Federal democratic republic of Ethiopia
Ministry of Health

SPECIAL BULLETIN
17TH ANNUAL REVIEW MEETING 2015

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FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF HEALTH

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17TH ANNUAL REVIEW MEETING 2015

Contact Information: The bulletin welcomes comments to improve its quality and further inquiry in interested areas to facilitate use of information. We encourage your involvement in providing articles and best practices. For further information please contact, Mr. Habtamu Tesfaye, email habtachn@gmail.com or mectmoh@yahoo.com

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ACRONYMS

AFP	Acute Flaccid Paralysis
AIDS	Acquired Immunodeficiency Syndrome
ALOS	Average Length of Stay
ANC	Antenatal Care
API	Annual Parasite Incidence
ARM	Annual Review Meeting
BCC	Behavioral Change Communication
BOR	Bed Occupancy Rate
CBTC	Community Based TB Care
CHW	Community Health Worker
CNR	Case Notification Rate
COC	Certificate of Competency
CPR	Contraceptive Prevalence Rate
CSA	Central Statistical Agency
DOTs	Directly Observed Treatment
EDHS	Ethiopia Demographic and Health Survey
EFY	Ethiopian Fiscal Year
eHMIS	Electronic Health Management Information System
EHRIG	Ethiopian Hospital Reform Implementation Guideline
EHSP	Essential Health Service Package
EPHI	Ethiopian Public Health Institute
EPI	Expanded Program on Immunization
ESPA+	Ethiopian Service Provision Assessment Plus
ETB	Ethiopian Birr
FP	Family Planning
GC	Gregorian Calendar
GTP	Growth and Transformation Plan
HC	Health Center
HDA	Health Development Army
HEP	Health Extension Program
HEW	Health Extension Worker
HF	Health Facility
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HP	Health Post
HSTP	Health Sector Transformation Plan
ICT	Information and Communication Technology
IPT	Intermittent Preventive Therapy
IRS	Insecticide Residual Spraying
ITN	Insecticide Treated Net
IUD	Intra-Uterine Device
IUSH	Integrated Urban Sanitation and Hygiene
KMC	Kangaroo Mother Care
LLIN	Long-Lasting Insecticide-treated Net
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MDR TB	Multi-Drug Resistant TB
MDSR	Maternal Death Surveillance and Response
MDT	Multi Drug Therapy
MMR	Maternal Mortality Ratio
MNCH	Maternal, Newborn and Child Health
MOH	Ministry of Health
NASG	Non- Pneumatic Anti Shock Garment
NBTS	National Blood Transfusion Service
NCD	Non-Communicable Disease
NGO	Non-Governmental Organization
NICU	Neonatal Intensive Care Unit
NNP	National Nutrition Programme
NQF	National Quality Framework
NTD	Neglected Tropical Disease
OPD	Outpatient Department
PFSA	Pharmaceutical Fund and Supply Agency
PHC	Primary Health Care
PHCU	Primary Health Care Unit
PLWHA	People Living With HIV/AIDS
PMTCT	Prevention of Maternal to Child Transmission of HIV
PNC	Postnatal Care

ACRONYMS

PPH	Post Partum Hemorrhage
PTB	Pulmonary TB
RDQA	Routine Data Quality Assessment
RDT	Rapid Diagnostic Test
RHB	Regional Health Bureau
SAFE	Surgery, Antibiotics, Face washing and Environmental sanitation
SBA	Skilled Birth Attendance
SNNPR	Southern Nations, Nationalities and Peoples Region
SUFI	Scale Up For Impact
TB	Tuberculosis
TFR	Total Fertility Rate
TSR	Treatment Success Rate
TT	Trachomatous Trichiasis
TTI	Transfusion Transmitted Infection
USD	United States Dollar
VCHP	Volunteer Community Health Promoter
WaSH	Water, Sanitation and Hygiene
WDT	Women Development Team
WHO	World Health Organization
WorHO	Woreda Health Office
WRA	Women of Reproductive Age

Forward

Welcome to the Ministry of Health's (MOH) 17th Annual Review Meeting (ARM).

This Special Annual Review Meeting Bulletin is 4th in a series that is published for distribution at the MOH's 17th ARM. As MOH is transitioning from its 20 year health sector **development** to its new health sector **transformation** plan, this bulletin highlights important health sector strategic issues, performances and future directions. Moreover, the special bulletin focuses on lessons learned and designing new ways of implementing programs and health systems.

In addition to highlighting the 2nd generation health extension program, this special bulletin also includes thirty three articles based on 4 broad categories, namely: Progress Update, Best Practices, New Initiatives and Articles of Interest. The subject matter in the articles span from, introducing knowledge management as an important vehicle for transforming the health sector to access and utilization of services in priority program areas.

Effort has also been exerted to widen the views of this special bulletin by actively soliciting, vetting and including articles from various stakeholder such as MOH directorates and agencies, regions, development partners, hospitals, and by engaging external expert reviewers to vet submitted articles.

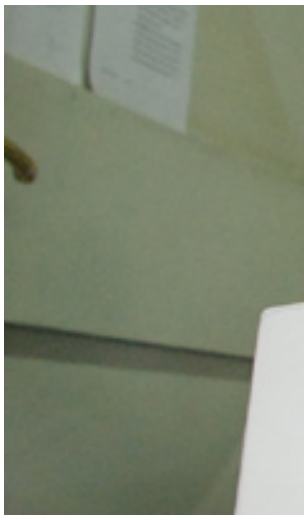
Data, up to the end of EFY 2007, included in this special bulletin is compiled from routinely generated information from MOH's Health Management Information System, population based surveys, service provision assessment, and various model estimates.

This special bulletin is designed and expected to inform policy makers, program managers, experts and researchers regarding the focus area and future direction of MOH.

I want to take this opportunity and thank staff of MOH's Policy and Plan Directorate, article contributors and external reviewers for their extra ordinary effort for putting together this special bulletin -- thank you!

Noah Elias, MPH
Director Policy and Planning

Section 1:
Progress Update



IMPLEMENTATION OF NTP IMPROVEMENT PLAN

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Background

Ethiopia is among the 22 high TB burden and 27 high MDR TB burden countries in the world with an estimated number of 233,000 new cases of TB (incidence rate 224 per 100,000 populations) reported in 2013[1] . As per WHO report, compared to the 1990 baseline, there has been a major decline in the prevalence, incidence, and TB associated death rates in the country. The prevalence rate for all forms of TB has declined from 426/100,000 in 1990 to 211/100,000 populations in 2013 (50% reduction). Similarly, the TB incidence rate has dropped from 369 in 1990 to 224/100,000 population in 2013 (39% reduction), after peaking to 421/100,000 in 2000. The TB related mortality rate has also declined from 89/100,000 in 1990 to 32/100,000 in 2013 (64% reduction from 1990 level). However, there exists geographic variation in the disease epidemiology according to data generated. According to the 2010/11 national TB prevalence survey, smear positive and bacteriologically confirmed TB was higher among 15-34 years old and in pastoralist settings. The prevalence of bacteriologically confirmed TB cases was found to be comparable in rural and urban areas, whereas, the prevalence of smear positive TB cases was higher in pastoralist and rural areas[2].

Despite accelerated decentralization of DOTS services and massive expansion of TB prevention and control activities to the community, the case notification rate (CNR) for all forms of TB remained low compared with the estimated incidence. Since 2011, the gap between cases notified and estimated is widening as reflected by over 10% decline per year; similarly, detailed analysis of TB CNR data by regions also shows that there is a consistent decline in TB CNRs from all major agrarian regions and urban settings[3].

The recent decline in TB CNR in Ethiopia appears to be due to many factors. Under reporting of detected

[1]Global TB Report, 2014. WHO. Geneva
[2] National Population based TB prevalence Survey, 2011.EPHI.
[3]Annual TBL Bulletin.5th Edition.FMOH/DPCD. 2013

cases through the national HMIS[4], sub-optimal implementation of community-based TB activities in most of the regions and under planning in high-burden settings and declining efforts in TB control interventions at local levels were cited as the main reasons contributing to the declining trends in TB CNR.

Cognizant of the highlighted challenges/gaps in TB control program, the country set ambitious targets in the revised national TB strategic plan 2013-2020 which requires much re-focusing to reverse the rapidly declining TB CNR and improve program performance as a national priority[5]. This calls for concerted effort and investing on high-impact interventions to improve program performance in due course.

Rationale for NTP Improvement plan

The continued yet substantial rapid decline in TB case notifications is a national concern to be addressed with highest urgency and concerted effort. Besides, the TB data quality issue needs an urgent attention by all actors. Recurrent TB Supplies interruptions affecting TB Control Program performance must be addressed with special focus/initiative. The NSP targets must be met to reduce disease burden through heightened response and the quality of TB Services delivery. This required rapid implementation of well-defined quality improvement packages developed by NTP improvement for 2014/15.

Objectives of the NTP Improvement plan

The main objective of the NTP improvement plan was to improve TB control program performance at all levels as measured by improvements in TB/DR-TB case notifications, improved implementation of community-based TB care initiatives, enhanced program management capacity and accelerated implementation of the NSP.

Specific Objectives:

1. To rapidly stop and reverse the declining TB case notifications
2. To improve implementation of community based TB Care
3. To improve program management capacity at national and regional levels for accelerated implementation of NSP initiatives

Methods and interventions

The following steps were taken sequentially by the NTP in the development of the NTP improvement plan.

1. Extensive desk review of program performance and bottleneck analysis by the NTP team from May –July 2014

[4]HMIS DQA Report 2013.FMOH/PPD.
[5]Revised NSP 2013 - 2020. FMOH
[6]Revised NSP 2013 - 2020. FMOH

2. Defining framework for developing NTP improvement packages with inputs from global experts in July 2014
3. Drafting NTP improvement initiatives and NTP improvement plan with score card for key improvement indicators in July 2014
4. National consultation on draft NTP improvement plan was conducted in August 2014
5. Finalization of the NTP improvement plan and was shared to all stakeholders in September 2014
6. Development of Regional TB Control Program improvement plans from September – October 2014

The NTP improvement plan was framed under three broad areas of improvement. The first component deals with improving political commitment at all levels with packages to ensure regular engagement of the health leadership. The second component focuses on TB program management functions while the third deals with enhancing community engagement for TB prevention and care. The NTP improvement plan packages implemented are as follows.

1. Improvement plan for Health and political Leadership engagement
2. Community engagement improvement plan
3. Program Management and coordination improvement packages
   a. TB program management capacity building initiatives
   b. TB Data Quality Improvement packages
   c. TB Services Quality Improvement Packages
   d. Targeted TB interventions packages for emerging regions
   e. TB PSM improvement plan

To monitor the implementation of the NTP improvement plan, color score card with 6 indicators was developed. The implementation was reviewed regularly at national level.

Furthermore, the NTP improvement plan was selected to be the directorate flagship initiative to be followed at highest executive level with in the Ministry of Health.

Table 1: **NTP Improvement Score card**

	Indicators	Baseline 2006 EC	Red	Yellow	Green
1	Tuberculosis case detection rate (all forms)	54%	<65%	65-75%	>75%
2	TB case Detection through community TB care	28%	<40%	40-50%	>50%
3	Cure rate for bacteriologically confirmed new PTB cases	67%	<70%	70-85%	>85%
4	Proportion of presumptive MDR TB for whom DST is performed	25%	<75%	75-95%	>95%
5	DR TB Culture Conversion at Six month				
	Negative	35%	<50%	50-70%	>70%
	Positive	6.2%	>15%	10-15%	<10%
	Death	7.9%	>15%	10-15%	<10%
	Lost to follow up	1.7%	>5%	3-5%	<3%
	Not Evaluated	49%	>2%	0-2%	<0%
6	Preventive therapy (IPT) for HIV positive clients	15%	<40%	40-60%	>60%

Results

A total of 135,831 incident (New + Relapse) TB cases and 2,738 other previously treated TB cases have been reported to NTP in 2007 E.C. (2014/15). Overall, the TB case notification at national level has increased by 16,592 cases (13.6% increment) compared with the 2006 (2013/14) level. The major contributors for the increase in national TB case notification rate for the year were Oromia, SNNPR, DireDawa and Tigray regions (Fig. 1). The annual national TB case detection rate (all forms) for 2007 EFY (2014/15) thus reached 67%.

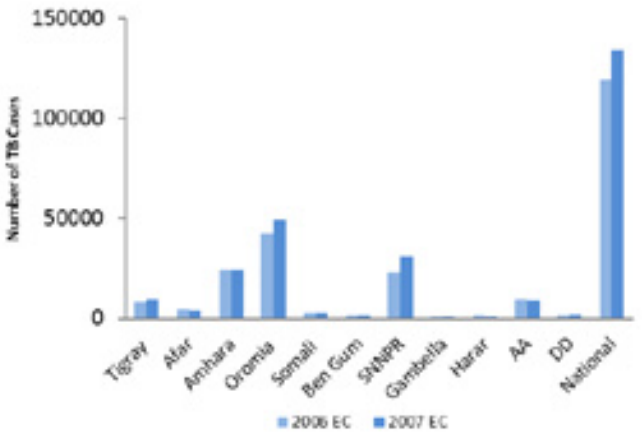

Figure 1. Comparison of TB Case notifications in 2006 and 2007 EC by Region

The 2007 EFY TB case notification has increased by more than 15% in Oromia, SNNPR, Tigray and Dire Dawa regions compared with the 2006 EFY. However, there was a decline in the rest of the regions. Which requires special emphasis on Community TB Care implementation Maximize the engagement HEWs in provision of comprehensive CBTC component by intensifying awareness raising, active case finding (suspect identification and referral), patient support and care (DOT provision and adherence support) in different community settings and strengthen referral linkages between HCs and HPs, and monthly tracking of number of presumptive TB cases identified and referred by HEWs/monthly HP report

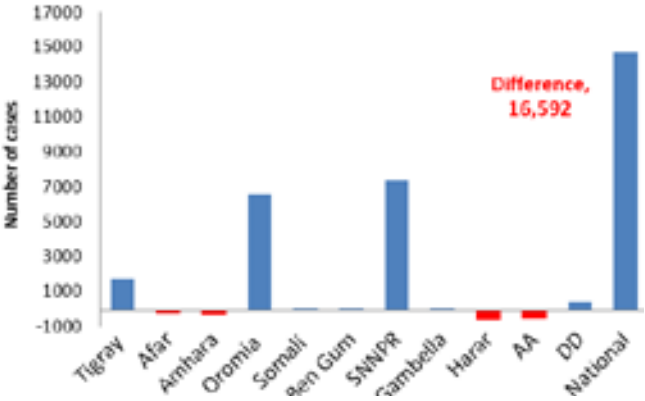

Figure 2. TB Case notification 2007 EFY compared with 2006 by Region

The following figure (Figure 3) provides the trend of annual TB case notifications in Ethiopia since 1991 EFY. (1999 G.C.). Of particular note is the substantial decline in TB case notifications during three successive years from the peak level of 2003 EFY. (2011) until 2006 EFY. This steep decline has been reversed in 2007 EFY.

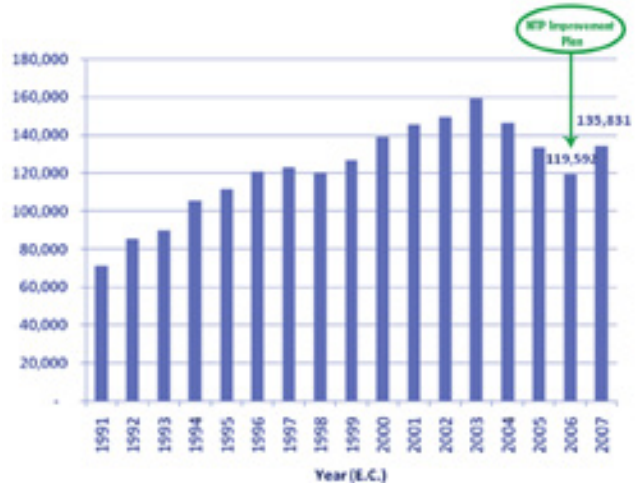

Figure 3: Trends of TB Case notifications (all forms) in Ethiopia 1991 – 2007 EFY

The TB Case notification rate stands at 151/100,000 populations at national level. Very high TB case notification rates (>200 per 100,000 populations) were reported in major urban areas (Dire Dawa, Addis Ababa and Hareri) and in Afar region. Whereas Ethiopian Somali region reported less than 100 TB cases per 100,000 populations, far lower than the national level. Among the major agrarian regions, highest TB CNR was observed in Tigray region (Figure4).

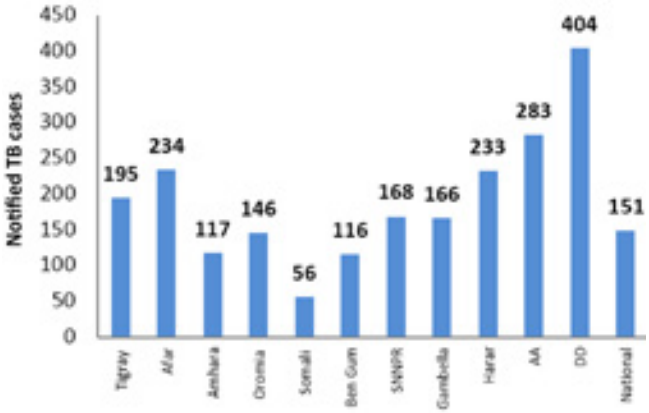

Figure 4 TB CNR Per 100,000 populations by region: 2007 EFY HMIS data

The community's contribution to TB case finding has also shown substantial improvement in 2007 EFY. Overall, 77% of the notified all forms TB cases in 2007 were reported as contributed by community referrals. This data must be verified further as there are clear data quality issue with regards to this particular indicator as the number of TB cases contributed by HEWs referral was found to be greater than the total notified TB cases in some regions.

The treatment outcome of cohort of registered TB patients in 2014 has also shown improvement. Among the cohort of bacteriologically confirmed PTB patients registered in 2006 EFY (2014) in Ethiopia, 77.9% were cured and additional 14.2% successfully completed their TB treatment without bacteriologic evidence of cure. The TB cure rate has been stagnant below 70% for the last couple of years but has improved substantially to reach above 75% for the first time, even if there is intermittent shortage of reagents (Figure 5). The overall Treatment success rate (TSR) for bacteriologically confirmed TB cases registered for TB treatment in 2006 EFY (2014) stands at 92.1%. This is one of the highest TB TSRs globally. The NTP has been maintaining very high treatment success rate for new bacteriologically confirmed PTB cases since 2003 EFY. Further analysis of TB treatment outcome data by regions indicate that Harari, Amhara and Oromia regions have registered very high (>85%) cure rates for bacteriologically confirmed PTB cases during the same year.

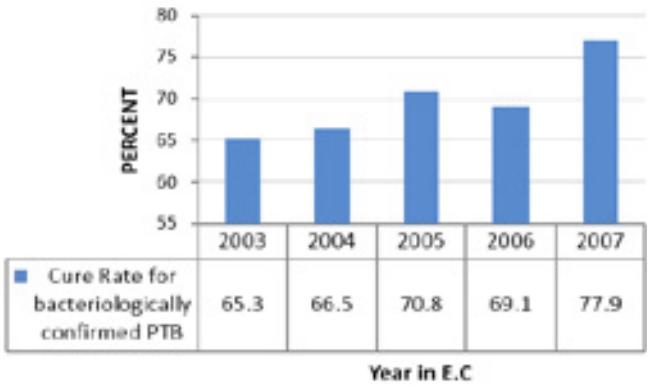

Figure 5.Trend of Cure Rates for bacteriologically confirmed PTB Cases 2003 - 2007 EFY (Cohort periods 2002 - 2006 EFY)

The implementation of accellerated IPT plan with focus on high-load ART/Chronic HIV/AIDS care facilities (hospitals) was also among the major initiatives of the NTP improvement plan. Targetted sensitizations of clinicians from these high-load public hospitals was conducted with focus of the three 'I's and use of GeneXpert for TB diagnosis among symptomatic PLHIV were organized by NTP in 8 rounds. Total of 627 clinicians from 145 high case load hospitals were sensitized with two days package on the three 'I's and GeneXpert utilization at the begining of the year. The IPT coverage among the eligibe PLHIV has significantly improved from a very low baseline of 5.5% in 2006 EFY to reach 49.3% in 2007 EFY as shown below.

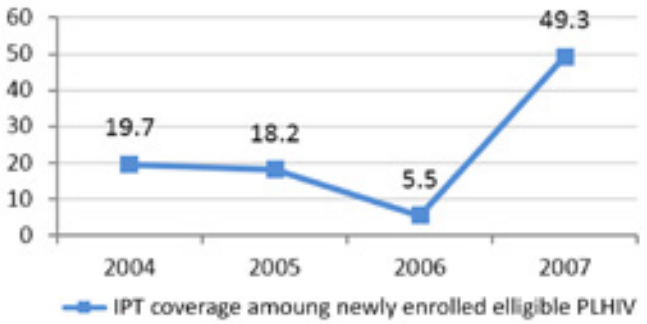

Figure 6. Trends of IPT coverage among newly enrolled elligible PLHIV 2004 -2007*

*The data source for the years 2004 -2006 EFY is TB/HIV Seninnel Seurveillance reports and for the year 2007 EFY is national HMIS report.

Discussions

Successful implementation of the NTP performance imrovement packages at national and regional levels has resulted in substantial improvements in TB case notification in Ethiopia. The notication rate has increased by 13.6% compared to the previous year's performance. This increament has happened for the first time since 2011, when there was an annual drop of TB case notifications of equal magnitude as this year's increment. Oromia, SNNPR, Dire Dawa and Tigray Regions were the best performers in successully implementing the improvent packages. The innovative use of the existing strong Maternal Neonatal and Child health monitoring platforms for tracking TB case finding initiatives in Oromia region as a regional improvement plan and the continued efforts exereted by intensive community TB care activities supported by TB REACH projects in SNNPR were among the leading contributors for the changes observed at national level. Besides these initiatives, effective implementation of the community engagement packages, the intensive follow up from national and regional level leadership with monitoring using the colored score cards, and improvements on TB case finding data quality through regular data quality assurance activities in major regions has also played significant roles in this positive changes in TB case notifications. The nationally set target for TB case detection has not been achieved mainly due to gaps in implementation of the improvement packages in all the regions. Of particular concern is the gaps in implementation of full community TB care packages in significant number of regions. Despite the development of clear improvement plan packages with emphasis on accelerated CTBC by almost all regions, the actual implementation of those packages during the year was not optimal in significant number of regions. The engagement of the political leaders to monitor

the implementation of regional improvent plans were not also satisfactory in most regions with the exception of Oromia, SNNPR, Tigray and Dire Dawa.

