely manner	- TA for DHIS-2 - GOT's plan on Data Quality Audit (DQA) by RHMTs for LGAs under the Program - DLI criterion related to (i) quality of HMIS data (ii) DQA
Lack of information on denominators in routine health statistics	- CRVS initiative - Incentives for CHW and PHC facilities under RBF to fulfill their respective roles in CRVS