The TB service quality improvement initiative as measured by changes in TB treatment outcome, mainly by improvements in cure rates for bacteriologically confirmed PTB cases and improved coverage of core TB/HIV interventions has also been demonstrated during the year. The cure rate has reached over 75% for the first time over the last couple of years and the IPT uptake among eligible newly enrolled PLHIV has increased dramatically. The new model of sensitization of clinicians from ART and chronic care clinics on the three 'I's with particular attention to IPT and TB diagnosis with use of gene X-pert among PLHIV with presumtive TB appears to be working as it is seen in changes of IPT and X-pert utilization from previous years. This indicates that universal access to core TB/HIV interventions including IPT for elligible PLHIV at national level is within a reach with proper engagement of the frontline care providers and by addressing existing barriers based on evidences.

Conclusions

The declining trend of TB Case notification rate in Ethiopia has been stoped and reversed with a year-long implementation of NTP improvent packages in 2007 EFY. The community engagement packages, data quality improvent packages and innovative engagment of political leadership through exploiting existing platforms such as MNCH services for TB program monitoring were the key derivers. The use of colored score cards to monitor progress of such special initiatives has been found to be very useful.

Universal access to core TB/HIV interventions can be attained if targetted interventions with focus on high-yield health facilities were properly implemented. The implementation of accelerated IPT plan has yielded promising results.

The NTP, RHBs and partners should continue to adopt developement and implementation of annual TB control program improvent plans for prioritized program areas for sustaining the gains and to bring maximum impact in relatively short period of time.

COMBINED EFFORTS OF THREE CARDINAL BODIES IMPROVED MATERNAL HEALTH IN OROMIA

Dereje Dhuguma (MD), Planning, Budgeting, and Monitoring and Evaluation Process Owner, Oromia RHB, dered2010@yahoo.com

Background

With the favourable health policy of the country, the health sector has thrived to create healthy citizens through the collective efforts of the community, civil servants and government. The Oromia Health Bureau recently demonstrated the impact of collective effort by leveraging the community, civil service and government actors in health. The bureau initiated changes that reflect the underlying principles of the national health policy including reforms that address health seeking behaviours, health systems and health provision. This article describes the changes at the community level, at the civil service level and the health systems level. The investments made by the bureau were reflected in dramatic change in health indicators in areas in Oromia.

Community

Community involvement in Oromia consisted of organizing and establishing community level Health Development Armies (HDAs). Female community members are responsible for the lion's share of Health Extension package implementation. They use existing social and cultural institutions to create health awareness and enable citizens to produce their health (See text box). The established HDAs have their own plan, implementation and monitoring activities as well as evaluate performance at the individual, 1 to 5 networks and 'Gare' levels using the set criteria for HEP implementation measurement and by recognizing the best performers.

THE HOUSEHOLD PRODUCTION OF HEALTH

… is based on the notion that people value good health, that behavioral choices affect health status, and that these choices are shaped by personal, social, cultural and policy influences.

Source: DaVanzo, Julie and Paul Gertler. Household Production of Health: A Microeconomic Perspective on Health Transitions. Santa Monica, CA: RAND Corporation, 1990. http://www.rand.org/pubs/notes/N3014

Civil Servants

Civil servant reforms and Business Process Re-engineering (BPR) was implemented to revitalize the effort of civil servants and ensure quality health service and access to each segment of the population in the region. Through BPR, civil servants have owned the system through full participation in planning, implementation and monitoring process. In 2007 EFY, the regional Health Bureau has prioritized the HDA as a policy instrument, and civil servants have received intensive training on its effective implementation using the manuals developed for best practices of HDA. All health staff have their own plan that has been broken down to daily activities, and the Bureau regularly monitors the performance of civil servants and rewards the best performers. It has enabled staff to have shared responsibility, accountability and commitment in the provision of health services that will result in commendable health outcomes.

Government

In accessing quality health services to the community, the government has taken fundamental responsibilities in provision of comprehensive supportive, coordinating and monitoring the health system. The government commitment has been clearly exhibited through tremendous expansion of health facilities equipped with human resources, medical instrument and office furniture, logistics, drugs and basic infrastructures. Accordingly, the number of health facilities has amazingly increased in the last five years where 39 hospitals, 1,098 health centres and 6,052 health posts in 2003EFY has increased to 53, 1,320 and 6,519 respectively. Most of the health facilities have been staffed as per standard with appropriate professional mix, fulfilled with basic infrastructures like water and electricity, and necessary drugs and equipment. There is special attention and evidence based decision of the regional government. For instance, the number of health centres with water and electricity was increased as compared to the previous years. Additionally, the government has decided to hold woreda budget with the 180,000.00 birr per health centres at regional level to purchase and distribute drugs and medical supplies. There is a strong partnership established with PFSA since 2004EFY.

To this end, the efforts of HDA, Health Extension Workers and health workers at facility levels have brought remarkable achievements in major health services. As indicated in Fig. 1, maternal health services has shown great improvement over the last five years where skilled delivery and postnatal services has increased from 12% and 41% in 2003 to 73% and 98% in 2007 respectively.

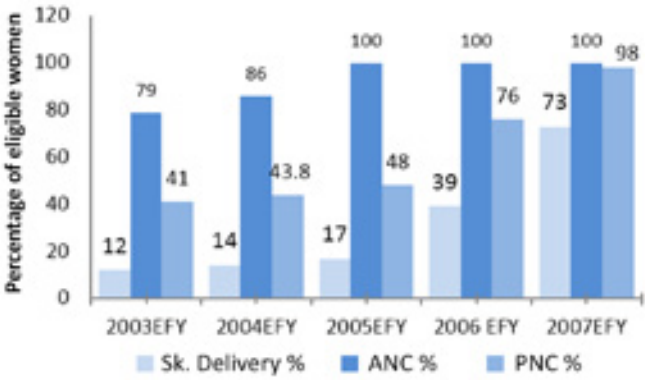

Figure 1: Percentage of women using skilled delivery, antenatal care and prenatal care in Oromia, 2003-2007EFY

Generally, community-based achievements and success in service provisions have been mainly attributable to the following strategies executed at different levels.

These strategies are:

- Listing of all pregnant mothers with their Expected Date of Delivery and follow them for antenatal care (ANC), delivery at health facilities and prenatal care (PNC) services.
- Conducting regular pregnant mother's conference twice a month, to create awareness about the advantages of attending ANC, PNC, having skilled delivery, and providing information and education on the danger signs of labour, advantages of breastfeeding and supplementary foods, etc.
- Listing all reproductive age groups who are eligible for family planning services at the kebele (community) and Health post (HP) levels and follow them to offer services.
- Identification of the number of infants (under

the age of one) and support to their families to immunize them as per Essential Package of Immunization (EPI) schedule.

- Involvement of communities in mother-support activities such as transporting labouring mothers to health facilities using traditional ambulance, contributing money and variety of food items to make homelike environment in the health facilities.
- Availing waiting room (Home like environment) for pregnant mothers including kitchen for cooking food

What do we learn from civil servants?

Bisidimo Hospital has taken civil service reform and transformed its meaning. Starting in 2005 EFY. Bisidimo Hospital has gone beyond just implementing the revised civil service reforms but launched a dramatic change in the work environment and community in their catchment area. They recognized that the behavior of health providers and administrators depends on their environment, which includes the physical infrastructure as well as management practices and support to staff. Staff were encouraged to identify major health system issues, managerial and health problems and worked to develop strategies to resolve them.

The entire health staff and the surrounding community came together in discussions organized by the Hospital and all-round training was provided for all the staff and concerned bodies. Agreement was made on what, how, when and by whom reform measures were to be taken. The practice of bringing people from all levels together, providing a common forum to evaluate and resolve issues create a transformative work environment. There was a sense of common purpose both within the staff and between staff and the surrounding community. There is good relationship and companionate norm among all staff and surrounding community. Every one became happy to work towards those all gaps. The improved work and community climate was reflected in improvements in service delivery (satisfying their client in all services) and mobilizing & involving the community in the prevention and control of disease.

Beyond reforms that affected the availability of services the hospital took leadership in addressing some of the social and economic determinants of health. The hospital has established diversified income generating activities for their surrounding community. These include cattle fattening, provide car maintenance services, cereals cultivation, cultivating vegetable and fruits, making shoes for physically handicapped people. These activities generate income for the hospital as well as the community and enable the hospital to fulfill necessary materials and improve service quality.

By investing in the work environment and expanding the meaning of health from mere service provision to taking part in the production of health, the hospital has become more inviting and much more interesting for its staff and the people it serves. As such it is an example for the rest of Hospitals in the region and beyond. The Regional Health Bureau took its work as a best practice and will scale up to the other Health Offices and Health Facilities in the region.

Conclusion

In conclusion, we find evidence that real investments in the factors that affect the production of health can lead to significant changes in health outcomes. In Oromia, these investments were made at the community level, and at the civil service level through a best practice scale up.

FERTILITY AND FAMILY PLANNING OVERVIEW IN ETHIOPIA

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Berhane Assefa, Family Planning Case Team Leader, MCH, fpcoordinator.mch@gmail.com,

Population

The size of Ethiopian population was 40 million in 1984. This figure increased to 53.4 million in 1994 and further to 73.7 million in 2007. Based on the 2012 Inter-Censal Population Survey (ICPS), the total Population size of the country as of July 2014 is estimated to be 87,952, 000.

Women in child bearing /Reproductive age

The women of reproductive age (WRA) refer to the number of women able to give birth (aged15-49 years on average) in a country/region at a given time. This number is an important determinant of population growth as well as the demand for contraception, as only women of reproductive age are at risk for pregnancy. The total size of reproductive age women in Ethiopia was 12.2 million in 1994, and increased to 20.7 million in 2012.

Trends in the size of Reproductive Age Women Ethiopia by Census Years
Source: CSA, Reports of the 1994 and 2007 Population and Housing Census and the 2012

Women's Age at first Marriage

The median age at first marriage among women in Ethiopia has risen very slowly and slightly over the last three surveys, from about 16.4 years in 2000 to 16.5 years in 2005 and to 17.1 years in 2011, an increase of 0.6 and 0.7 percentage points for the period of 2005-2011 and 2000-2011, respectively. The median age at first marriage is an important determinant of fertility and therefore of population growth. Increases in the median age of first marriage reduce the length of time women of reproductive age are exposed to pregnancy.

Women's Age at First Sex

The median age at first sexual intercourse has increased over the past three surveys from 16.4 in 2000 to 16.5 years in 2005 and to 17.1 years in 2011 for women age 20-49. The past three surveys have shown urban women have their first sexual experience at somewhat later ages than rural women. As we see, in Ethiopia the median age of first marriage and age at first sex are identical which implies that sex largely occurs in the context of marriage. Women's age at first sex rises with higher education and wealth.

Fertility

It is the natural human capability of producing offspring. Fertility is one of the most important components of population dynamics determining the size and structure of the population, the well-being of mothers as well as their offspring. High fertility and especially shorter birth intervals affect the survival of children and the health status of mothers.

Fertility levels are measured largely by Total Fertility Rate (TFR).

Total Fertility Rate (TFR) is the average number of children that would be born to a woman by the time she ended childbearing according to the existing fertility levels if she were to pass through all her childbearing years. Total fertility rate is a more refined measure of the level of fertility than both the crude birth rates as it refers to births per woman as opposed to the population. The general fertility rate is an age specific birth rate while the total fertility rate is an age/sex adjusted birth rate which makes it possible to compare with other total fertility rates as long as the age groups are similar in the calculation. The TFR in Ethiopia decreased from 5.5 children in 2000 to 5.4 children in 2005, and then decreased further to 4.8 children in 2011. According to mini EDHS 2014[6] , the TFR for Ethiopia for the three-year period preceding the survey is 4.1 children per woman. The TFR in rural areas exceeds the TFR in urban areas by more than two children per woman (4.5 and 2.2 children per woman, respectively).

Family planning

Whereas family planning regulates the number and timing of pregnancy, it is an indispensable tool for the improvement of the health and well-being of mothers and their children. In addition to these it is one of the major strategies of harmonizing population growth with socio-economic development through balancing family size with individual economic capacity. By providing women and couples a way of regulating their fertility, modern contraception is an important means for families to be able to invest in the quality rather than quantity of their children.

Ethiopia's family planning programme dates back to 1966, with the establishment of the Family Guidance Association of Ethiopia. Despite these long years of history, access to family planning was limited to major urban areas. With the advent of the Health Extension Program (HEP) in 2004 access to FP services increased dramatically, resulting in an unprecedented increase in contraceptive prevalence rate (CPR) over the last decade.

Knowledge of Contraceptive Methods

According to the mini EDHS 2014, the overall knowledge of contraceptive methods among currently married women has increased from 86 percent in 2000 to its current level of 97%. However, knowledge about IUD and implants has increased by 41 percent and 8 percent, respectively, while knowledge about male condoms decreased by 10 percent, over the same period.

[6]Central Statistical Agency, Ethiopia. 2014. Ethiopia Mini Demographic and Health Survey 2014. Addis Ababa, Ethiopia

Contraceptive Prevalence Rate (CPR)

The measure Contraceptive Prevalence Rate (CPR) provides information on the utilization of contraceptive methods in an area, which is an indication of the proportion of women who have a lower risk of conception at a given time. It is defined as the percent of reproductive age women who are currently using a method of contraception (either modern or traditional). Starting in 2012, the FP2020 initiative[7] has focused on the percent of women of reproductive age who (including women in union and unmarried/not in union women) are using modern methods of contraception. When all women of reproductive age are included in the calculation, the CPR is usually lower than the CPR calculated only for women in union. The modern method CPR (not including traditional methods) in 2014 for all women was 26%[8]. Tracking modern method use is useful as it provides the most reliable protection against unintended pregnancies, while tracking this indictor for all women, allows planners to understand and program for use among even unmarried couples. Based on the all women CPR, a total of 1.69 million unintended pregnancies were averted due to modern method use[9].

There is a five-fold increase in the use of any method of contraception by currently married women, from 8 percent in 2000 to 42 percent in 2014. CPR among currently married women increased in the last three years, from 29 percent in 2011 to 42 percent in 2014.

Figure 1, shows the predominance of injectable contraception compared with long-acting family planning methods, which include IUDs and Implants. 31% of currently married women use injectables in Ethiopia, representing 74% of the methods in use. However, although the overall use of implants continues to be low, its use has increased in the last 10 years from less than one percent (0.2%) in 2005 to 5 percent in 2014.

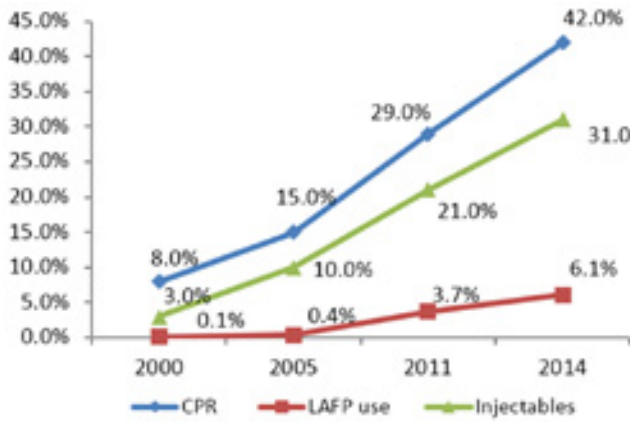

Figure 1: CPR, share of injectables and LAFP (Implant and IUCD) use among married women, 2000 - 2014
(Source: EDHS 2000, 2005, 2011 and Mini EDHS 2014)

Unmet Need for Family Planning

Women with unmet need are those who are fecund and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child[10]. The concept of unmet need points to the gap between women's reproductive intentions and their contraceptive behavior.

There has been encouraging changes in unmet need for family planning over the last years. In 2000 the country had an unmet need level of 36 percent among currently married women. This declined to 34 percent in 2005 and further to 25 percent in 2011. Unmet need is higher among rural women (37.3, 35.8 and 27.5 percent, respectively)) than among urban among women (25, 17 and 15 percent, respectively) in the previous three surveys of 2000, 2005 and 2011.

PERFORMANCE OF PUBLIC HOSPITALS USING SELECTED KEY INDICATORS

Habtamu Milkias, Medical Service Directorate, MOH

Introduction

The Ethiopian Hospital Reform Implementation Guidelines (EHRIG), adopted from the Blueprint Standards for Hospital Management of 1995 EFY, and piloted for three years, was launched in 2002 EFY. The EHRIG describes a minimum set of 124 standards for the improvement of the hospital management and the clinic services. By 2004 EFY, only about 27 hospitals (22.5%) of 120 hospitals in the country were implementing EHRIG. However,

[7]Family Planning 2020. Downloaded from http://www.familyplanning2020.org/about
[8]FP2020 Consensus Meeting, Addis Ababa, June 2014
[9]FP2020 Consensus Meeting, Addis Ababa, Ethiopia, June 2014.
[10]WHO. Unmet need for family planning, Downloaded from http://www.who.int/reproductivehealth/topics/family_planning/unmet_need_fp/en/

by 2005 EFY, all the 120 hospitals were measuring the progress towards hospital reform using the EHRIG checklist.

Based on the data from 2004 EFY (n=27 hospitals) and 2007 EFY (n=120 hospitals) assessments, there is a steady increase in the national average achievement of EHRIG standards up from 61.7% to 83%, with Afar, Harari, Somali and Amhara regions showing dramatic improvements. Below we describe the level of achievements of some of the hospital reform standards.

Figure 1: Comparison of regional EHRIG attainment in the year 2004 vs 2007 EFY

Outpatient waiting time to treatment

The national target for outpatient waiting time to treatment is below 60 minutes. The national average outpatient waiting time has trended down from 65 minutes at the beginning of 2004 EFY to about 44 minutes towards the end of 2007 EFY. However, in 2006 EFY, the average outpatient waiting time in the hospitals in Amhara and Dire Dawa were found to be above 80 minutes.

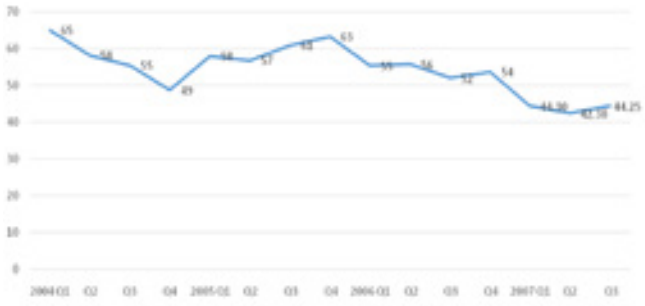

Figure 2: Quarterly average outpatient waiting time to treatment 2004 – 2007 EFY

Percentage of emergency room patients staying for greater than 24 hours

The national standard is to have less than 24 hours patient stay in the emergency room; patients who need longer than 24 hours treatment should be transferred to an inpatient ward. In 2004 EFY, 30% of those hospitals who started reporting on emergency room patient stay were able to discharge emergency patients within 24 hours. In 2006 EFY, 52% of all the hospitals achieved the target, and the maximum number of patients who stayed longer than 24 hours in emergency bed was 22%; but this percentage increased slightly in 2007 EFY, especially in Addis Ababa.

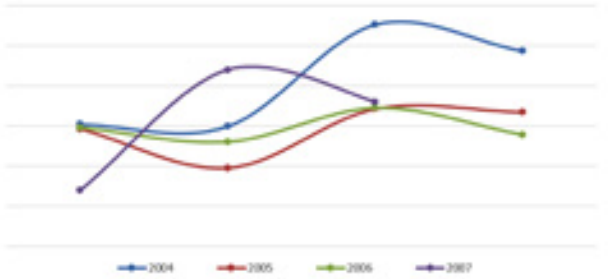

Figure 3: Percentage of emergency room patients staying for › 24 hours, 2004 – 2007 EFY

Inpatient mortality rate

The inpatient mortality is a measure of the quality of care provided by a hospital. Usually it is preferred that inpatient mortality remains below 5% accounting mostly for the unavoidable deaths in the hospital. This is also the national target. The inpatient mortality rate has been kept below 5% over the years since 2004.

Bed Occupancy Rate

Bed occupancy rate (BOR) is a measure of the efficiency of inpatient services. Hospitals are most efficient at a BOR of 80 - 90%. If the bed occupancy rate is lower, resources may be wasted. If the bed occupancy is higher than 90% there is a danger of staff burnout and of over-crowding during sudden increases in demand for services.

In 2004, the average bed occupancy rate was around 54% while in the third quarter of 2007 it rose up to an average of 59%. Nevertheless, still a lot more is needed to be accomplished in order to achieve the acceptable range of 80 to 90%.

Among the regions, higher bed occupancy rates are observed in regions like Addis Ababa, Amhara and Dire Dawa which are closer to 80% on average; whereas, in Oromia, SNNPR, Benishangul, Gambella and Afar, the bed occupancy rate is 60% on average.

Average Length of Stay

Average Length of Stay (ALOS) refers to the average number of days patients spend in a hospital and is a measure of hospital efficiency. Longer stays are associated with unnecessary waste of resources. The evaluation data shows that, the quarterly average length of stay didn't exceed 7 days in the past four years. In 2004 EFY, the average length of stay was

around 6 days and by 2007, it came to an all-time low of less than 5 days.

Stock out duration of hospital specific tracer drugs

In terms of reporting of stock outs of tracer drugs, 72% of hospitals were reporting in 2004 EFY; this rate improved to 95% in 2005 EFY and then to 100% by 2006 EFY. In 2004 EFY only 6 hospitals (15%) reported zero stock out. In 2005 EFY, this increased to 18 (45%) hospital while in 2006 EFY 13 hospitals (32%) managed to keep the stock out duration to zero days. The rest of the hospitals had at least 1 stock out day of any of the tracer drug.

Major surgeries per surgeon

Data from hospitals show that in 2004, nationally, the average number of major surgeries per surgeon in years 2004, 2005, 2006 and 2007 the figures are 44.6, 35.4, 33.4 and 66.4 respectively. In general, it can be concluded that surgeons are not so much productive compared to the delay patients are facing to undergo surgery.

Delay for elective surgical admission

Long delays in surgery are associated with high morbidity and mortality. Data on delay for elective surgical admission over the past four years from hospitals indicate that in 2004, nationally, surgical patients waited for 2 weeks on average before they had surgery, . In the years 2005, 2006 and 2007 the figures were 17, 15 and 14 days respectively.

Staff Satisfaction

Hospitals should strive to provide a good working environment for employees, with opportunities for training and development and equitable remuneration. Employees who are satisfied with their working environment are more productive and provide higher quality of care. This indicator is by far the least measured indicator in the three years. Nationally, the average staff satisfaction in 2005 was 6 out 10 while in 2006 it slightly increased to 6.4. In 2007 it is 6.7 on average.

Patient Satisfaction

Patient satisfaction with the health care they receive at a hospital is a measure of the quality of care provided. Patient satisfaction didn't vary much and revolved around 8 out of 10 in all of the four years. The average patient satisfaction doesn't vary much by regions either. The lowest score is seen in Gambella which is 5.5 while the highest is observed in Addis Ababa which is 8.7 out of 10.

Establishment of emergency patient triage on arrival

Since 2005 EFY, the FMOH and all RHBs have established Emergency and referral structures in their respective hospitals. Emergency and triage equipment were also provided to 30 hospitals. Proportion of patients triaged within 5 min. of arrival at emergency room, Emergency Room mortality rate and referral of patients by the emergency room are used to monitor the performance of Emergency services. Over the years the performance of Emergency Rooms has improved considerably as show in the table below.

Table 1: Performance of selected indicators from 2004-2007EFY

Table 1:
Performance of selected indicators from 2004-2007 EFY

Selected Indicators	2004	2005	2006	2007
Proportion of patient triaged within 5 minutes of arrival at Emergency Room	51%	64%	93%	0.00%
Emergency room mortality rate	0.60%	0.61%	0.2%	0.00%
Emergency referrals as a proportion of all referrals	26%	44.00%	29%	0.00%

Section 2:
Best Practice

CONSENSUS BUILDING DISCUSSION WITH MOTHERS TO INCREASE INSTITUTIONAL DELIVERY: **LESSON FROM ATSIBI WENBERTA WOREDA, TIGRAY**

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[1]Health extension and Primary Health Service Directorate, MOH

Problems

The MOH has made institutional delivery a priority to improve the health of mothers and children and this intervention is linked to reducing mortality and morbidity in these populations. The focus of this brief is on interventions used to expand institutional delivery among women in the Atsibi Wenberta Woreda. At baseline, the district identified that MCH received least priority by the existing local leadership. Local leadership lacked understanding of the scope of the problem which was underscored by the lack of data on and tracking of key indicators including the number of births by place (home or health institution) and pregnancy related maternal death. A secondary but significant issue was the lack of perceived access to health services within this community. Health institutions at baseline were not prepared and equipped with the necessary human resources and supplies to run essential health services. Further, rather than working to improve community awareness and mobilization at grass root level, HC professionals used to wait and help laboring mother who came to HC herself. Poor provider attitudes and negative behavior during provision of maternal health services and lack of cleanliness of delivery rooms reflected the general indifference to these populations.

Pregnancy and childbirth in most communities is heavily intertwined with religious and cultural practices, preferences and taboos. In traditional societies where home delivery is very common, changing that practice is especially difficult. In addition, several taboos restrict the movement of women during pregnancy, labour and delivery. In this woreda, for example, there is as strong tradition that pregnant mothers should not be part of any

community gatherings or public media, which hinders mothers form seeking institutional delivery. The majority of community members also believed that 'St. Mary' presence, which makes the outcome of labor good is only possible in the home environment. Hence, institutional delivery was not favored by the community. The other important identified barrier was, the fear of among women that would miss the traditional ceremony, which can be held at home, and which may not be to practice in health institutions. In most societies, it is important of parents to care for the new mother and community members were not sure if that was possible in health facilities. Hence, while facilities and health administrators did not prioritize institutional delivery, there was also a lack of demand for such facilities as clients were unsure how these facilities would welcome their family and permit them to incorporate important traditions relating to childbirth

Process of implementing the best practice Consensus building discussion

The implementation of this best practice planned to increase uptake of institutional delivery was started in 2003 EFY. This is the time the woreda formed the Women Development Team (WDT). The woreda documented lessons in the improved performance of institutional delivery through the effort made in the form of community mobilization by WDT. Then, the woreda set a goal of 'zero home delivery' as of 2006 EFY" and started implementing in all Kebeles.

Steps of implementation

Reaching Consensus with pregnant women means, providing health messages to pregnant women through multiple means (women development team and /or a network of 1 to 5 household where the model household strives to scale up desired health behavior into its team members) such that they would both understand the value of institutional delivery and feel supported in facilities by providers.

As part of the intervention, a health extension worker (HEW) and a WDT leader arrange up to three home visits. The purpose of these visits was to improve a mother's awareness of maternal and child health. The discussant of these meetings includes the husband, their adolescent children, and other influential household members. Some of the attendants of the household discussion include parents of the spouse, neighbors, Religious leaders and traditional birth attendants (TBAs).

Content of the discussion and necessary supplies

The consensus building discussions were held at home of the pregnant women. The team has discussion points developed by the Woreda Health Office in local language, Tigrigna. The Family Health guidelines and other important supplies were secured ahead of the meetings. The team has a responsibility to verify whether the pregnant women received the necessary health messages on her birth preparation from the 1 to 5 network leaders or WDT. On top of this, the team should let her learn about the number of antenatal care (ANC) visit the mother need to have in the nearest health facility, pregnancy related health problems, and danger symptoms of pregnancy during pregnancy and postnatal period. And the team discusses with the mother where she planned to give birth. Such discussions were facilitated for about three sessions during a mother's pregnancy period. Then, the team members and the pregnant women should fill and sign on the prepared format showing the health services and status of the pregnant women.

Finally, the pregnant woman, her husband, leader of WDT and delegate of the local party administration ensured that whether the mother get adequate health messages and agreed to give birth in health facility. All participants of the last discussion are expected to sign the form. A copy of signed form is left with the pregnant mother and the other copy is kept in the Health Post.

Importance of the discussion and filling the consensus building form

There are evidences, which show the benefit of completing the consensus building form. Some of the documented contributions of using this form include: firstly, it helps for the HEWs to properly monitor the performance of 1 to 5 networks leaders with regards to the care or counseling they deliver for pregnant women in their respective catchment areas; secondly, it helps to identify the challenges a pregnant mother faced from her husband or other influential persons despite the counseling/ education she got from her 1to5 network leader, and to properly address by the HEWs who are believed to have better communication skills; thirdly, the filled and signed form would help her remind to prepare for institutional delivery. This activity played significant role in the effort to see 'home delivery free' community.

Since the woreda health office aspires to create "home delivery free kebeles" through achieving 100% institutional delivery, it has also introduced a daily home delivery reporting system. The reporting form consist of name of the Development team, village, name of the pregnant mother, history of home visit by WDT leaders and HEWs (consensus building discussion), reason of mother for home delivery and attendants of the labor. The complete forms were submitted to the nearest health center after verified by HEWs and head of the Kebele.

Achievement

The major reason behind this successful best practice was the consensus building discussion held with pregnant mothers. The discussion helps to identify problems and suggest prompt solutions. The evidences identified in an assessment done by the woreda health office are described here below:

All pregnant women who live in the woreda and their household members were received the necessary health information/ counseling services on maternal and child health issues through the consensus building discussion scheme. The number of household member who provide support for pregnant women significantly increased due to the consensus discussions. For instance, pregnant mothers relieved from labor demanding household activities, improved access for balanced diet, and mothers were encouraged to attend ante-natal care. Some of the challenges and the solutions documented from 1800 pregnant women are presented below:

- Due to farness of the health facilities and a belief of unless serious health condition occurred about 816 pregnant mothers were planned to give birth at their home.
- 659 pregnant mothers were worried about their family members for the duration of time they spent in the health institutions.
- 273 mothers feel they lack the support of their spouse, parents and neighbors and fear their influence for she visit health facility without illness.
- 84 pregnant mothers had fear of injections, and feel embarrassed to expose their private body parts.
- On top of this, there was a traditional believe in the community. If a pregnant mother visits public areas, the pregnancy can be terminated. More specifically, the belief which prohibits pregnant mothers to joint other pregnant mothers challenged the ANC service.

The reasons listed above and other similar problems were addressed systematically with WDT and the 1 to 5 household networks. The consensus building discussions held with every pregnant mother were also help to give proper solutions. With the efforts made, 1800 mothers who had planned to give birth at home for different reasons received the necessary support and shifted to deliver in the health institutions.

According to the eleven month report of the woreda health Office, only 8 mothers gave birth at home in 2007 EFY. This is a remarkable achievement in so short space of time, given that at baseline, 2,520 gave birth at home. Among the eight, four mothers faced strong opposition to institutional delivery from household members who were not the part of proper individual based consensus building discussions and the other four mothers gave birth during transport to the health institution within the Ambulance. The above investigated cases clearly show the advantage of empowering women and their families with good information, using the resources of the woreda well, and making safe delivery a priority practice. The line chart below clearly depicted the outcome of the best practices.

Fig 2.1 Number of mothers who gave birth at home and Health institutions by year

Figure 1 depicts the sharp decline of mothers who give birth at home from 2002 to 2007EFY (eleven months). Specifically, eight home delivery reported in 2007EFY were reported from three out of 28 kebeles of the woreda. Fortunately, the rest 25 kebeles were declared home delivery free status. On the other hand, the number of institutional delivery increased significantly from time to time. In summary, this intervention of consensus building with active support of HEWs and the network enabled the woreda to declare universal home delivery free of 25 kebeles.

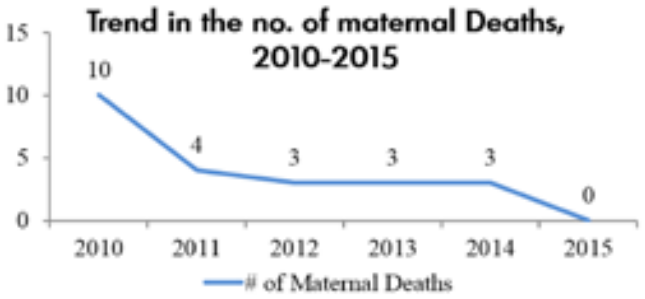

Figure 2.2 Pregnancy related death of mothers, 2010-2015 (first 6 months)

Factors of Successful Best Practice At Community Level

Establishing women development team (WDT) at every Kebele level in 2003 EFY support the woreda in identifying the existing negative attitudes in the community and addressed systematically to improve the culture of supporting each other among mothers. On top of this, mothers were encouraged to establish local saving scheme (ikub) draw the winner on weekly bases, help pregnant mothers to discuss other social issues, mainly health. These social gatherings help women to review their performances right after they finish the Ikub. The scheme helps women to share their experiences among each other. The number of mothers who avoid seeking health service shows significantly reduction from time to time.

Members of the saving scheme (i.e. WDT members) grant lamp some of the money as a social support for pregnant mothers for their delivery related costs. Furthermore, the social mobilization activity conducted in every structure, specifically religious leaders took responsibility to teach institutional delivery to their God daughters. TBAs were involved in the discussions and get their commitment to encourage mothers in following ante-natal care and plan for institutional delivery.

Using the existing structures and media, the WoHO developed stories on reported maternal deaths associated with home delivery. These real stories help the woreda to show magnitude of the problem and get enthusiasm of the community. Due to all these efforts the residents of all kebeles often say "the grave of a mother is open from pregnancy to spending her 42nd day after birth".

Health center

Health professional working in health center has got training on ethical principles and benefits of faithful service provision. Review meetings were facilitated. Health workers were advised to improve their client

handling behavior. At least two midwives were assigned per each health center. Each health workers assigned to follow a specific kebele and expected to provide technical support to WDT and HEWs.

Woreda Health Office

Trainings and review meetings were facilitated for woreda health office staff. The trainings were about provision of loyal services to pregnant women. On top of this, the woreda health office has identified the season of high home delivery rate i.e during the summer season. To properly address this challenge, a special plan was developed.

Some of the problems identified to get institutional delivery during the summer were the rough road become inaccessible because of flooding; staff of the health centers and HEWs used to engage in planning activity. The implementation of special summer plan ensures the implementation of uninterrupted institutional delivery and access to material and child health care. Furthermore, the woreda council assigned fulltime experts who follow the maintenance of rough road washed away during the summer rain. In case of completely inaccessible areas, the development team prepared young people who can transport pregnant mothers to the nearest health center using local stretcher. Health centers are well prepared and fully equipped with the necessary supplies to serve laboring mothers.

The Woreda Health Office received technical support from Development Partners (i.e. World Vision, L10K, and IFHP). The support of these development partners includes planning and implementation of targeted activities. Such cooperation ensures utilization of limited resources to high impact activities

Recommendations to scaling up this best practice

Such best practice shall be scaled up to every community in our country. However, the following conditions should be availed to get similar outcomes: establish strong women development team; make sure that health extension workers are committed; strong linkage is established between health center and satellite health posts; and the presence of strong command post structure and strong organizational structure at all levels.

ESTABLISHMENT OF NEONATAL INTENSIVE CARE UNITS IN ELEVEN GENERAL HOSPITALS IN TIGRAY REGION, ETHIOPIA, AUGUST 2015, MEKELLE

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Introduction

Globally, about 4 million children die in the first 4 weeks of life every year. A similar number of babies are still born. There are huge disparities that 99% the neonatal deaths occur in low income and middle-income countries and about half of the deaths occur at home. Millions of newborns who die every year are due to easily preventable causes.

It is estimated that about 75% of neonatal deaths could be avoided with simple, low cost tools that already exist such as antibiotics for pneumonia and sepsis, sterile blades to cut the umbilical cords using knit caps and kangaroo care to keep babies warm.

In Ethiopia, about 81,000 babies die every year in the first four weeks of life. This accounts for 42% of all deaths in children younger than five years of age. The risk of death is highest in the first 24 hours of life when more than half of deaths occur and about three- quarters of all neonatal deaths occur within the first week of life. Because a woman health is very closely linked with that of her fetus and newborn many of the cause of maternal death and ill health also have high impact on the health and survival of the neonate.

Generally, real progress in reducing deaths of newborn babies in a country with highest mortality like Ethiopia demands a higher coverage of optimally standard neonatal services with special focus to the poorest segment of the population and at the time of greatest risk, which is at birth and in the first few days of life. Tigray Regional Health Bureau (RHB) has

given due attention to the reduction of preventable neonatal deaths by establishing and strengthening the Neonatal Intensive Care Unit (NICU) in all hospitals of Tigray region. Therefore, this document will highlight the interventions made and results achieved to date.

Objective

The main objective of the document is to highlight the performance achieved, challenges faced and solutions given in the establishment of NICU in eleven hospitals of Tigray Regional state.

Equipping the hospitals with necessary materials

In collaboration with the MOH, the Government of the Tigray Regional State and different partners, the Tigray RHB has made all necessary steps towards equipping the hospitals with all important materials and supplies so as to make the NICU functional in order to save the lives of newborns. The tables and figures below give the availability of different materials per hospital.

Table 1:

Availability of equipment & utilities in each of the hospital, Tigray RHB, Aug 2015, Mekelle

		Name of Hospitals													
SN	**Item Description**	**Ayder**	**Mekele**	**Adigrat**	**St.Mary**	**Lelem Karl**	**Wukro**	**k.Abera**	**Mearg**	**Suhul**	**AbiAdi**	**Alamata**	**Maiany**	**Korom**	**Total**
1.	Incubators	28	4	3	3	2	1	4	2	1	1	2	0	0	51
2.	Radiant warmers	5	1	0	3	1	1	2	2	4	1	1	0	0	21
3.	Phototherapy machine	5	0	3	5	2	1	3	2	3	0	0	0	0	24
4.	Bubble CPAP	2	3	0	0	0	0	0	0	0	0	2	0	0	7
5.	Newborn beds	25	2	4	0	7	10	2	5	13	8	10	0	0	86
6.	Kangaroo mother beds	7	2	3	4	2	4	4	0	6	1	5	0	0	38
7.	TV/deck	1	0	1	0	1	0	0	0	0	0	0	0	0	3
8.	Computers	1	1	1	0	1	0	0	0	0	0	0	0	0	4
9.	Bath room	0	1	2	1	1	1	2	0	1	1	1	0	0	11
10.	Running water	0	0	yes	yes	yes	yes	0	0	yes	yes	yes	0	0	7
11.	Antiseptics	0	0	30	1	0	1	0	1	2	0	0	0	0	32
12.	Glucometer	2	0	0	0	0	0	0	0	0	0	0	0	0	2
13.	Monitoring machine	8	0	0	0	0	0	0	0	0	0	0	0	0	8
14.	Electrical & manual suction machine	10	0	0	0	0	0	0	0	0	0	0	0	0	10
15.	Mechanical ventilation	1	0	0	0	0	0	0	0	0	0	0	0	0	1

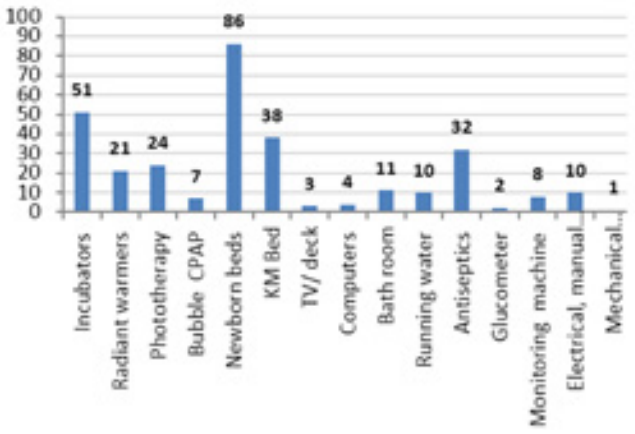

Figure 1: Aggregate availability of equipment & utilities in all the hospital, Tigray RHB, Aug 2015, Mekelle

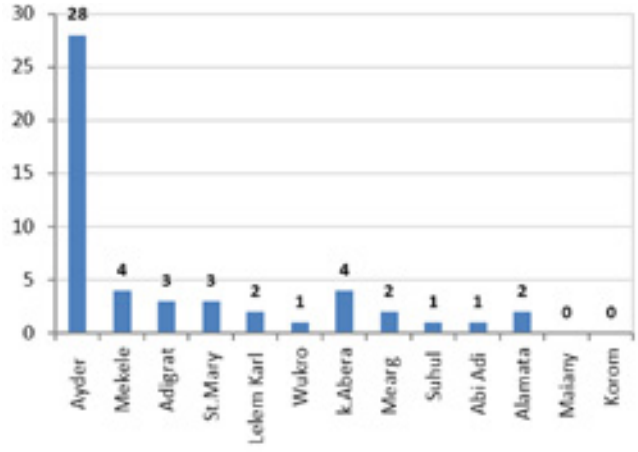

Figure 2: Availability of Incubators in each of the hospital, Tigray RHB, Aug 2015, Mekelle

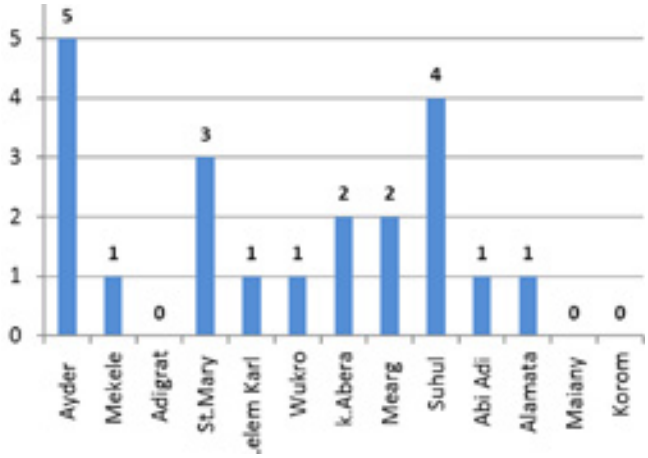

Figure 3: Availability of Radiant Warmers in each of the hospitals, Tigray RHB, Aug 2015, Mekelle

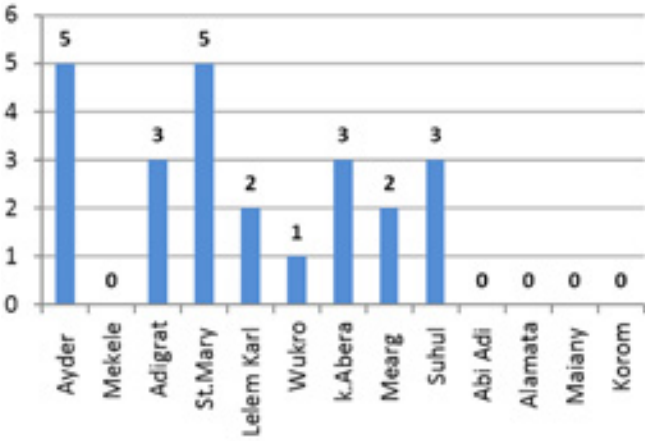

Figure 4: Availability of Phototherapy in each of the hospitals, Tigray RHB, Aug 2015, Mekelle

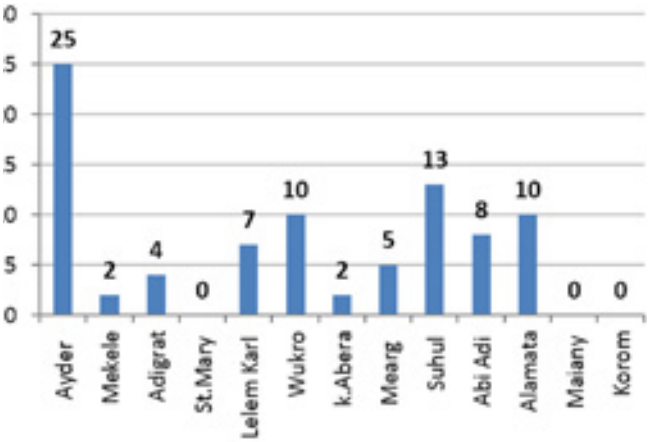

Figure 5: Availability of Newborn Beds in each of the hospitals, Tigray RHB, Aug 2015, Mekelle

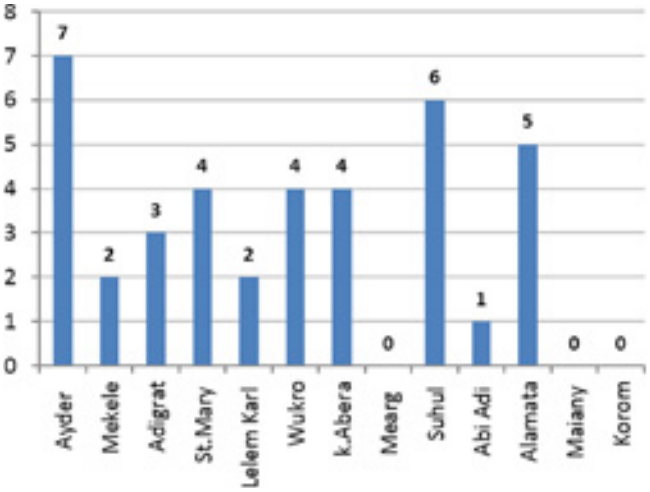

Figure 6: Availability of Kangaroo Mother Beds in each of the hospitals, Tigray RHB, Aug 2015, Mekelle

SERVICE PROVIDED IN THE NEONATAL INTENSIVE CARE UNIT

Majority of the hospitals are showing encouraging progress in the provision of Neonatal Intensive Care Unit service, hence saving the lives of newborns. With some limitation they have, Adigrat, Ayder, Wukro, St Mery, Alamata, and Lemlem Karl hospitals are relatively providing good NICU services based on the minimum standards. Mekelle hospital is in a process of improving its services. However, KahsayAbera, Me-areg, Sehul and Abie-Adi hospitals have low performance that needs further attention, continuance follow up to establish NICU and to strengthen the services. The following graphs & tables show the performance of each hospitals except Mayany & Korem hospitals that their reports are not included here due to computer error.

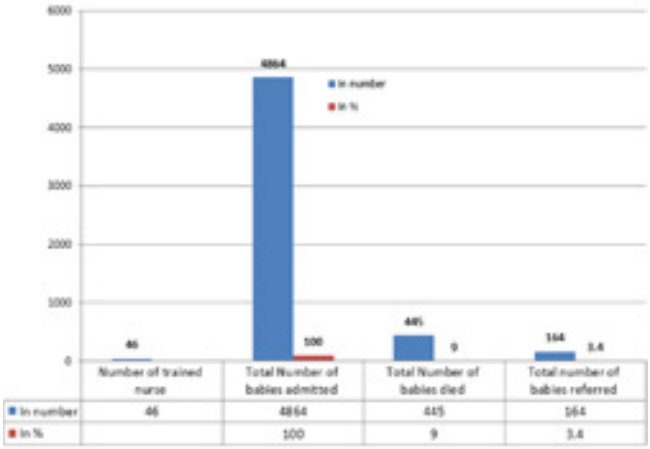

Figure 7: Aggregate number and % of services provided in the 11 hospitals, Tigray RHB, Aug 2015, Mekelle

Table 2:

Neonatal Service Performance in each of the hospital with NICU, Tigray RHB, Aug 2015, Mekelle

SN	Activities		Name of Hospitals													
			Ayder	Mekele	Adigrat	St.Mary	Lelem Karl	Wukro	k.Abera	Meareg	Sehul	AbiAdi	Alamata	Maiany	Korom	Total
1.	Number of trained nurse		4	4	4	7	3	5	5	5	0	5	4	0	0	46
2.	Total Number of babies admitted		1329	252	300	732	492	367	346	64	485	242	255	0	0	4864
3.	Total Number of babies died		163	5	14	56	63	21	9	8	62	27	17	0	0	445
4.	Total number of babies referred		0	86	5	8	6	11	3	0	0	34	11	0	0	164
5.	Number of babies Bwt< 2000-2500	Total Admi	184	0	97	122	42	98	66	0	0	39	29	0	0	677
		survived	160	0	97	118	36	96	66	0	0	35	29	0	0	637
		died	24	0	0	4	6	2	0	0	0	4	0	0	0	40
6.	Number of babies 1500-1999	Total Admi	159	52	15	171	76	131	14	5	0	14	10	0	0	647
		survived	130	49	13	158	65	121	14	2	0	14	9	0	0	575
		died	29	3	2	13	13	8	0	3	0	0	1	0	0	72
7.	Number of babies 1000-1499	Total Admi	55	25	9	147	54	34	6	1	0	5	13	0		349
		survived	25	19	7	132	46	25	5	1	0	4	11	0	0	275
		died	30	6	2	15	8	9	1	0	0	1	2	0	0	74
8.	Number of babies less than 1000	Total Admi	26	9	4	7	4	2	3	1	0	0	6	0	0	62
		survived	5	0	0	3	1	0	2	1	0	0	3	0	0	15
		died	21	9	4	4	3	2	1	0	0	0	3	0	0	47
9.	Number of babies with Sepsis	Total Admi		138	166	431	229	321	66	50	262	89	179	0	0	1931
		survived		132	166	402	211	321	66	47	239	75	174	0	0	1833
		died		6	0	29	18	0	0	3	23	14	5	0	0	98
10.	Number of babies with Asphyxia	Total Admi		5	24	65	0	321	219	2	6	12	11	0	0	665
		survived		5	18	49	0	321	226	2	0	9	8	0	0	638
		died		0	6	16	0	0	0	0	0	3	3	0	0	28
11.	Number of babies MAS	Total Admi		0	19	56	17	0	15	2	5	20	9	0	0	143
		survived		0	17	52	15	0	14	2	0	14	7	0	0	121
		died		0	2	4	2	0	1	0	0	6	2	0	0	17
12.	Babies treated with phototherapy	Total Admi		0	11		14	9	8	0	0	0	5	0	0	47
		survived		0	11	48	11	9	2	0	0	0	5	0	0	86
		died		0	0		3	0	0	0	0	0	0	0	0	3
13.	Babies treated with CPAP	Total Admi		0	0		25		0	0	0	0	19	0	0	44
		survived		0	0	67	18	0	0	0	0	0	19	0	0	104
		died		0	0		7		0	0	0	0	0	0	0	7
14.	Babies treated with KMC	Total Admit		0	72		47		0	0	0	17	25	0	0	161
		survived		0	72	242	42	28	0	0	0	17	25	0	0	426
		died		0	0		5		0	0	0	0	0	0	0	5
15.	Other congenital	Total Admi		16	18	0	31		0	0	223	0	0	0	0	288
		survived		11	16	0	22	0	0	0	184	0	0	0	0	233
		died		5	2	0	9	0	0	0	39	0	0	0	0	55

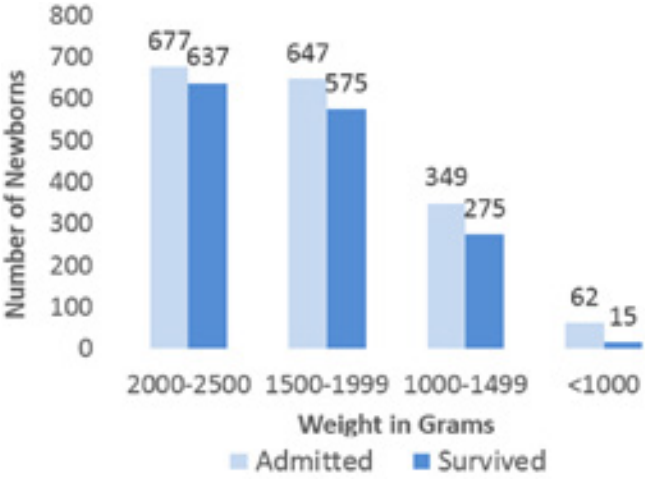

Figure 8: Numbers of newborns who are admitted, survived and died in the hospitals with NICU, Tigray RHB, Aug 2015, Mekelle

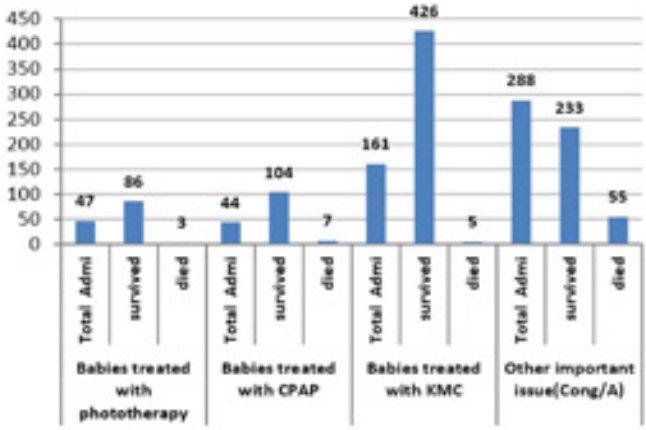

Figure 9: Numbers of newborns admitted and treated with phototherapy, CPAP, KMC and Others, and their treatment outcomes in the hospitals with NICU, Tigray RHB, Aug 2015, Mekelle

CHALLENGES

There are some challenges which need to be improved over time. These include:

- Shortages of trained manpower, mainly nurses, and lack of advanced trainings on NBC
- Infrastructure and equipment related problems such as water supplies (running pipelines) with shower & toilet for the mothers; inadequate rooms; and shortage of NICU equipment's like radiant warmer, standardized phototherapy machine, neonatal beds, KMC beds and camera
- Delayed referrals from health Centers, and poor communication mechanisms both vertical or/ and horizontals
- Poor documentation mechanism

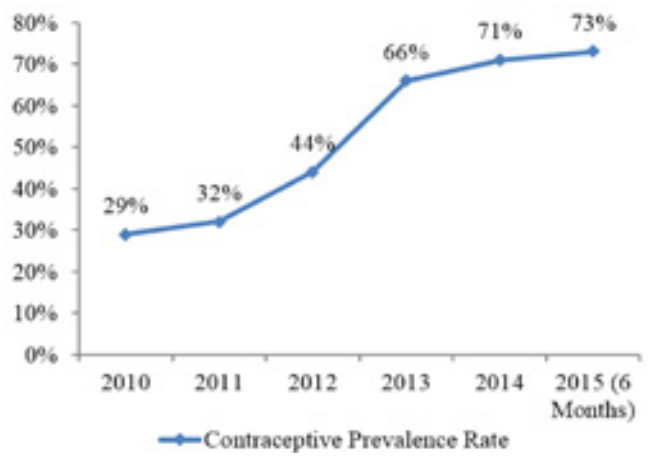

Figure1: Trend in contraceptive prevalence rate from 2010 to 2015

CONCLUSION AND RECOMMENDATIONS

The important lesson learnt here is that Neonatal Intensive Care Units (NICUs) are practically saving the lives of near miss newborns. Out of the total 1735 admitted newborns in the eleven hospitals, 1502 (87%) are survived. Considering, the late referral system, those newborns would have been lost unnecessarily if these NICUs were not functional. On top of that, newborns weighing less than 1000 grams, like the regional record of 670gm baby were survived in Ayder hospital.

Therefore, it is recommended that these cost effective NICU intervention should be expanded to all hospitals and strengthened in terms of equipment, trained human power and strengthening the fast referral linkages with close communications among the health center based primary health care units and the hospitals providing NICUs. Community awareness and documenting the lessons is also worth mentioning.

STORIES FROM THE FIELD:

COLLABORATION HELPS TO PERFORM SUCCESSFUL POLIO CAMPAIGN IN A HIGH RISK AND HARD TO REACH AREA

Selamawit Yilma, World Health Organization, yilmas@who.int

BenishangulGumuz region, located in the north-western part of Ethiopia, is among the high risk regions due to geographic terrain with rural hard to reach areas, pastoralist communities, influx of refugees from South Sudan and internally displaced people. The region was among the target areas for polio SIAs in August 2015. The RHB coordinated collaboration with key stakeholders including WHO and other partners.

Engagement of all non-health sectors including education, admin, women, children and youth affairs, community volunteers, religious and clan leaders, kebele leaders and 1 to 5 networks are among the approaches used in mobilizing additional materials and human resources core in its efforts to ensure that the polio immunization campaign reaches all children.

The collaboration starts from the pre-campaign activity such as training, supportive supervision, social mobilization and distribution of vaccine where the logistic support has been mobilized from the collaboration effort, and this continues in intra-campaign as well as post-campaign involving all the different partners that support with technical, financial, material and human resources.

World Health Organisation (WHO) as one of key stakeholder supported the region by providing technical support for polio campaign activities, facilitates the implementation of independent monitoring to assess the campaign quality - intra and post campaign, and to recommend necessary measures to ensure no child is missed. Independent monitors are trained and deployed to household level in high risk areas to check whether all target children got vaccinated and assess the quality of finger/house markings and communication.

Ato Mehari Tadele, BenishanguGumz Regional Health Bureau Disease Control and Health Promotion Core Processes Owner said, *"The independent monitoring proves whether the campaign conducted is of the required standard and quality and also ensures that all children have been vaccinated by checking against the indicators such as finger and house markings. We work closely with the IM team and have a good relationship. The IM findings help us to see the gaps overlooked and not detected by the admin report, and the feedback and recommendations are valued for our future interventions."*

BenishangulGumz is also one of the regions that have been receiving technical support from the Stop Transmission of Polio (STOP) programme. The STOP mission members are deployed in high risk regions in Ethiopia. Barnabas Bessing, a Field Epidemiologist from Ghana, is one of the current STOP 46 mission members deployed to support BenishangulGumz region. Speaking about the STOP team support Barnabas said that, *"As a STOP team we support several areas but our main focus is to strengthen the general surveillance activities. During our active case search in the field, we also provide supportive supervision in routine immunization activities, immunization campaigns, capacity building through training and data management. During active case search we review the OPD and admission books for any possible missed AFP, measles, NNT or other cases during provision of routine care. We also assess routine immunization activities: coverage, vaccines management and condition, to ensure vaccines administered are potent/ effective for the polio eradication initiative and the reduction of vaccine preventable diseases to be successful."*

Ato Mehari Tadele, in support of the STOP programme said that *"WHO also supports our region to strengthen surveillance and the routine immunization through the STOP team who assess the registration books and validates cases; conduct active case search, investigate AFP cases, provide feedback to parents of patients and validate/follow-up late cases. So the support and recommendations from the STOP team member is invaluable to us."*

In the region's capital, Assosa Woreda, 12 Kebeles out of 74 are hard to reach. The region also has high risk areas such as refugee camps that serve the South Sudan refugees as temporary shelter and internally displaced sites. Ato Yusuf Amran, Head of Asosa Woreda Health Bureau attested that *"The success for polio campaigns will not be possible without the contribution of all partners working in this area and therefore I thank them for their support".* He however urged the partners not to relent in their efforts/support towards polio eradication but continue to strengthen and support future initiatives to achieve health for all.

The result from the assessment of the past four polio campaigns conducted in this year (2007 EFY)

shows high coverage ranging from 101-106%. Even though the regions had lots of challenges as mentioned above, the result from the recent 5th campaign is also expected to be similar. In general, the collaboration helps to have a successful polio campaign that results high coverage. This approach might also be applied to strengthening the routine immunization improvement plan of the region as well as throughout the country.

INTEGRATION IN HEALTH CARE: ETHIOPIA'S NOVEL IDENTIFICATION TECHNIQUE TO MEASURE THE NUMBER OF CASES OF OBSTETRIC FISTULAS

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Introduction

Maternal mortality was a fear that many in the developing world would accept and attempt to conquer on a mother's journey to giving birth. The Millenium Development Goal to significantly reduce cases has been achieved by many, including Ethiopia. Whilst celebration of such an achievement is most definitely deserved, another feat which still stands to be overcome is that of obstetric fistula. This complication of childbirth leaves women helpless and often alone, as being ostracized from the community is commonplace. Treating the condition is paramount, but in order to even access care, such cases need to be identified. This was a problem for many years as in a country as large as Ethiopia with 1.14 million square kmts, this was not an easy task. One possible route would be to join forces with one of the most successful public health campaigns in history: the polio vaccination campaign. And so, the Ministry of Health in Ethiopia, managed to identify 2,527 suspected obstetric fistula cases in this fashion.

Obstetric fistula almost always occurs after obstructed labour[11]. It is an abnormal connection between the vagina and the bladder, the vagina and the rectum or both[12]. It occurs when the foetal head pushes against the wall of the pelvis for long period leading to a lack of blood supply to both the foetus' head and the pelvic wall which ends in tissue death in both regions. The consequence of this is often stillbirth for the foetus, and an obstetric fistula for the living mother.

The problems caused by obstetric fistula have immediate consequences such as urinary incontinence, faecal incontinence, or both and also damage to the vulva due to the abrasive contact of leaking urine and faeces. Complications of obstetric fistula include anemia, foot drop, contractures at the knee or hip joints as well as psychological consequences of depression. In terms of social consequences, one of the more devastating outcomes of obstetric fistula is divorce by the husband or abandonment by the families[13].

In a study by Muleta et al on the Health and Social Problems encountered by treated and untreated obstetric fistula patients, of the 39 untreated obstetric fistula patients included, 16 remained married whereas 21 had been divorced (2 were widowed). Of the 13 treated women, 7 women were divorced before treatment whereas only 5 were divorced after treatment, leading to the possible conclusion that the treatment of this ostracized condition allows one to regain some social stability and reintegration into the community.

The reasons for this isolation are multiple such as the bad odour from the women and difficulties in the women completing their 'household duties' which includes engaging in sexual intercourse with their husband.

Some of the women in the study stated that they were not able to attend social events such as weddings, or go to church due to "isolation and discrimination by the community".

Even after treatment, although the woman's social status is improved; difficulties were experienced in being able to fully assimilate into family and community life. From the study, 20 of the untreated women expressed that they had been having suicidal thoughts, which was also expressed by 6 of the treated women before treatment, and 3 after treatment.

Although in this study treatment did not solve all the problems experienced by the women, it is clear to see that social reintegration is impossible without it. Such

[11] http://journals.lww.com/obgynsurvey/Abstract/1996/09000/Obstructed_Labor_Injury_Complex_Obstetric_Fistula.24.aspx
[12] http://www.who.int/bulletin/volumes/93/1/14-141473/en/
[13] http://www.jogc.ca/abstracts/full/200801_WomensHealth_2.pdf

treatment is completely dependent on cases being identified. However, in the past, centers had to work from estimates as opposed to accurately identified cases.

The World Health Organization recognizes that estimates of obstetric fistula in geographical regions are often inaccurate due to the rarity of obstetric fistula and also the fact that the cases tend to live in remote locations. In addition, they reference a study from Stanton et al[14] which highlights that attempts at incidence reporting tend to arise from "self- reporting, personal communication with surgeons, studies by advocacy groups and reviews of hospital services in which the relevant denominators and unknown or unreported".

The study by Zheng and Anderson on Obstetric Fistula in low income countries stated that there is a need for more accurate measures for the incidence of obstetric fistula and that these measures should come from population or community based research so as to pave the way for the development of health programs and impact assessment [15]. The ministry of health answered this call for a more accurate fistula identification method in a novel way. They utilized an established, successful campaign: the polio campaign.

Currently polio has been eradicated from 99% of the world [16], and with specific regards to Ethiopia, in 2013 13 million children were targeted during the polio campaign employing close to 50,000 health workers and volunteers [17].

Such a successful campaign seemed like an obvious intervention strategy to gain access to numerous obstetric fistula cases which were missing from national identification. Therefore, each polio vaccination team in each of the 9 regions in Ethiopia[18] carried a survey written by the Ministry of Health asking a series of questions to each household in each region in order to identify obstetric fistula sufferers. The survey included questioning whether urinary incontinence was present, whether there was a prolonged labour or even a stillbirth, and if any of the answers to the questions were replied in the affirmative, the sufferer's name and address was noted.

With this method, 2,527 suspected fistula cases were identified, the largest number of cases being found in the Oromia region. This number of cases highlights how grave the problem of obstetric fistulas is, and how crucial an accurate identification method was to correctly quantify the problem.

Figure 1:
Suspected fistula cases categorized by regions/administrative council.

Preliminary Data, Suspected fistula cases, Feb 2015		
S.N	Region	Suspected Fistula cases
1	Amhara	411
2	Oromiya	1103
3	Afar	110
4	Tigray	178
5	Gambella	29
6	B/Gumz	71
7	Dire Dawa	0
8	Addis Ababa	45
9	Harari	10
10	SNNPR	558
11	Somali	12
Total		2,527

Discussion

Ethiopia is committed to eliminating cases of obstetric fistula by 2020, making the prevalence less than 1 percent. Such a commitment calls on innovative techniques to achieve such a goal. Numerous countries with a high incidence of obstetric fistula have developed help lines for sufferers, or the use of Mobile carrier networks to pay for patients' transportation to a health site[19]. These strategies are innovative but Ethiopia's strategy seems to tackle identification of cases in a way that other countries may also seek to consider when devising the structure of their health system.

The fact that such a large number of potential obstetric fistula patients have been flagged up, leading to treatment and care being readily available for such patients, is a tremendous feat. These patients would continue to be suffering in the confinement of their home without such identification. Using the polio vaccination campaign to identify obstetric fistula cases has never been done before, which may serve as a potential framework for countries which face a similar problem with obstetric fistula. Hijacking the polio vaccination campaign which has managed to reach remote and difficult to access regions so successfully worldwide, makes it useful in a way that previous attempts to measure obstetric fistula cases has failed. In addition, the campaign managed to bypass feelings of stigma that may occur if patients with obstetric fistula were told to seek nearby healthcare if they had suggestive symptoms. Instead, by directly entering their household under the wing of the polio vaccination campaign served a dual purpose and was very innovative.

[14] Stanton C, Holtz SA, Ahmed S. Challenges in measuring obstetric fistula.Int J Gynaecol Obstet. 2007;99Suppl 1:S4–9. [15]Obstetric fistula in low-income countries Alice X. Zheng, Frank W.J. Anderson [16]http://europe.newsweek.com/last-stand-against-polio-287862 [17]http://et.one.un.org/index.php?option=com_content&view=article&id=207:ethiopia-polio-vaccination-campaign-reaches-13-million-children&catid=82&Itemid=492 [18] http://www.ethiopia.gov.et/en_GB/regional-states [19]Good practices on ending the Health and Human Rights Tragedy of Obstetric Fistula - issue 15/2013. UNFPA

However, an obvious criticism to this campaign is the word suspected. The actual number of cases of obstetric fistula has not been finalised which leads to the question of what has happened to the cases which do not have obstetric fistula and whether we have accurate follow up reports of what happened to the patients who were identified with obstetric fistula.

INCREASING FAMILY PLANNING UPTAKE THROUGH RELIGIOUS LEADER'S CONFERENCE: **THE CASE OF GURSUM WOREDA, OROMIA**

Zufan A.[1], Chala T.[1], Teame G.[1], Abebaw A.[1], Melaku Y.[1]
[1]Health extension and Primary Health Service Directorate, MOH

The Problem

Gursum is one of the East Harerge Zone Woredas in Ormia regional state, Ethiopia. In this woreda, the major problems observed prior to program implementation include: low public awareness about family planning, the influence of religious leaders in the low land areas of the woreda (considering family planning service is a sin or Haram), the thought that "funeral prayer will not be performed for a woman who used family planning service", shortage of family planning commodities, luck of trained manpower on family planning service especially the long acting methods, inadequate awareness creation practice by the health care workers in the community and the low support by the health extension workers.

Implementation Process

The idea of increasing family planning uptake through religious leaders was initiated in 2003/4 EFY following the regional and Zonal Health Development Army building process. It has been noted that with the advent of the development army, community engagement and participation in the health issues has increased. As a result, the community was involved in identifying the existed health problems and the deep-rooted behavioral bottlenecks for use family planning services. The community members were also involved in setting the possible solutions which were later included in the Woreda health office strategic plan.

Family planning service was one of the priority interventions of this change process and different activities have been practiced to solve problems related to it. To boost the family planning service utilization in a short period of time, the district has designed a strategy to include religious leaders in the change process. The implementation of this initiative was started in 2006 EFY by involving religious leaders in the awareness creation activities at the religious institutions and different events and meetings in the kebele.

Discussions were held with religious leaders, community elders and kebele leaders to increase the family planning coverage of the district. As the majority of the communities are Muslims, the level of family planning awareness and attitude was low, and this was the main reason to involve religious leaders in the change process. It was also noted that when the awareness of the religious leaders increased and their attitude toward family planning changed, their role in changing the knowledge, attitude and practice of family planning service of the wider community will be maximized.

Family planning conferences were held quarterly at Kebele level and WDTs by involving kebele chairmen, religious leaders, health center directors, health extension workers and district supervisors. In those conferences, the benefit of family planning service was presented by religious leaders;the best practices from different Women development groups were presented; and their experiences were shared.

Among the Sheiks, those who have a better knowledge, awareness and attitude toward family planning service were identified and empowered to lead the discussions.This has helped to narrow the attitude gap at the community level. In addition, by involving these leaders at different Kebele meetings and conferences, the public awareness about family planning service showed a big change.

Supporting activities to achieve the practice

- Continuous and need based family planning trainings were provided for health care workers and other community leaders.
- Uninterrupted supply of family planning commodities especially long acting contraceptive methods.

- The integration of family planning service with other programs and improvement of service provision. A billboard written in the local language with a massage of "ዳኢማኢቲአኑዮምአልታ?" was hanged in the family planning and delivery rooms of the health centers. The English equivalent of the above massage is "when are you planning to give the next birth?" and it is meant to change the attitude of women. According to health workers, this billboard also helps them to remind the need of family planning service for a woman who comes to the health facility for delivery service and educate and counsel them to start family planning service.
- The creation of conditions by which Administrative and Health Care Workers at each level focuses and follow the family planning services.

Family Planning Performance

Figure1 shows the annual family planning service achievement in the district starting from 2010 to 2015. The contraceptive prevalence rate has increased from 29% in 2010 to 73% in 2015 (the first 6 months). The breaking up of misconceptions and myths about family planning service through participation of the community in thispredominately Muslim population of the district makes the performance achieved exceptional in Ethiopian context.

Activities contributed to the success achieved in the family planning service.

A. The strong linkage between health centers and health posts
    - Health Center professionals have standard formats to provide supportive supervision for WDTs and HEWs. Capacity building training has been provided for each health professionals to perform their supervisory work efficiently.
    - Motivating health care workers who support health extension workers at Kebele level and achieved better by including them in the health center duty benefit package.
    - Monthly review meetings, supportive supervisions and provision of timely feedback.
    - The strong feedback mechanism from the health centers to the health post by which all the health posts copied the achievement of other health posts, and creates competition among them.

B. District health offices provide quarterly integrated supportive supervision using a standardized checklist. Health centers, health posts and development teams with best performance were recognized for their performance.

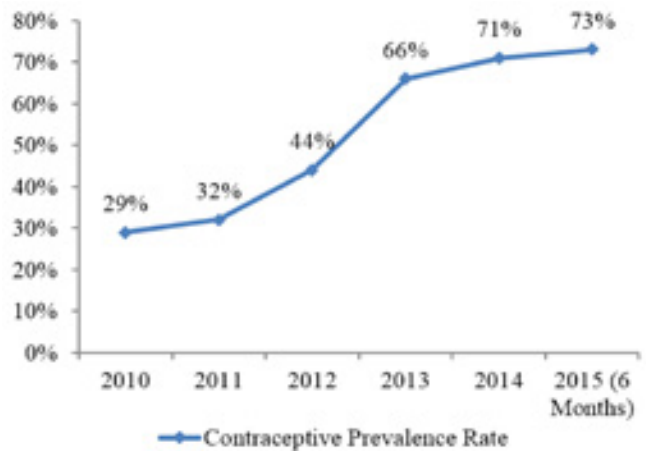

Figure1: Trend in contraceptive prevalence rate from 2010 to 2015

Scaling up the practice

This best experience can be implemented in predominantly Muslims areas with low family planning service utilization. This family planning best practice works to break cultural and religious misconceptions and myths. It needs a strong commitment. It can bring a better achievement provided that there is a strong women development groups, a strong command posts at different level and comprehensive mobilization for change.

Section 3:
New Initiatives

THE SEQOTA DECLARATION

Dr. Kesetebirhan Admasu[1], Dr. Ephrem Tekle[1], Dr. Ferew Lemma[1]
[1]Ministry of Health

WHAT – are we trying to address?

Sustainable development is a driver of nutrition improvements – malnutrition reduction; and improvements in nutrition will improve ways that propel sustainable development.

The GOE recognizes that addressing malnutrition is essential to achieving sustainable development. Furthermore, our health and economic prosperity goals will not be realized if hunger and malnutrition are not eliminated. Nutrition is a long-term investment, however, evidence shows that investments in nutrition are low-cost and high -impact. Furthermore, the potential of nutrition to transform societies is universally recognized.

The Cost of Hunger – Ethiopia study provided an important prospective analysis that sheds light on the potential economic benefits to be generated by a reduction in the prevalence of child undernutrition. The study estimated a reduction to 10% stunting and 5 % underweight by the year 2025 could yield annual average savings of ETB 9.2 billion (US$784 million). This economic benefit that would result from a decrease in morbidities, lower repetition rates and an increase in manual and non-manual productivity, presents an important economic argument for the incremental investments in child nutrition.

It is well known that Ethiopia is undergoing a demographic transition. Mortality rates are falling and the ratio of working age to non-working age people is increasing and will peak around 2050. This is the so-called "demographic dividend". But it will only be a dividend if the infants of today can get good jobs in 2030 – 50. That means investing in their nutrition today. As the African saying goes: 'the best time to plant a tree is 30 years ago'. The next best time is today.If the investments are not made in nutrition of infants today, the demographic dividend of 2030 could turn into a demographic "crisis", with widespread unemployment, disillusionment and a loss of development momentum.

Therefore, we must not allow the current and future generation of children to be malnourished as they will suffer from productivity loss, poorer cognition

and economic loss due to reduced schooling (UNSCN 2015). In addition, this will have a significant and direct impact on our nation's economic advancement. For this purpose, GOE believes that it's time to bring the value of nutrition to the forefront of all its (child) development agenda.

All in all, in Ethiopia the momentum for nutrition improvement is strong. The challenge is to lock in the current high level of commitment to reducing malnutrition in all its forms and convert it into accelerated declines. As we begin the SDG era, the GOE decided that the time is right to rise to this challenge, and decided to launch an initiative known as 'The 'Seqota' Declaration' - a commitment to end child under-nutrition in Ethiopia by 2030.

'Seqota' is the name of a place in north-western Ethiopia, located at an altitude of 2,300 meters above sea-level. It's known for its difficult rugged terrain and range of mountains. However, Seqota has also a haunted past – it was one of the epi-centres of the 1983-85 famine where despicable human suffering was observed. These scenes filled TV screens across the world.

Over the last 30 years or so, the implementation of various food and nutrition security programs, such as PSNP, TFP, blanket food supplementation, etc, demonstrated some improvement. However, more transformational change in resilience, productive, water & sanitation and health/ nutrition need concerted actions by all stakeholders. For this purpose, 'Seqota'and its surrounding area will serve as the centre of our zero under-nutrition challenge, where multi-sector and multi-stakeholder integrated community development actions will be implemented and scaled-up to bring about transformational change throughout the country.

Hence it is named after the place that has been the epi-centre of the famine 3 decades back, and the place where one of the movements for freedom against the oppressive military regime was started.

HOW – will we get there?

Evidence indicates that the forces that prevent healthy growth and development in such a profound way—hunger, disease, poverty, disempowerment, unhealthy environments—are powerful and multi-sectoral. Therefore, these need to be counteracted by equally powerful multi-sectoral and multi-stakeholder forces combining nutrition-specific, nutrition-sensitive and enabling environment actions at all levels (Global Nutrition Report 2015, IFPRI 2015, Black et al. 2013).

For this purpose, the components of Seqota declaration are multi-sectoral, evidence-based, innovative, and engaging multiple stakeholders to integrate nutrition specific and sensitive actionsinvolving(at least) the following sectors

1. Health/ Nutrition: Zero stunted children less than 2 years
2. Agriculture: 100% access to adequate food all year round
   - Transform smallholder productivity and income
   - Zero loss of food
3. Sustainable food systems: Sustainability throughout the food system (climate change)
4. Education – improved access, quality and equity (emphasis on girls & secondary education)
5. Water, Sanitation and Hygiene
6. Social protection - Focusing on poverty reduction and resilience building

In addition, the GOE, guided by the GTP, is committed to design/ develop the necessary policies/ strategies and systems to facilitate implementation of the aforementioned actions. Furthermore, community empowerment/ involvement, gender mainstreaming, data revolution and knowledge management are amongst the cross cutting issues that will be considered.

WHEN – the proposed timeline

I. Innovation Phase - Learning by doing [2016 – 2018]

- Partnership and advocacy
- Technical Assistance
- Investment to increase data use for decision making
- Exploring community labs

II. Expansion – to reach more vulnerable communities [2019 – 2020]

III. National Scale up [2020 – 2030]

WHO – is responsible & involved?

- Overall, the GOE will be responsible as well as will manage, lead implementation, part finance this initiative
- Community – will plan & involve in the implementation – all in all owner of the declaration
- Stakeholders – will have major role through technical assistance and financial support
- Academia/ Research Institutes – M & E.; knowledge management

WHERE – are we now? What has been done, what is next?

Done

- Launched at the sides of Finance for Development in Addis Ababa in July 2015 [see pictures]
- Commitment made/ signed by Deputy Prime Minister and Regional Presidents in Seqotatown on September 1, 2015.
- Rapid assessment of woredas within Tekeze river basin conducted and discussed

Next – ongoing

- Prepare a 15 year roadmap together with a detailed and cost 5 year implementation plan
- Aggressive advocacy and resource mobilization

SHRINKING THE MALARIA MAP IN ETHIOPIA: **THE MOVE FROM MALARIA CONTROL TO ELIMINATION**

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Introduction

Malaria elimination entails interrupting (achieving zero locally acquired infection) of local mosquito-borne malaria transmission from countries or localities as a result of deliberate efforts with continued measures in place to prevent re-establishment of transmission[20]. Today, many countries including Ethiopia encouraged by

global partnership, national commitment and the gains on the control programme have either started or planned for elimination of malaria. However, the decision to eliminate malaria is complex and should not be made lightly, as failure in the endeavor due to ill-informed or wrongly motivated decision can be serious and could potentially lead to resurgence of malaria, damaged credibility, and consequently could erode national and international support. It requires guidance to select and weigh the final set of factors that are relevant to its decision. As to the WHO recommendations, efforts can be staggered geographically and by Plasmodium species, with different phases taking place simultaneously in different parts of the country. Where elimination on a national scale is not deemed feasible, it may still be possible and desirable to create malaria-free zones[21]. In line with, Ethiopia is going to kick-off a sub national malaria elimination programme during GTP II.

Ethiopia's Context: Malaria Elimination in the National Strategic Plan of 2014-2020

In Ethiopia, as the result of the successful scale-up-for-impact (SUFI) of the recommended malaria control interventions and the sustained coverage (sustained control) of these interventions, malaria has shown enormous decreases since 2005. The decrease has been exhibited in outpatient consultation, admission, and mortality. Furthermore malaria epidemic has become a memoir of the past in the country, which has recorded a devastating effect of malaria epidemics. Generally, malaria transmission has been dramatically reduced to low-to-very low transmission rates in many areas of the country.

Thus, encouraged by the significant progress following SUFI and sustained control, in the current Malaria National Strategic Plan (MNSP, 2014-2020)[22] the Ministry of Health has clearly indicated and committed to eliminate malaria from specific geographical areas (sub-national elimination) targeting low transmission stratum.

The current MNSP has stratified the country's malaria situation on the basis of transmission intensity (annual parasite incidence per 1000 population-API) supported by information on altitude which is a proxy measure of temperature and rainfall determining malaria transmission; and experts' opinion (local knowledge). Accordingly, four broad strata have been identified. These are: (1) malaria-free, (2) low, (3) moderate, and (4) high transmission strata.

As to this stratification, districts below 5 cases/1000 population/year are designated into low transmission stratum and are primarily targeted for pre-elimination/elimination[23]. Additionally, it must be underscored that the Ethiopia malaria elimination is intended to create a wider territory of malaria free area instead of creating small "islands" here and there across the country. It is worthy of noting that districts under the low stratum are not perfectly fitting/contiguous one to another; rather districts from other strata (most probably moderate stratum) may lie beside the low-stratum or are neighboring them. Without targeting such districts, the effort of creating either small islands or wider malaria free zone is impractical due to contamination/importation of infection. Therefore, despite the malaria incidence rate of these districts is being above the WHO threshold to move towards pre-elimination, such districts (secondary target) will be also included in the elimination programme. Following these considerations, benefit is derived from maximizing efforts and bringing transmission down in a given wider geographic areas. Thus, to ensure better political and programmatic requirement, and to implement cost-effectively and achieve better programme management, the MOH has to select an entire zone/s constituting more eligible districts than different districts scattered in different zones.

Strategies to Achieve and Maintain Malaria Elimination

The task in malaria elimination is to interrupt local transmission, clear up malaria foci, reduce the number of locally acquired cases to zero, and to prevent onward transmission from existing cases. However, complete interruption of local transmission cannot be achieved by simply doing 'more of the same' approach as of the control programme; transition from control to elimination requires not only added priorities but also added actions. Therefore, the transition from malaria control to elimination requires a shift in strategy and the introduction of new activities. However, despite the increased political commitment for accelerated malaria control towards elimination, there are yet no globally agreed proven operational strategies for how to reach elimination and sustain the gains.

Ethiopia's malaria elimination is guided by the WHO global technical strategy for malaria 2016–2030 (GTSM,2016-2030)[24] and has adopted a package of elimination operational strategy that has been piloted in some African countries (including Ethiopia). According to this strategy, the path towards elimination starts with optimizing the

[21]WHO (2007). Malaria elimination: A field manual for low and moderate endemic countries, Geneva
[22]FMoH (2014). National Malaria Strategic Plan 2014-2020, Addis Ababa
[23]WHO (2007). Malaria elimination: A field manual for low and moderate endemic countries, Geneva
[24]WHO (2015).Global technical strategy for malaria 2016-2030. Geneva

current available intervention tools, thus followed by deploying additional specific transmission reduction strategies using a step-wise approach. These strategies include the following **STEPS**[25].

A. Optimizing existing malaria interventions (accelerate efforts towards elimination).

B. Transform malaria surveillance into a core intervention/Build information system for action.

C. Community clearance of malaria parasite (population-wide transmission reduction strategy).

D. Detect, investigate, classify and respond to individual malaria infection and foci/hotspots.

E. Eliminate local infection and transmission (measuring zero incidences) and prevent reintroduction.

Optimizing interventions: The progress towards malaria-free status is a continuous process, and not a set of independent stages. The first priority step to accelerate progress towards malaria elimination is to further enhancing and advancing the control interventions (optimization) in terms of quality, targeting and utilization. Advancing quality is dealing with quality of tools and their quality of application; targeting is considering that malaria infection is clustering in place and time (temporal and spatial foci and hotspots) and utilization is focused on attaining desired behaviors of targeted population to ensure uptake and use of an intervention. During optimization emphasis must be given to ensuring and sustaining political commitment at all levels and community engagement, strengthening human resources to apply standards and guaranteeing that the supply of malaria commodities are available at all times(GMAP/WHO)[26].

Build information system: A next step will be to establish a much-strengthened malaria elimination information system that transforms malaria surveillance into a core intervention by providing a high-quality real-time information to immediately report, investigation and respond on all the 'malaria infections' from both health facilities and community, and also on malaria foci/hotspots and anti malarial commodities.

Community-based parasite clearance: As the result of optimal application of all appropriate control interventions, malaria transmission often becomes increasingly focal where a considerable proportion of the population may remain malaria free while others experience multiple episodes/infections.

These infections related to variations in malaria infection suitability for transmission are tending to cluster at large spatial scales into foci or at finer resolution to hotspots. In these settings, additional aggressive strategies and tools to identify and targeting all people carrying parasites (symptomatic, asymptomatic and gametocyte carriers) are required to clear the 'parasite reservoirs' from the community and ensuring that they become non-infectious.

Case and foci investigation: Community based parasite clearance by targeting foci and hotspots may not enough to stop transmission. Field practice has shown many people who are infected with malaria parasites remain asymptomatic or undiagnosed and are therefore invisible to the health system. Further, in some settings the density of parasitaemia is so low in a substantial proportion of individuals that it cannot be detected with current routine diagnostic tools. Others still may carry the infectious sexual stage of the parasite (gametocytes) with no symptoms. These people unwittingly (unintentionally) contribute to the cycle of malaria transmission. If elimination is to succeed, this large "infectious parasite reservoir" shall be taken into account. This requires new approaches and tools (case and foci investigation) to help identifying additional infections by testing household members, neighbors, and other living in close proximity to the passively detected case (index-case) or with shared risk factors to stop onward transmission.

Prevention of reintroduction: The end game is prevention of reintroduction to maintain a district's malaria-free status by preventing the occurrence of introduced cases and indigenous cases secondary to introduced cases. This requires quality assured malaria diagnosis to early detect, notify, epidemiological investigation of every infection; urgent response in the event of renewed malaria transmission; and determination of the levels of receptivity, vulnerability [27] and risk of malaria reintroduction.

Of note, malaria elimination is a long-term, focused and technical process that requires effective program management at all levels which is different in a number of ways from program management in a malaria control setting. Therefore, all the way through all these steps, effective and solid programme management and adequate resources is essential to ensure the elimination of malaria within realistic timescales.

The Focus during HSTP II: Optimizing Existing Intervention and Introducing New Tools

Malaria elimination is evolving from the foundation

[25] Amhara Regional Health Bureau and MACEPA (2004).Accelerating to Eliminate: Step A to E. Protocol for Malaria Elimination Demonstration Districts in Ethiopia: Population parasite clearance to decrease malaria transmission in low and moderatetransmission communities, Amhara Region, Ethiopia
[26] WHO (2007). Malaria elimination. A field manual for low and moderate endemic countries. Geneva.
[27] ***Receptivity:*** The malaria transmission intensity/potential of that area, or outbreak risk.
Vulnerability: The likelihood that malaria will or willnot be reintroduced once eliminated, or importation risk.

laid by SUFI with intensified and efficacious interventions of vector control (LLIN, IRS, larval control), case management (RDT and ACT), behavioral change communication (BCC), surveillance and epidemic control with which substantial reductions in the malaria burden have and can be achieved.

It is true that these tools may not sufficient to eliminate malaria and we require more additional tools, but it is still true by optimizing those available ones, we can go very far[28]. In many situations, the population coverage, even if it has reached the universal scale is not translated into effective coverage and only achieved suboptimal effect. In light to the Ethiopian context the optimization strategy goes beyond the usual notion of population access by giving special effort to targeting, quality and utilization of the existing interventions. Optimization which is targeting the response, improving the quality and enhancing the uptake and utilization of interventions is all about delivering malaria interventions at high levels of effective coverage. The optimization strategy is therefore aiming at minimizing wastage and achieving greater value for money (efficiency) by exploiting the maximum possible benefit (effectiveness) of the exiting tools through improving the quality of anti malarial commodities and their applications, targeting the right population and enforcing the population behavior for better uptake and utilization.

For instance, despite availability of efficacious therapy many patients with malaria might delay in seeking appropriate treatment, and some providers are not always competent in diagnosis and do not comply with treatment guidelines, so patients do not necessarily receive the correct regimen or instructions. Even when the correct regimen is administered some patients will not adhere and yet others will be treated with counterfeit or otherwise substandard medication leading both to treatment failures and potentially also to the spread of drug resistance (system effectiveness decay).

During HSTP, therefore, the main task of malaria elimination programme in implementing optimization strategy will take place in 150-200 low and moderate malaria transmission districts to clear the road for the national malaria elimination. For the successful implementation of this period and consecutive years, there is a huge work with regard to developing a national malaria elimination guidelines and several working documents and implementation manuals, achieving effective advocacy to gain political engagement and social mobilization to ensure community involvement and ownership at different levels, capacity building at different levels on various elimination strategic components with emphasize to targeting, quality and utilization of service, enhancing surveillance, M&E, supervision and program management.

Conclusion

The toll of malaria has been in a decreasing trend from time to time. It's a great achievement by itself. However, it is not enough to have a significant reduction in case load as the risk of resurgence is always there unless the disease is wiped off. Hence eliminating the disease is a bold call put forward to end its scourge for once and forever.

On the other hand, elimination of malaria is a complex process that calls for coordination of efforts, renewing commitment, use of new technologies or tools and reinstitution of a robust surveillance system. Nevertheless, Ethiopia's government is highly committed to end malaria by investing what it takes to realize this ambitious endeavor. This is because the return is much higher than the investment cost. Eliminating malaria facilitates ample socio-economic development opportunities, including increase in productivity, school attendance, trade and tourism. Thus, let's join our hands to make a history by eliminating malaria.

KNOWLEDGE MANAGEMENT STRATEGY: TRANSFORMING THE MINISTRY OF HEALTH INTO A LEARNING ORGANIZATION

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This paper is intended to introduce the draft new National Knowledge Management Strategy 2015/16-2019/20 (known as Strategy from herein). When it's implemented, the Strategy will affect everyone at the Ministry of Health (Ministry), all those working in regional health institutions, and indeed anyone engaged in delivering and receiving healthcare in Ethiopia. The aim is *"Better knowledge, better decisions, better health"* As knowledge management is a new concept for Ethiopia's health sector, this paper aims to be educational and explains how this will be done and why it is important. It will not discuss administrative arrangements, but rather focus on concepts, strategic issues and expected benefits. It is essential that everyone who works in Ethiopia's health sector understands the issues and supports the process.

[28]Alonso PL, Brown G, Arévalo-Herrera M, Binka F, Chitnis C, Collins F, Doumbo OK, Greenwood B, Hall BF, Levine MM, Mendis K, Newman RD, Plowe CV, Rodríguez MH, Sinden R, Slutsker L, Tanner M 2011. A research agenda to underpin malaria eradication .PLoS Med 8: e1000406.

"Data is not information, information is not knowledge, knowledge is not understanding, understanding is not wisdom."

Clifford Stoll

Why a Knowledge Management Strategy?

The origins of Ethiopia's Strategy lie in two articles by H.E. the Minister of Health Dr. Kesetebirhan Admasu published in the Ministry's Quarterly Bulletin[29]. Dr. Kesetebirhan states, "Not only must policy making be evidence-based, it must also be forward-looking and result-oriented." The Minister stressed the need for a continuous process in which "data are transformed into information and knowledge into action." The health establishment should "translate policy into practice, engage every stakeholder in policy-to-practice processes, and document what works, what does not and why, with the aim to increase performance in the health sector and improve population health according to the motto 'better knowledge, better decisions, better health." [30]

This ringing declaration tallies with experience in other organizations. A strong knowledge management function is likely to make the Ministry more efficient and effective at all levels. Since knowledge constantly needs to be reviewed and renewed, the knowledge management effort should be continuous. Where it has been superseded, old knowledge should inform and new knowledge applied in a form that is appropriate to the Ethiopian situation. As knowledge about the health system is generated, including gaps and needs, this should be maintained in an evidence data base that can be shared with partners and donors, who are increasingly requesting such evidence. The impact of knowledge must be felt throughout the knowledge value chain.

With valid, reliable, timely and useful KNOWLEDGE – indeed, not only develop but also transform Ethiopia's health sector.

What is knowledge management?

The term "knowledge management" is taken as the active collection, organization, sharing, utilization and application of valid, reliable, useful and timely knowledge. Moreover, as such, the Strategy that has been developed for Ethiopia's health sector will not just about being responsive to the needs on a demand basis or undertaking the accumulation and dissemination of documents. Instead it aims to reach out to programs regularly and be proactive in application in ongoing and special projects, thus facilitating the Ministry to become a "learning organization."To this end, the Strategy calls for a planned, purposeful and active engagement between of the Ministry and its directorates, affiliated agencies and stakeholders to ensure the concepts of knowledge management are inculcated into the everyday fabric of the Ministry.

Regularly scheduled, on-demand and just-in-time knowledge acquisition and dissemination will be organized to assure timely responsiveness to the demands of the Ministry's operations

What is Knowledge Management in Ethiopian National Policy Context?

The Ministry just concluded implementing its fourth consecutive five-year health sector development plans and is about to embark on its Health Sector Transformation Plan 2015/16 – 2019/20 (HSTP). In addition, it also conducted a major visioning effort to think broadly and strategically about the long-term development of the Ethiopian primary health care system, covering the period up to 2035[35]. Knowledge management has been included as an area of priority and integral component both in the new National Health Policy and HSTP. These expressions of policy guide the development of the current Strategy.

While, in the past, the health sector has successfully and implemented "Health Sector ***Development*** Plans", the new "Health Sector ***Transformation*** Plan"– to succeed in transforming the health sector – it requires the health sector to acquire new knowledge to enable it to be resourceful, nimble and to think out-of-the-box, resulting in unparalleled level of efficiency and effectiveness. Such an ambitious transformative plan also requires the rapid, proactive, purposeful, planned acquisition, storage, dissemination and

[29]Admasu K. Information for Evidence-Based Decision Making: From Policy to Practice. MOH Health Quarterly Bulletin, Vol. 2 May 2013

[30]Admasu K. Supporting Evidence-Based Decision Making: Towards the Achievement of the Health Millennium Development Goals, MOH Health Quarterly Bulletin, Vol. 6, April 2014.

[31]Visioning Ethiopia's Path towards Universal Health Coverage through Primary Health Care, Ministry of Health, 2015.

utilization of new valid, reliable, useful and timely knowledge.

The failure to apply existing knowledge to improve peoples' health is often referred to as the 'knowledge gap' or 'know–do gap'. In Ethiopia, the know–do gap is not only a consequence of a lack of understanding about what to do or even a simple lack of resources, but also a consequence of a lack of capacity to apply existing knowledge.

To ensure its effectiveness, this Strategy is expected to be fully integrated into the existing national health development polices and plans and the long-range vision for Ethiopian health in years to come.

What is the Vision of Knowledge Management in Ethiopia's Health System?

A model of the health system which has acquired general authority is"WHO's Six Building Blocks of a Health System: Aims and Desirable Attributes." Below are the definitions for WHO's health system development building blocks and their knowledge management implications for strengthening Ethiopia's health system.

WHO'S SIX BUILDING BLOCKS OF A HEALTH SYSTEM: AIMS AND DESIRABLE ATTRIBUTES [32]

1. Service Delivery	
Good health services are those which deliver effective, safe, high quality personal and non-personal health interventions to those who need them, when and where needed, with minimum waste of resources.	Effective service delivery to Ethiopian citizens requires an understanding of which models work best at all levels of the health system – Federal, Regional and Woreda. There cannot be any correct action without correct knowledge: we must close the know-do gap in service delivery in Ethiopia.
2. Health Workforce	
A well-performing health workforce is one which works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances, i.e. there are sufficient numbers and mix of staff, fairly distributed; they are competent, responsive and productive.	Building a strong and effective Ethiopian health workforce requires an understanding of the most effective means of organizing health workers for effective service delivery, from Health Development Army, Health Extension Workers, Health Officers, Nurses, Physicians, etc.; how to scale up effective education programs in a sustainable manner; how best to design and deliver training programs, and how to most effectively attract and retain staff.
3. Information	
A well-functioning health information system is one that ensures the production, analysis, dissemination and use of valid, reliable, useful and timely information on health determinants, health systems performance and health status.	An effective Ethiopian health information system, together with health research and health systems research, and a strong knowledge management program, must work together synergistically to provide the best possible knowledge and information for decision making, priority setting, policy establishment, and operational effectiveness and efficiency. Ethiopia's health sector must strengthen the collection, analysis and utilization of valid, reliable, timely and useful information to promote evidence-based decision making.
4. Medical products, Vaccines and Technologies	
A well-functioning health system ensures equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.	Effective and efficient use of medical products, vaccines and technologies in the Ethiopian health system will require an understanding of evidence-based selection, reliable and high-quality manufacturing methods, supply chain expertise, and the development of national policies, standards, guidelines and regulations.

[32]World Health Organization Knowledge Management Strategy, 2005.

[33]Everybody's Business: Strengthening Health Systems to Improve Health Outcomes Who's Framework for Action, 2007.

5. Financing	
A good health financing system raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them.	Determining the right health financing system for Ethiopia requires the collection, analysis and sharing of critical data such as health expenditures, financial catastrophes, information about the cost of scaling up interventions and the impact on public health of doing so, and the best available international knowledge about effective financing models.
6. Leadership and Governance	
Leadership and governance involves ensuring strategic policy frameworks exist and are combined with effective oversight, coalition building, the provision of appropriate regulations and incentives, attention to system-design, and accountability.	Knowledge needs for effective governance of the Ethiopian health system include health policy decision making, analysis and oversight, multisectoral cooperation for health improvement, regulation, health system design, and maintaining accountability in the system.

What is the Knowledge Value Chain?

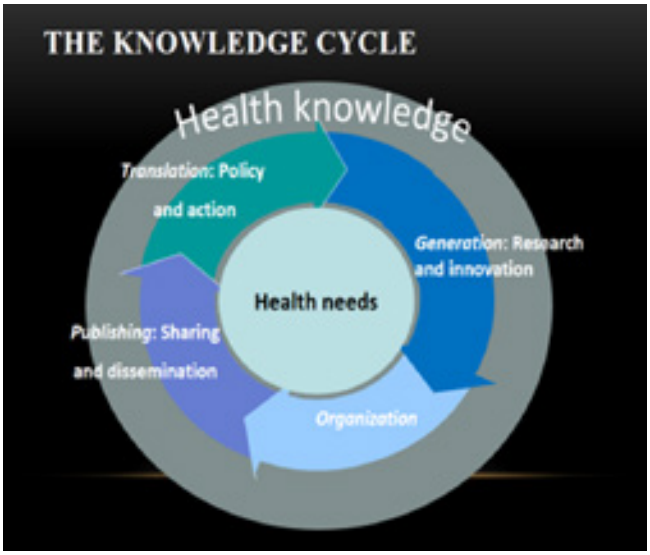
An important concept underlying of knowledge management and its application is the knowledge 'value chain'. The knowledge value chain is complex – it is rarely strictly accurate to depict it as a purely linear process, or even a cyclical one, since all of its components can occur simultaneously and there are loops and cycles within the chain. Nevertheless, it is a very useful model to understand how knowledge flows and can be used to assess the strengths and opportunities for improvement in each step of the chain.

The acquisition, creation, diffusion, dissemination or sharing, storage, application/utilization, and improvement of knowledge is called the "knowledge value chain."

Knowledge acquisition/generation/creation/ transcription	Focuses on how to improve the generation, creation and transcription of knowledge both in the Ministry, and in the health sector at large.
Knowledge storage	Focuses on how knowledge is captured on some medium, and stored safely in a knowledge warehouse – be it a designated central or local hub, where they are accessible to the various Ministry stakeholders.
Knowledge dissemination/distribution/sharing	Focuses on strengthening ways in which relevant health knowledge is disseminated throughout the Ethiopian health system.
Knowledge translation/synthesis	Focuses on identify gaps and how to support the translation and synthesis of relevant health knowledge for target audiences in Ethiopia.
Knowledge utilization/application/evaluation and review	Focuses on reviewing the application of knowledge in the Ministry and broader health sector, with the objective of learning lessons about the knowledge.

With a well-structured knowledge value chain operating in the Ministry, and in the health sector at large, a knowledge system can be profiled where relevant new knowledge from all sources is captured systematically and translated for optimal use. Knowledge management is about changing the way everyone works, which requires changing people's behaviors and work patterns, and making the Ministry a learning organization.

As a learning organization, the aim of the Strategy is to make the Ministry that (a) creates a culture that encourages and supports continuous employee learning, critical thinking, and risk taking with new ideas, (b) allows mistakes, and value employee contributions, (c) learn from experiences and experiments, and (d) disseminates the new knowledge throughout Ethiopia's health sector for incorporation into day-to-day activities.



What are the Practical Applications of and Expected Outcomes from Knowledge Management Strategy?

Knowledge management has always existed in one form or another in the Ministry. In the pre-electronic era, managers kept paper-based fact books which, in a single volume, contained all of the most important elements of knowledge pertinent to their scope of responsibility. As information and communication technologies became more widespread, specific electronic tools, such as an intranet and public website have become available. However, these resources need to be codified and documented (from implicit to explicit knowledge) to maximize their value and effect in the Ministry.

In general, and within the scope of the present Strategy, its mission will be the Ministry's organizational objectives such as quality, equity, improved performance, process improvement, the transfer of lessons learned and best practices (for example between projects or across geographies) and the general development of collaborative practices. The application of knowledge management is designed to assist in numerous very practical technical activities, such as:

The Strategy proposed the grooming of"KNOWLEDGE CHAMPIONS" to facilitate the development of a knowledge sharing rather than a knowledge hoarding culture – which is a leadership imperative.

- **Knowledge mapping** to understand available assets, flows and gaps within the Ministry and its network of associated organizations and bodies at Federal and Regional levels
- **Standardizing and simplifying documents and** processes in the Ministry's Directorates and affiliated agencies
- **Producing demand-driven, high quality, targeted information** in multiple languages and formats – particularly for use in the Regions
- **Taking advantage of experiential knowledge** – harvesting knowledge before staff retire
- **Enabling collaboration and networking** at all levels in the Ministry
- **Providing guidance and support to leverage information and communication** technologies for health both in the Ministry and in the health sector at large
- **Collaborating and networking with partners and stakeholders** within and outside Ethiopia
- **Capacity building in knowledge management** principles and tools

An essential value of knowledge management is not to repeat mistakes and learn from the experience. Successful knowledge management simply means not to reinvent the wheel, not to duplicate, and not work in silos.

The overall objective of the Strategy is to strengthen health systems and improve health outcomes through the application of knowledge management tools, techniques and approaches.

Studies show that institutions and organizations that have made the development and implementation of a knowledge management program a top priority have all reported significant improvements in their key results measures. Based on this experience, in applying the national Knowledge Management Strategies, the implementation of the Strategy is expected to result in:

- **Improved satisfaction with services of those being served** (the general public and other consumers of health, researchers, policymakers, etc.)
- **Enhanced staff satisfaction with their professional function** within the Ministry and improve the sense of empowerment and ownership as staff feel more valued for their expertise

- **Increased the efficiency and productivity throughout** the Ministry as individuals and groups learn to search for and re-apply good solutions based on the experiences of others instead of needing to reinvent the solutions themselves;
- **Shortened new-idea innovation and dissemination cycles;** that is, shortening the time between knowledge acquisition or creation and the implementation or application of the new idea;
- **Improved the sense of what the key knowledge needs of the Ministry are,** and where such knowledge can be obtained by better managing the vast amounts of available data and information and allowing individuals and groups to access appropriate knowledge sources;
- **Increased learning and skill development** by individuals and groups
- **Greater coherence and alignment** with key objectives across the Ministry
- **Enhanced transparency and accountability** as a result of knowledge sharing not only among healthcare providers, but also recipients of such services.

These are among the real benefits to be expected in strengthening knowledge management in the health sector – both in the Ministry and in the broader public health sphere.

To transform Ethiopia's health sector, the acquisition, creation, synthesis, storage, dissemination and utilization of valid, reliable, timely and useful **KNOWLEDGE** is a must and not a **luxury**.

INTRODUCTION OF NON-PNEUMATIC ANTI-SHOCK GARMENT TO ADDRESS MATERNAL MORTALITY IN ETHIOPIA

Clinton Health Access Initiative, Ethiopia

Background

Globally, maternal health is a major public health concern. Every day, 1,500 women die from pregnancy and childbirth-related complications worldwide. Most of these deaths occur in developing countries and most are preventable. In Ethiopia, the Maternal Mortality Ratio (MMR) is estimated to be 420 deaths per 100,000 live births . The main cause of maternal mortality in Ethiopia is obstructed labor leading to ruptured uterus, which causes hemorrhage (Ethiopia FMOH). Ethiopia is committed to reduce the MMR to 199/100,000 by 2020 .

CHAI Ethiopia is implementing a maternal and neonatal health program to bring a significant reduction in maternal and neonatal mortality using proven interventions that can be scaled up to support the Government of Ethiopia's efforts to reduce the MMR. CHAI Ethiopia has introduced the non-pneumatic anti-shock garment (NASG), a light-weight, reusable neoprene and velcro compression device used for obstetric hemorrhage cases. Obstetric hemorrhages of all etiologies, such as uterine atony, ruptured uterus, and ruptured ectopic pregnancy, can cause massive blood loss resulting in severe shock and without proper care can lead to multiple organ failure and death in a matter of 4 hours. The NASG can be rapidly applied to a hemorrhaging woman to shunt blood from the lower extremities to the vital organs (heart, lung and brain) and decrease blood loss. The NASG has been implemented and proven effective in managing obstetric hemorrhages in other countries. Evidence is already available on the device's effectiveness from various countries including Nigeria, Egypt, Zambia and Zimbabwe.

Introduction of the NASG in Ethiopia: The pilot began in January 2012 in 9 hospitals in two regions, Tigray and Oromia. The objective of the initial introduction was to demonstrate the effectiveness and practical applicability of the device in the Ethiopian healthcare setting. The focus of the introduction in selected sites was to document lessons on the introduction of the NASG in Ethiopia and to produce recommendations for scale-up of the device nationally.

[35] WHO, UNICEF, UNFPA, the World Bank, and United Nations Population Division. Trends in Maternal Mortality 1990 – 2013, 2014

[36] FMOH. Health Sector Transformation Plan 2016-2020.

To ensure the government's approval and ownership, CHAI Ethiopia held several consultations with government and other counterparts. Training was given to relevant staff at hospitals (gynecologists and obstetricians, emergency surgeons, general practitioners, health officers and midwives, cleaners, ambulance drivers), representatives from health bureaus and partners. In addition to the garment, M&E documents were distributed as well.

Preliminary Results

In the period from January to July 2012 the NASG was applied on 159 women, 78% of them due to post-partum hemorrhage (PPH). One Hundred and fourty nine (96.2%) women on whom NASG was applied recovered from shock. Deaths (of those with NASG applications) were mainly due to non-hemorrhagic obstetric problems unrelated to the NASG. Qualitative results also show that the NASG has been widely accepted by health professionals in the pilot sites and that they valued the NASG as a simple and effective tool for obstetric hemorrhage cases.

The success of the NASG in pilot sites has allowed for the use of the device to be scaled to hospitals in all regions. Currently over 1800 NASG have been distributed to 759 health facilities. In 2014 an assessment conducted in 608 health facilities with the NASG showed that from 918 applications 683 (74%) were applied to women with PPH, 143 (16%) for APH and 92 (10%) for women with other causes of hemorrhage (ectopic pregnancy, ruptured uterus, etc.). The clinical outcomes show 97% recovery with NASG application, which is similar to the pilot results.

Recommendations

In resource limited settings where facilities have limited capacities to manage mothers with obstetric hemorrhage, the NASG is an important device that can prolong a mother's life until definitive management can be administered. Further scale up of the NASG to all health facilities in the country will contribute to the reduction in MMR. Testing of the use of the device in the community and at health post would expand the reach and potential benefit of the NASG further impacting maternal mortality reductions.

INCLUSIVE HEALTH SERVICE FOR ALL: A PILOT TO IMPROVE ACCESS OF HEALTH SERVICES FOR PEOPLE WITH HEARING IMPAIRMENT IN FEDERAL HOSPITALS

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Background

The World Bank and World Health Organisation 2011 report showed an estimated 15 million children, adults and elderly persons with disabilities in Ethiopia, representing 17.6% of the population. A vast majority of people with disabilities live in rural areas where access to basic services like education, health and other social services are limited. Those in urban areas also face challenges related to access, constraints in user friendly services and discriminations[37].

In Ethiopia, the societal social construct around women is often regressive and in some areas exposed to dehumanizing processes. Disabled women, children, and the poor face severe discriminations but disabled women are subjected to two pronged discriminations, one for being women second on their disability. These make them prone to various forms of labeling and violence.

Ethiopia is among the countries that has signed and ratified the International Convention on the Rights of Persons with Disabilities. Article 25 of the FDRE's constitution and article 41/5 of the constitution reinforce the right of a person with disability.

As far as access to health services are concerned, people with disabilities face several barriers which affect the overall health and quality of care they receive. The barriers include physical and structural obstacles, communication and provider bias, and financial and systemic barriers.

Cognizant of this FMOH, launched a flagship program to address the barriers and improve access to health service for people with hearing impairments.

Major Activities

- Eighty three (50 women and 33 male) health professionals and administrative workers from 4 federal hospitals attended a training "Accessibility and inclusiveness of health service to all segments of the society". Youth participation was high at 58.54%.
- Regular post training monitoring and supportive supervision

[37]World Health Organization, Report on peoples with disability, 2011

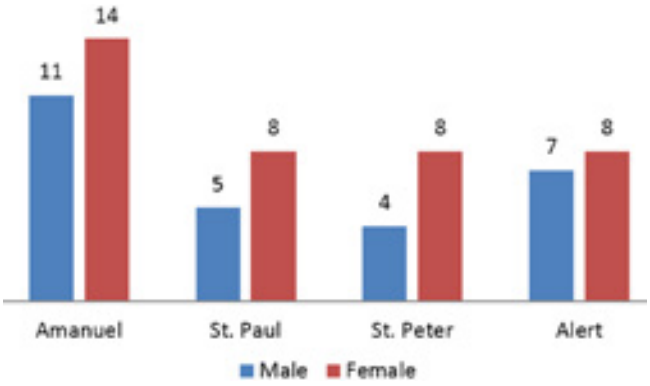

Figure 1: Number of Hearing impairment people received service as per standard

As shown in figure 1, within six months all, 65 (38 women and 27 men)people with hearing impairment received health services through sign language without facing communications barriers.

Lesson learned

Inclusive health service for people with disability has high impact to address equity and quality of service provision

- Inclusive health service for disability can be integrated in the existing health system without high payoff
- Advocacy and coordination are key to reorient health service for disable people

Way forward

Based on the experience from the pilot intervention, the following activities will be done to meet the HSTP demand for quality and equity for peoples with disability:

- Design evidence based intervention for "Inclusive Health Service for People with Disabilities"
- Develop strategic and operational for the program
- Expand the program to other kind of disability
- Expand the program to all health facilities

FAST TRACK ELIMINATION OF BLINDING TRACHOMA: **AN INITIATIVE TO CLEAR TT BACKLOG**

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Introduction

Trachoma is the leading cause of infectious and preventable blindness worldwide. Ethiopia carries around 30% of the trachoma burden in sub-Saharan Africa. Trachoma is the second leading cause of blindness, next to cataract, in Ethiopia. According to the 2006 National survey on Blindness, Low Vision and Trachoma, notwithstanding the significant regional variations, the average National prevalence of active trachoma for children in the age group 1–9 years is 40.1% and TrachomatousTrichiasis (TT) for adults above age 15 years is 3.1%. Six hundred four rural districts are known to be trachoma endemic with 73,164,159 people being at risk of trachoma infection; 147,000 are blind from trachoma and 792,705 have TT and are, therefore, at risk of blindness[38].

Trachoma control program in Ethiopia

SAFE strategy (S = Surgery, A = Antibiotics, F = Face Washing & E = Environmental sanitation) has been adopted by the WHO to eliminate trachoma by 2020. Implementation of SAFE in Ethiopia is underway in the highly endemic regions in different scales. Trichiasis surgery, to eliminate the direct cause of blindness, is the corner stone for population affected with scaring of the conjunctiva and in-turned eyelashes. However, due to the huge burden of the disease compounded with efforts in limited areas resulted in poor progress.

Renewing its commitment, MOH in collaboration with development partners has developed a plan to boost the current efforts. It designed and leads a special initiative - "Fast Track Elimination of Blinding Trachoma: The Ethiopian initiative to clear the TT backlog" with a one and half year timeline of reaching all TT cases with TT surgery. Ten million birr challenge grant fund was committed from the ministry of health for the training of sufficient number of TT surgeons. Similarly, donors and development partners pledged to match the challenge grant through availing TT kits & consumables and covering operational cost for undertaking TT surgeries.

Objective

- To reduce the prevalence of trachomatous trichiasis (TT) to less than 1 case per 1,000 population

[38]Global Trachoma Mapping Project Surveys, 2012, 2013 & 2014

Major activities

Combining Static, Outreach and Dedicated mobile teams of TT surgical services

Training middle level health care providers using the WHO Trichiasis surgery manual

Expand TT surgical services based on the disease burden at Woreda level and provide adequate TT sets and consumables

East Gojam zone in Amhara, Jimma zone in Oromia, Guraghe zone in SNNP and Central zone in Tigray regions were selected for pilot implementation of the Fast Track initiative.

Target

- Provide **TT surgery for 792,705** individuals by the end of 2016.
- To equip 826 health centers to provide TT surgery service
- To train 1,117 middle level health care providers for trichiasis surgery

Pilot sites achievement

The four zones account for 82% of the national TT burden. Nationally, the initiative has been officially launched on February 12, 2015; then after zonal level launchings took place, its implementation started since the last week of April.

- So far, in four months, a total of
- 85 (100%) health facilities started to provide TT services
- 132 (77%) health care providers trained in TT surgery
- 410 (40%) TT sets distributed
- 21,902 (20%) individuals received eye lid surgery for trichiasis; majority of them (79%) in Amhara Regional State, East Gojam Zone.

Despite various challenges, the initiative is showing that huge number of surgeries can be performed preventing blindness; even though the achievement is far from the target. This requires strong commitment at federal, regional and district levels in utilizing this opportunity to eliminate blinding trachoma.

Challenges

- Inadequate TT sets, difficulty in organizing outreach services and in forming dedicated mobile teams due to insufficient resource mobilization
- Difference on level of commitment and ownership of the initiative among regions
- Delayed implementation which pushed the actual surgery to the rainy season contributing to low uptake of surgery

Way forward

- Strengthening commitment at regional level
- Adequate resource mobilization
- Scale up in 2016 to before the rainy season

DECENTRALIZE PREVENTION, AND CARE OF CHRONIC NON-COMMUNICABLE DISEASES IN ETHIOPIA: **PILOT PROJECT IN SELECTED HEALTH FACILITIES**

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Introduction

The global prevalence of all leading chronic non-communicable diseases is increasing, with the majority occurring in developing countries and projected to increase substantially over the next two decades.[39] Between 1990 and 2020, mortality from ischemic heart disease in developing countries is expected to increase by 120% for women, and 137% for men.[40] A World Health Organization Report states that without action, 388 million people globally will die of chronic diseases such as diabetes mellitus, cancer and heart diseases in the next decade.[41]

Available evidences in Ethiopia indicate that non-communicable diseases are increasing from time to time. They contribute for nearly 25% of adult deaths at community level, according to a community based study in central Ethiopia. [42]

Currently, the care of chronic non-communicable diseases is limited to hospitals. This has resulted in overcrowding, and as a result, the quality of care is below the standard even in major cities and hospitals in Ethiopia. Studies in Addis Ababa, Bahir Dar and

[39] WHO. Global status report on non-communicable diseases 2010 [40] Leeder S, Raymond S, Greenberg H, Liu H, Esson K. A race against time: The challenge of cardiovascular disease in developing economies. New York, NY: Columbia University; 2004. [41] World Health Organization. Chronic diseases: A vital investment. Geneva, Switzerland: WHO; 2005 [42] Lulu K and BerhaneY.The use of simplified verbal autopsy in identifying causes of adult death in a predominantly rural population in Ethiopia.BMC Public Health 2005; 5:58 doi: 101186/1474-2456-5-58

Adama, Tikurambessa hospitals revealed that NCD care were not up to the standard.[43]

Cognizant of the health, social, and economic challenges posed by chronic non communicable diseases in Ethiopia, the Ministry of Health would like to capitalize on the positive experiences of university hospitals of Gondar and Jimma. This initiative envisions decentralization of chronic illness care with special emphasis to diabetes, and hypertension. As a matter of fact this initiative is in line with the current recommendation of the World Health Organization to bridge care of chronic non-communicable disease down to primary health care level.

Decentralization Approach

This initiative will start at 36 health centers and 12 hospitals in Addis Ababa, Bahir Dar, Harar, Hawassa, Hossana, Nekemte and Mekele, and Axum. Each hospital will send its patients to three follow up health centers, and support them so that patients would get care at health center level near to their home. Health centers will further link patients to health posts for further health promotion, and health education. The first phase of this initiative in its 1st year will serve about 50,000 patients and will cost about 23,000,000 Birr.

The principal functions the initiative are **Health promotion,** early detection of persons with risk factors, cost effective interventions to reduce risk **(Prevention)**, early detection of the person with clinical disease and cost effective treatment to prevent complications **(Treatment)**, first aid and emergency treatment, chronic disease follow up and Rehabilitation and Palliative care.

Goal: creating access to comprehensive and quality NCD health prevention and care through the primary health care facilities and their frontline health care providers.

Objective: Establish comprehensive and quality primary prevention and care for Diabetes and Hypertension in four major towns and to strengthen and scale up currently operating projects in other two towns in Ethiopia from September 2015 to September 2016.

Strategies

- Task shifting /sharing to primary health care providers(nurses and HEW)
- Behavioural change communication on risk factors at community level by HEW
- Access to essential diagnostics and medicines for hypertension and diabetes
- Mentoring and supportive supervision of nurses by trained general practitioners
- Standardization of recording and reporting tools and avail job aids

Conclusion

Non-communicable diseases are increasing from time to time; contribute for nearly 25% of adult deaths at community level in Ethiopia. Decentralizing the service from the existing hospital level to primary health care unit will improve quality of care and accessibility of service. This initiative will take a lesson by decentralizing the service to 36 health centers. MOH call for involvement of key stakeholder during the implementation of the initiative.

NURSING SPECIALTY INITIATIVE: **PILOT PROJECT TO IMPROVE QUALITY OF HEALTH CARE**

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Background

The global phenomenon for advanced nursing practice has evolved since the mid-1800s. It started in America with nurse anesthetists, followed by nurse midwives, clinical nurse specialists and recently (1970s) nurse practitioners. In general, advanced practice nurses are prepared to practice specialized nursing in expanded roles providing quality health care to individuals, families and groups in a variety of settings. These settings included homes, hospitals, institutions, industry, schools, community agencies and clinics.[44]

Specialization has been an integral part of nursing evolution and a precursor to the concept of advance practice. Through specialization, nurses should be able to gain expert knowledge in a focused area of practice and to

[43]Molla Gedefaw, Fisseha Setargie, Worku Awoke: Satisfaction of Chronic Illness Patients at Felege Hiwot Referral Hospital, Bahir Dar City, Northwest Ethiopia. Open Journal of Epidemiology, 2014, 4, 217-223.

apply this knowledge to the patient care experience.

Nursing specialty is identified in terms of population, such as gerontology or maternal child health; type of problem, such as wound or pain care; setting, such as perioperative or emergency; type of care, such as rehabilitation or palliative care; and disease/pathology, such as oncology, diabetes, and orthopedics.

St Paul's hospital started operating theatre nursing, and emergency and critical care nursing in 2013. The program is expanded to 11 teaching institutions with enrolling 441 students in Neonatal, Emergency and Critical Care, and Operating Theatre nursing in 2015.

Rationale

The health care industry has faced many changes in regulation, legislation, and delivery of care based on patient needs in recent decades. The changes have created the need for specialized administration of care and health care organizations throughout the industry.

Nursing care in our country was provided by comprehensive nurse professionals, and now a strong quality service demand by the community urge the system to have highly qualified nurses.

Target

By the end of year 2020:

- Expand the program in to 5 new specialty programs namely surgical, pediatric, psychiatry, ophthalmic and Cataract Surgery in 2016.
- Enrol 700 students in five programs and deploy 441 in 2016
- Train and deploy a total of 6,430 specialty nurses (making the density around 6.0 per 100,000 population)

Strategy

The following strategies are selected to train specialized nursing program.

1. Expand the category of specialty nursing in to 8 and more based on demand driven enclave approach
2. Improve the Curriculum
    - Integration of the delivering basic science with body systems based approach(20 % theory and 80% practical)
    - Shift focus to clinical sciences. Clinical exposure starts in year one with a progressive increase in intensity, complexity and student responsibility over the years.
    - Diploma nurses who are in huge amount in the health care practice will upgrade in to specialty nurse. It is a 2 and ½ year.
    - Continuous competency assessment during training period for both knowledge and skill.
3. Strengthen skill lab and hospital clinical attachment as well as establish community practice program
4. Rearrange set up for specialty health care administration using the students
5. Build capacity of teaching institutions and hospitals by training and supplying materials
6. Strengthen the supervision, mentorship and preceptors program
7. Strengthen partnership and coordination among key stakeholders (Donor, NGO, Other sector)

Anticipated challenge

- Teaching institutions are unhappy to accept this type of new curriculum.
- Shortage of instructors for specialty programs and skill lab materials for demonstration
- There is no experience on Preceptor-ship for clinical attachment.

A total of about 46,347,483.00 Birr will be needed for 2016.

Conclusion

Specialization in nursing is important for providing safe and quality nursing care. Quality of health care dramatically improves by specializing generalist/ comprehensive nurses on specific knowledge and competencies areas. MOH has started in 3 new priority programs and will continue to expand in to 8 programs. Involvement of key stakeholders such as donors, other sectors (Particularly Education) and professional associations is vital to successful implementation of the program.

HEALTH SECTOR MONITORING AND EVALUATION STRATEGIC PLAN, 2016 – 2020

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Introduction

There has been a remarkable improvement in the health status of Ethiopia over the past two decades of the Health Sector Development Program (HSDP). However, despite the progress achieved so far, there are still challenges in improving the health of the population across the life course, improving the quality of care, and addressing health inequalities.

Monitoring and Evaluation (M&E) facilitates decision making by providing evidence. The MOH identified M&E as one of the core components of achieving the Health Sector Transformation Plan (HSTP) goals. The HSTP has set very ambitious targets of achieving universal health coverage, and improving the quality of and achieving equity in health service delivery. Achieving HSTP goals necessitates reorientation of the health services, shift in the mindset related to producing as well as receiving health services, and calibration of the existing health care practices to higher level. Accordingly, capable governance system is needed to introduce and sustain innovative strategies and interventions, cadre of talented professionals, and novel ways of engaging individuals, families and communities.

Strong monitoring and evaluation system is vital to timely inform stakeholders in their decision making process. Therefore, this M&E strategic plan is developed to improve the monitoring and evaluation system to respond to the demand of quality information for decision making.

Rationale

Program Demand: There is an increasing move among the health programs and the key stakeholders to comprehensively manage their programs and the health system using a clearly depicted logic based on evidence and a better understanding of the contributions of the program interventions within a wider context of overall improvement of the health status of the population taking the resource constraints also in the consideration.

Data revolution: Throughout the world, data revolution is taking place in its own right. This data revolution has created unprecedented opportunities for the policy makers, program managers and implementers, and the community to do their businesses differently for achieving better lives. The health system has to adapt itself to the data revolution utilizing this availability and access to tremendous amount of data in its own benefit, and taking care not to sink in the data tide. The FMOH chooses to adapt and use the potential of data revolution in HSTP as one of its transformation agenda. In HSTP, information revolution is sought as not only about changing the techniques of data and information management, but also about bringing fundamental cultural and attitudinal changes regarding perceived values and practical use of information.

Strategic Shift of M&E under HSTP

Under HSTP, the FMOH is bringing strategic shifts in how and what is done as part of the national health systems monitoring and evaluation as listed below:

- Community Scorecard: Shift from rating "what we do" to rating "what we contribute to the community"; and this rating is done by the community rather than by the health service providers themselves.
- Real time information: The shift from paper based information system to automation
- Local use: Shift from just reporting to higher levels to the use of information at point of generation
- Program development: Shift from program monitoring to measuring theory of change
- Measurement: Shift from using aggregate data for measurement to using stratified and triangulated information for monitoring and decision making

Target

By the end of year 2020:

- All community structures rate the health system using community scorecards (community scorecard implemented in 100% of community structures)

- Proportion of health facilities that conduct data quality assurance using lot quality assurance sampling technique increased from 36% to 85%.
- Proportion of health facilities that meet the data verification factor within 10% range for SBA increased from 71% to 85%.
- Health institutions that meet minimum information use criteria increased from 29% to 90% *(regular performance review -plan Vs achievements, root cause analysis, visual display, action plans, shares responsibility and track implementation of decisions)*

Strategic Objectives

Community ownership: The community has a major stake in the M&E of the health system. Data is the property as well as the right of the community. The community is a significant source of health data; the community uses the data (for planning or resource allocation), is in the position to objectively verify the claims about the health status of the people, and can hold the government accountable for the performance of the health system. Therefore, this objective of enhancing community ownership of health system M&E. Envisions unleashing the potentials of the community in the development, implementation and monitoring of health policy, programs and systems using data. This strategic objective facilitates the creation of community ownership from the very beginning by acknowledging the ownership of health data. It assists in the M&E literacy of the health development army, creates enabling environment for access to data and the use of tools (community scorecard) for participatory rating of the health system by the community. Community scorecard will be implemented regularly to measure the responsiveness of the health system and the satisfaction of the community, and to identify priority areas for intervention.

Optimal use of resource: HSTP necessitates M&E as a transformation agenda in response to the information demand boom. This requires huge initial investment to transform the paper based system in to electronic, and shift the mind set up of all actors for evidence based decision making particularly at the point of generation. Nevertheless, HSTP pursues the principle of feasibility for ensuring that the resources consumed for M&E are far less than its benefits. Thus, under this strategic objective, FMOH will promote proactive resource mobilization and efficient utilization for monitoring and evaluation. Emphasis will be given to increase M&E budget allocation, track M&E resources, , deploy appropriate ICT and invite international development partners for contributing M&E resources.

Data quality: This objective aims to attain data quality in terms of accuracy, completeness, reliability, timeliness, confidentiality, precision and integrity. It promotes and advocates the culture of recording and generating quality data. Data quality will be ensured by conducting data quality assurance mechanism like PRISM, RDQA and LQAS at all levels of the health system, including the community. Implementation of data quality assurance activities will be reinforced by technical assistance, supportive supervisions/ mentoring and review meetings. Also, the Data quality will be assessed by external agencies such as CSA and EPHI.

Strengthen operational research, evaluation and survey: This strategic objective balances "the right question, right methodology and right answer" in the M&E decision making continuum. Several researches have been carried out by different actors. Routine information is providing surge of data. Ethiopia has fast paced the development and democratization process; and this demands timely information, improved accountability and reduced data risk for decision making. Therefore, this objective aspires to promote identification of research agenda, review and utilization of findings from various operational researches that otherwise would have been left on the shelf, institutionalization of M&E methodologies (such as impact evaluation) and triangulation of data from different sources.

Enhance use of information: This strategic objective entails availing information both in terms of visibility and access, enhancing data demand, strengthening culture of information use, knowledge management, and capacity to use information for strategic decision making at all levels of the health system. It is about improving the identification & prioritization of problems, developing action plans, and performance monitoring. It keeps continuity of decision by facilitating provision of feedback and tracking actions. It also includes diversifying information outlets to disseminate M&E findings to stakeholders and ensure the visibility of information.

M&E for health Quality and Equity: There is an urgent call for M&E system to respond to health service quality and equity. This strategic objective deals with disaggregation and use of health data by range of demographic, geographic and socio-economic characteristics to ensure equity. It requires developing quality and equity measurement

mechanism. It also entails ensuring universal coverage of HIS system irrespective of geographical setting.

Partnership: This strategic objective is about improving partnership among all stakeholders involved in planning and managing the health sector M&E through strengthening harmonization and alignment. It promotes creating coordination platform for various health information systems managed by other sectors, agencies, professional associations and institutes which significantly contribute to information revolution in the health sector. Stakeholders will participate in agenda identification, joint program evaluation, project monitoring, and researches. It advocates for sustainable public private partnership in relation to M&E.

Accountability: Accountability of M&E entails that there is an agreed, transparent and responsive process that is designed and implemented in a participatory manner by the government and stakeholders to assess and modify the monitoring and reporting systems. The relevant government institutions and stakeholders are held responsible for the implementation of the agreed M&E system.

Institutional capacity: It comprises approaches to ensure all actors of the health system and its stakeholders understand and appropriately use routine health information system. It entails incorporating training on health information system in the curriculum of health professionals and training of all health care providers. It enhances the role of health mangers in the entire process of data management and information use by providing training, mentoring, and scale up of best practices. Information Communication Technology (ICT) will be the centerpiece of creating enabling environment for institutional capacity building.

Key initiatives

1. Build M&E literacy of Health Development Army
2. Implement community scorecard and ensure data visibility and access to the public
3. Advance data quality assurance system
4. Establish data repository for major surveys, researches and evaluations.
5. Institutionalize evaluation methodologies (Impact evaluation, and meta-analysis)
6. Strengthen performance review and integrated supportive supervision
7. Enhance accountability scorecard at all level
8. Advance data triangulation, analysis and interpretation
9. Strengthen M&E advocacy and sensitization
10. Institutionalize measurement mechanism for service quality improvement
11. Strengthen health equity monitoring
12. Ensure equity in health management information system
13. Strengthen partnership in M&E
14. Introduce M&E in pre-service curriculum
15. Harnessing appropriate technology for M&E (ICT)

Policy & Planning Directorate of the MOH will lead the implantation of the strategy. National Advisory Committee and National Planning Forum will play key roles in advising and operationalizing the strategic plan respectively. The M&E strategic plan outlines the role and responsibility of key stakeholders including the community. This strategic plan requires 75 million USD.

The MOH calls on all the levels of the health sector, other sectors, the development partners, the civil society and the private sector for effective implementations of the Monitoring and Evaluation Strategic Plan.

INTEGRATED URBAN SANITATION AND HYGIENE STRATEGY

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Background

Ethiopia is the second most populous country in Africa with over 90 million people (July 2014 estimate), out of which about 20percent are urban residents. The share of urban population is among the lowest even in the continent but the size of the actual population has recently passed 17 million that is higher than the size of some African nations. The urban population is growing at an average rate of 5.84 percent for last fifty years (1961-2013)[47] , which is equivalent to 756 additional people to the urban centers daily. The growth is however slowed down to 4.11 percent between 2000 and 2013. The growth rate from 2000 to 2030 is expected to reach 4.7 percent. With the current growth rate the urban share will reach 35% by 2030.[48]

[47]World Bank development Indicators , 2012
[48]Antonio Golini, Urbanization and urban population in Ethiopia based on UN, Department of Economic and Social Affairs, Population Division database

The urban population is expected to double with only 13-15 years, which is shorter than African average by seven years.[49] There are about 935 urban settlements[50] throughout the country. The geographical distribution of towns and the size of population widely vary. The capital city Addis Ababa is extremely big in all terms and could be more than five folds from the second big urban Centre Dire Dawa, in terms of population, availability of facilities and in the magnitude of challenges. The Ministry of Urban Development, Housing and Construction (MUHDCo) has grouped the towns into five clusters based on the size of the population, administrative center and area of the town.[51]

Ethiopia has made impressive progress over the past 10 years in reducing poverty and ensuring urban development by upgrading slum areas, constructing of condominium houses with full WASH package, involving micro and small enterprises in waste management, increasing access to WASH services. This was achieved through implementing of its conducive and comprehensive sector policies and strategies such as urban development, health, water resources management, environmental protection and industry.

Although availability of the policies and strategies created an enabling environment; the uncontrolled urbanization leads to urban poverty, scarcity of housing and basic services including water supply, waste management, health, education; unemployment and pollution of air, water and soil. The lack of service provision is more complicated and even absent to the poorest of the residents and those living at the peripherals of towns and cities. The provision of sanitation service is amongst the worst challenges for urban centers of the country. The causes of the challenges could be a combination of low infrastructure, financial constraint, weak urban management, low implementation capacity and weak coordination.

Goal

The overall goal of this strategy is to mitigate the negative impacts of poor urban sanitation on health, environment, social and the economy by implementing full sanitation system (from containment to disposal) for liquid and solid waste by introducing locally sound, operationally sustainable service delivery systems, intensifying behavioral change communication, strengthening sector integration; institutional capacities and enforcement of regulations.

Rationale

The urbanization that is observed in Ethiopia demands a well-organized and structured system and management of sanitation services across the towns. The liquid and solid waste generated from different type of sources that include industries, commercial centers and households are substantively high that require a well-coordinated management system, operational rules, guides and responsible institution. The change that is observed on the housing and the life style is expected to increase the generation, and composition of the solid and liquid waste. Most of the towns, regardless of their size and economic interaction, have a challenge of having standard containment at the sources, collection, transfer and transport, treatment and reuse of the waste of the town. Pollution is the results of lack of awareness of hygienic behaviors, poor sanitation services and poor management of existing facilities.

The development of this Strategy is expected to address urban sanitation management associated challenges that includes but not limited to poor coordination between different actors, increase profile of sanitation, attract investment to the sector, and increase existing capacity of stakeholders. Addressing these challenges will be expected to have a positive impact upon the political economy of the country, the natural environment and the health and wellbeing of all urban dwellers, including the most vulnerable.

Strategies

1. Raise profile of sanitation
2. Institutional arrangement
3. Sanitation financing including competition for funding
4. Advocacy, Behavioural Change Communication and Promotion
5. Capacity building
6. Regulation and enforcement
7. Service delivery
8. Technical innovation, research and development
9. Institutional sanitation
10. Emergency urban sanitation
11. Monitoring and Evaluation including national network for best practice sharing
12. Addressing cross cutting issues like Equity, Gender, Environment, Health and safety, Private sector, and Community engagement

[49] Antonio Golini, Urbanization and urban population in Ethiopia,

[50] Urban setting as per the definition given by the Ministry of Works and Urban Development and adopted by CSA update it, please, is a settlement area with 2500 people. The figure is quoted from Universal Access Plan (UAP) Document.

[51] Ministry of Urban Development and construction(MUDC), guideline for towns clustering and classification

Conclusion

The urban sanitation challenges will be expected to continue in the process of transforming the country to industrialization in GTP II unless corrective measures are taken accordingly. Thus, it needs a clear urban sanitation and hygiene strategy and action plan that enables to create equitable access with the demands of ever increasing urban population and eventually contributes to the achievement of climate resilient middle income country by 2025.

NATIONAL NEWBORN AND CHILD SURVIVAL STRATEGY (2016 – 2020), EXECUTIVE SUMMARY

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In Ethiopia, under-five mortality rate has declined by two thirds from the 1990 figure of 204/1,000 live births to 68/1,000 live births in 2012, thus meeting the target for Millennium Development Goal 4 (MDG 4) on child survival three years ahead of time. In absolute numbers the under-five deaths in Ethiopia has declined from nearly half a million, 444,000 a year in 1990, to about 196,000 in 2013. However, the mortality reduction was not uniform across the different childhood age groups, geographic and socio-demographic population groups. Disaggregation of the mortality data by age reveals that the decline in neonatal mortality is not as impressive as the infant and child mortality figures. It has fallen only by 42% during the same period; from 54/1000 live births in 1990 to 28/1000 live births in 2013. About 44% of the childhood deaths occur within the first 28 days of life, thus increasingly accounting for a larger proportion of the under five deaths. There is also wide geographic variation in under-five mortality according to the EDHS 2011 ranging from as low as 53/1000 live births in Addis Ababa to as high as 169/1000 live births in Benishangul-Gumuz region. Similarly, significant variation is also observed among different socio-economic groups within the same geographic areas.

Over two-thirds of childhood deaths in Ethiopia are caused by few and easily preventable conditions; mainly infections, neonatal conditions and malnutrition. The major direct causes of under five mortality, based on the 2014 WHO/CHERG estimates are pneumonia (18%), diarrhea (9%), prematurity (11%), newborn infection (9%), asphyxia (14%), injury (6%), measles (2%), malaria (3%), congenital anomalies (4%), HIV (2%), and others (21%). Under nutrition is a major underlying cause contributing to nearly half of childhood deaths. Even though underweight, stunting and wasting has declined by 39%, 31% and 25% respectively during the last 15 years, the 2014 mini EDHS estimates of stunting (40%), underweight (25%) and wasting (9%) are still very high.

A package of 34 high impact and cost effective newborn and child survival interventions are prioritized with coverage targets for 2020. The continuum of care approach will be used to rollout the delivery of the selected high impact newborn and child health interventions addressing particular needs of women and children across time (pre-pregnancy, pregnancy, delivery, postnatal period, infancy and childhood). The different mix of the interventions are packaged to be delivered at household/community, population oriented outreach services and individualized clinical care levels.

In rural area health posts, health centers and primary hospitals will serve as service delivery points while the health development army platform will be used to empower and engage the community. In urban areas the first entry to the health system will be health centers which will provide basic and emergency care for communities. Hospitals will serve as referral facilities for advanced newborn and child health care. The health development army working hand in hand with the urban health extension workers will be the crucial community networks that will mobilize communities and engage them in the planning and implementation of newborn and child health services in urban.

The strategy emphasizes the need for intensified effort in regions requiring equitable development to address the visible gap in survival and development of newborns and children across regions.

The goal of this National Newborn and Child Survival Strategy (2015-2020) is to reduce under five mortality from 64/1,000 (2013 level) to at least 29 /1,000, infant mortality rate from 44/1000 to 20/1000 and NMR from 28 to 11/1,000 by 2020. The key guiding principles for implementation of the revised strategy focus on: equity and accessibility; community

engagement, empowerment and ownership; efficient use of resources; innovation and use of evidence based interventions, provision of quality MNCH services, strong monitoring and dissemination of best practices. Optimal implementation of the key interventions will prevent deaths of 415,688 and 210,234 under-five and neonatal deaths, respectively, over the period of six years. Optimal implementation of the selected newborn and child survival interventions requires mobilizing a total of US$ 1.16 billion (ETB 23.2 billion) in the six year period.

ELIMINATION OF MOTHER TO CHILD TRANSMISSION OF HIV STRATEGIC PLAN 2016 - 2020

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Introduction

Despite serious challenges to economic development, Ethiopia has shown a consistent economic growth over years. The growth is characterized by various features including introduction of equal opportunity for women in the economic development of the country. The country's successive development plans have been tried to align with the global plans the heart of which is the Millennium Development Goals (MDGs). The national plans culminate at the Growth and Transformation Plan (GTP) covering the period of 2010 to 2015 encompassing specific sectoral plans including HSDP IV. The first strategic document for EMTCT (2013-2015) was a part of the HSDP IV.

HIV has been one of the major public health problems in Ethiopia since the first evidence of infection was identified in 1984. The country is in a low generalized epidemic status with a prevalence of 1.5% according to the Ethiopian Demographic Health Survey (EDHS, 2011). There is, however, high heterogeneity with varying predominance by residence (4.2% urban, 0.6% rural), region (Gambella 6.5%, 0.9% SNNPR), gender (1.9% adult women, 1% adult men), etc. The predominant mode of transmission of pediatrics HIV infection is through Mother-to-Child Transmission with an average rate of 32% for years while the 2014 Global Aids Progress Report (GAPR) for Ethiopia gives an estimate of 11%. Although the prevalence of HIV among pregnant population is declining parallel to that of the general population according to the consecutive ANC sentinel surveillances, the last one discloses the prevalence is still higher in this group of population (2.6%).

Policy and strategies

The FMOH is now revising its national health policy and formulating the new 5 years health sector plan called Health Sector transformation Plan 2016-2020. The Health Sector Transformation Plan (HSTP) is the first phase of the "Visioning Ethiopia's Path towards Universal Health Coverage through Primary Health Care", and as well part of the second Growth and Transformation Plan.

The purpose of the long-term visioning programme is to define a framework for strategic action to enable Ethiopia to achieve the health outcomes of a lower-middle-income country by 2025 and a middle-income country by 2035. The achievements and challenges in implementing the four HSDPs in general and HSDP IV in particular informed the development of the HSTP. This EMTCT strategic document commits itself to the objectives and goals of the HSTP.

The HIV/PMTCT response

There has been a multispectral national response to HIV/AIDS under the leadership of FMOH/FHAPCO with the support of the development partners and returns to investments on prevention, treatment, care and support are promising. The response has been guided by a national HIV/AIDS policy endorsed in 1998 and successive strategic plans for the multispectral response. The introduction of rapid HIV tests and ART in the early 20's with the support of the Global Fund and PEPFAR revolutionized the diagnosis, treatment, care and support to HIV/AIDS. Over 3450 and 1050 health facilities have been providing testing and ART services respectively as of June 2014. Every year 9-12 million people have been tested for HIV for the past 5-6 years. Coverage of Anti-Retroviral Therapy (ART) for eligible patients increased significantly (70%, June 2014). New HIV infections among adults declined by more than 50% between year 2005 and 2011.

Prevention of Mother-to-Child Transmission services started in 2001 but progressed slowly. However, with the adoption of the WHO's successive

recommendations, the country had been able to reduce the number of children newly infected with HIV by more than 50% between 2009 and 2012. In 2013 the FMOH developed the national strategic plan for elimination of MTCT of HIV, the forerunner of this strategic document, echoing the global move to eliminate pediatrics HIV infection and keep their mothers alive. This has galvanized the momentum of the national engagement against mother to child transmission. Over 2600 health facilities have been reported to provide PMTCT large proportion of which including option B+. By the end of a 2007 EFY, 71% of pregnant and lactating women living with HIV received a full course of efficacious Antiretroviral (ARV) regimens to prevent mother to child transmission. Nevertheless, following up HIV exposed infants remain a huge challenge. This problem is clearly evident with the fact that the proportions for Infant ARV prophylaxis, EID virology test and cotrimoxazole prophylaxis for HEI are 34%, 35% and 26% respectively while only half a year is remaining to conclude the current strategic period. The main reasons include high level of home delivery which do not allow babies to be initiated immediately on ARV after delivery, the lack of mother-baby pair tracking mechanisms after delivery, lost follow up, poor referral linkage, shortage of HIV test kit and DBS kits, long turnaround time for EID test result and weak HEI follow up system and linkage to Pediatric ART clinic when HIV infected, and incomplete documentation of Mother baby pair cohort fallow up in General. The immediate consequences are the continued risk of postnatal HIV transmission (during breastfeeding period) and the likelihood for those infected prenatally and during labor and delivery to develop Pediatrics AIDS and die unattended before their first anniversary.

More than 20,000 pregnant women and same number of HEI are expected annually over the next 5 years according to the recent national estimate. This strategic document is therefore setting a framework to appropriately and equitably respond to the needs of this huge number of women and children at national and regional levels. The FMOH recognizes that the case load is not uniform across the board in the nation and regions with higher proportion of expected HIV positive women and HEI should be supported exceptionally in their response endeavor. Accompanying this strategic document will be part the revised national comprehensive PMTCT guidelines, implementation manuals and training materials.

Goal, Objectives and Targets of the EMTCT plan

GOAL: To eliminate new pediatric HIV infection and improve maternal, adolescent, newborn and child survival.

General Objective: By end of 2020 all pregnant and breast feeding women living with HIV have access to quality, equitable services for the EMTCT.

Strategic Objectives:

- Improve leadership commitment, governance and partnership at all levels.
- Enhance community ownership through health extension program (HEP and HAD)
- Improve comprehensive, integrated (PMTCT, ANC, L&D, PNC, EPI, FP, ART, EID) equitable and quality health service for EMTCT.
- Ensure continuous availability logistics, medical supplies and commodities through strengthening supply chain management system to deliver quality PMTCT service
- Improve the health human resource competency to effectively manage EMTCT program services in the RMNCAYH platform.
- Enhance quality data generation and utilization of strategic information through strengthening effective monitoring and evaluation of the EMTCT strategic plan.

Target by 2020

- Reduce new HIV infection among children by 95% by 2020
- Reduce HIV related maternal death by 50 %by end of 2020.
- Reduce HIV related under 5 deaths by 50% by the end of 2020.
- Reduce mother to child transmit ion Rate of HIV nationally to less than 2%

Different stakeholders in the implementation of the EMTCT plan

- Special focus areas
- HIV hot spot areas
- Mega project sites/Development corridor
- Pastoralist and
- Displaced populations

Sustainable strategy and Transition

The implementing/transition partners will closely work with the FMOH and all Regional Health Bureaus. As most of the regional health bureaus have been engaged in strengthening their capacity and have taken over site level technical support for HIV care and treatment sites in the Regions; they will assume full responsibility and engage in activities that include strategic planning at regional level, site level support, clinical and systems mentoring at treatment sites, supportive supervision, and performance reviews.

Responsibility for maintaining quality of site level services will be transitioned fully to the Regional Health bureaus.

"Implementing/Transition partners" will provide technical support primarily to regional health bureaus and zonal health offices to address capacity gaps. Partners will be involved in conducting regional joint integrated supportive supervision and support regional health sector review meetings. Partners will provide support in disseminating national and regional implementation guidelines, best practices, and evaluation findings.

PMTCT sites in the emerging regions which are still supported by the international implementing partner will continue to have facility level support to improve efficiency. However, continuous monitoring and capacity assessments activities will be done to consider withdrawing the implementing partner's support from those sites.

REALIZING ETHIOPIA'S LONG-TERMPRIMARY HEALTH CARE VISION THROUGH THE 2ND GENERATION HEALTH EXTENSION PROGRAM

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Background

With the goal of making basic primary health care services accessible to the rural community, the Ethiopian government launched the health extension program (HEP) in the agrarian areas beginning in 2004. Based on lessons from the successful implementation of the agrarian health extension program, the HEP has expanded to urban and pastoral areas.

The HEP is intended to transfer ownership and responsibility of maintaining health to individual households so that communities are empowered to produce their own health. The focus of HEP is disease prevention and health promotion, with limited curative care. It is the healthcare service delivery mechanism of the people, by the people, and for the people by involving the community in the whole process of healthcare delivery and by encouraging them to maintain their own health. The program involves women in decision-making processes and promotes community ownership, empowerment, autonomy and self-reliance.

Ethiopia has come a long way in improving the health status of its people as evidenced by the achievement of most health related Millennium Development Goals (MDGs). The progress has been rapid after the inception of the HEP but large disparities still exist in coverage of key interventions both within and between districts and regions. Health extension workers (HEWs) and health centers performance can still be significantly improved by enhancing evidence based planning, decision-making, and implementation.

To guide the future of Ethiopia's PHC, Ministry of Health (MOH) drafted long-term vision with six key strategic areas. Out of the six, two are related to community ownership and redefining PHC.

Meaningful participation of community members, building community ownership of health systems, community representation in health facility governance boards, ensuring health is supported by other sectors and vice versa, increasing household production of health, and ensuring community participation in new health financing approaches were recommended to enhance community ownership to empower them to produce their own health and play their role in the health sector with the spirit of ownership.

Under the PHC redefining, establishing standard care packages at primary levels of care including revising Essential Health Service Packages (EHSP), expanding and sustaining numbers of functioning health facilities, establishing effective management

structures in Primary Health Care Units (PHCUs) and networking with higher health care facilities are crucial measures to be taken. With regard to HEP, positioning HEWs within the PHC unit structure to play a better role and developing a team-based approach to PHCU, elevating knowledge and skills of PHCU staff are essential activities. Furthermore, establishing effective healthcare governance systems, developing a well-functioning supply chain of medicines and medical equipment, quality assurance system and other supportive structures, use of appropriate technology and enhance capacity of PHCUs to handle public health emergencies are recommended.

To realize the long-term vision, MOH launches the 2nd generation HEP as described below.

Rationale

The key reasons for the launching of the 2nd generation health extension program are the followings:

1. Change in economical status and health literacy of communities and in Epidemiological Trend of Diseases

   As literacy and socioeconomic status improves, the demand for quality service is also increasing. As Ethiopia demonstrates economic growth, community's need for better quality service will increase, the trend of diseases changes with increase in the burden of communicable, non-communicable diseases, and accident and injuries, including change in population dynamics requiring change in the health system.

2. Delivery of quality and equitable primary health care services

   Although significant progress has been achieved in improving access to primary health care services, there are concerns about its quality and equitability. In the HSTP particular attention is given to provision of quality PHC services in equitable manner.

   To respond to the rapidly changing situations, the Government is currently revisiting the HEP and launching the 2nd generation HEP. Implementation of the 2nd generation HEP also pave the way for professional career development of HEWs

Objective and focus areas of the 2nd generation HEP

The main objective of the 2nd generation HEP is to enhance provision of quality and equitable promotive, preventive, and selected basic curative primary care services to all people in Ethiopia through optimal community participation for them to own and produce health.

To achieve this, the following key activities will be implemented:

1. Upgrade technical capacity of HEWs through formal training to become level IV community health nurses:
2. Introduce overall structural and functional upgrading of health posts for more and better PHC service delivery at kebele level:
3. Implement major urban PHC reform including the introduction of family health team and client categorization approach based on lessons from other middle income countries:
4. Develop and implement unique PHC service delivery modality to respond to the needs of pastoralist communities and emerging regions
5. Level I and Level II formal training, competency assessment and certification of all HDAs members phase-by-phase:
6. Create health literacy among all communities on promotive and preventive, health care:
7. Enhance community's decision making capacity so they will be able to produce their own health:
8. End preventable maternal,neonatal and child mortality through particular attention to women, adolescents and children
9. Ensure delivery of quality PHC services to all community
10. Ensure community centered continuum of care and referral services

Anticipated challenges

In the rural setting, operational difficulties of training about 3million HDAs as level I and more than 25,000 health extension workers as level IV is anticipated to be the major challenge on top of resource limitations to upgrade the structural and functional set-up of health posts.

Getting adequate number of medical doctors to serve as leaders of the family health team, ensuring collaboration among different sectors, fulfilling the logistics needed for the team including transportation, economic challenges of poor urban communities and delay in the implementation of

social and community based health insurance system, challenges related with the health management information system, commitment of health workers are few of the anticipated challenges in the urban set-up.

In the pastoralist communities and emerging regions, the major challenge will be to come-up with the appropriate, acceptable, sustainable PHC service delivery modality anticipating the mobile nature of communities and other difficulties.

Hence, mean while, MOH is working with regions to mobilize resources for the implementation of the 2nd generation HEP, which will be executed phase-by-phase as the competency and upgrading of HDAs and health extension workers progress. .

Conclusion

HEP is a household and community based health intervention that brings remarkable improvement in increasing uptake of health services and improving the health status of communities. The government of Ethiopia has also devised and implemented HDA to strengthen community health system to be more inclusive, organized, collaborative and influential. Besides, to fulfill the increasing health demand of the community, and to respond appropriately for the changing disease pattern, there was a need of further upgrading of the HEP platform. Accordingly, the 2nd generation HEP was initiated. With the implementation of the 2nd generation HEP, more and better PHC services will be delivered at kebele level, and PHC units will be strengthened to provide community centered quality and equitable services. It is realized that communities can take care of their health if they are helped to build their capacities in health promotion and disease prevention. Every household should be producer and multiplier of health. Hence, creating health literacy and health system literacy among all communities will be fundamental. As is in the 1st generation of HEP, enhance community's decision making capacity and engaging communities to take part in all program cycles - planning, implementation, monitoring and evaluation processes will be a priority in the 2nd generation HEP.

BUILDING THE COMPETENCE OF HEALTH DEVELOPMENT ARMY: **MEANS FOR EMPOWERING THE COMMUNITY**

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Background

In the 1960s and 1970s, Community Health Workers (CHW) programs began to emerge in various countries of the world. The roles and activities of CHWs are enormously diverse, which can be preventive, curative and developmental, in other cases, CHWs are appointed for very specific interventions. CHWs have an extensive history in Ethiopia dating back to the Alma-Ata declaration. Various names and scopes of practice were given to these volunteers: Community Health Agents, Community Reproductive Health Agents, Community, Health Promoters, etc. Then, after the initiation of the Health Extension Program (HEP) in 2004, a new name and organization/structure was introduced. The program recommended having 10 Volunteer Community Health Promoters (VCHP) for each Health Extension Worker (HEW).

However, due to the epidemiologic, demographic and socioeconomic transitions in the country, relying on HEWs and very few volunteers was not adequate to bring dramatic change and to reach every household and every targeted individual. In response, based on the commendable experience and role development armies played in other sectors, the government has introduced Health Development Army (HDA) in the system around 2012/13. HDA refers to an organized, inclusive and collaborative movement of the community through participatory learning and action. The HDA provides a platform which is inclusive and allow all members of the community to be organized and engaged in improving their own health status together with the HEWs. Hence, it promotes community ownership that in turn facilitates scaling up of best practices of HEP in a well-structured and near-to-community manner. The Networking and organization of families/households in the HDA is based on physical proximity (being neighborhood), and their social and cultural relation and proximity. Once the households are networked or organized, they select the leader of each network.

Figure 1: Health development army meeting in SaesieTsaeda Embaworeda –Tigray region

Figure 2: Health development team meeting in North Wollo--Amhara Region

After the introduction of this initiative, remarkable changes have been achieved in improving maternal, newborn, child and nutrition services, prevention and control of major communicable diseases and promotion of hygiene and sanitation services. To further advance this commendable achievement, it is imperative to build the capacity of HDA members.

Therefore, the Ministry of Health (MOH) have prepared a strategy to train and qualify HDAs through an organized and tailored theoretical and practical training approach which finally leads them to become competent and get certified with level I and II. Training to Level I will be given to HDAs members phase-by-phase at the Keble level by HEWs and PHCU staff for three months. To finish, trainees have to take the qualification examination provided and certified by Agency of Competence (AOC)/ Regional Center of Competence (COC), which is the designated authority. Level II trainees should first pass the level I examination. Subsequently, they will be trained for six months, and should pass the qualification exam needed to be certified for level II.

Rationale for HDA level I and II qualification

Since the introduction of the HDA, there have been significant improvements in the uptake of health services. However, as a matter of fact, behaviors unless be maintained at the desired level, it is difficult to bring sustainable improvements in healthy practices at the household level. The competence based training and the qualification reaffirms that knowledge and skills are important. Apart from the continuous discussion between the HDA leaders and followers, building confidence and then self efficacy would be key attribute to enhance further behavioral change. Taking a competence examination and receiving certification will also enhance the confidence of the HDA members to provide services more intensively.

Process of Implementation

National Qualification Framework and training

In collaboration with Technical, Vocational and Educational Training Agency (TVET), MOH has drafted National Qualification Framework (NQF) for level I and level II HDA trainings. Following the draft NQF, curriculum, assessment tools, training manual and facilitation guide were drafted and tested at the field level. For the initial pilot program, two regions – Tigray and Oromia Regional States were selected and RHBs are now testing the trainings in the selected pilot woredas. The trainings are given at the kebele level by HEWs in close supervision from the Health Centers and TVETs.

Competence assessment

The competence assessment guide and questions are prepared by the TVET agency in collaboration with FMOH. As HEWs are expected to conduct the assessment, training will be provided on basic assessment skills. Those HEWs who completed these trainings will receive certificate from the designated authority; AOC/ Regional COC entitling them as trained assessor. Accordingly, after completion of all the competencies for each level, the HDAs trainees would be assessed by certified HEWs from other woredas/ kebeles with strong supportive supervision from the AOC/ Regional COC.

Certification

When the trainee completes each unit of competence, the training institution/woreda health office will provide certificate of completion. After the trainee completes the chart of competences for each level, they are expected to take the qualification examination approved by AOC/ Regional COC.

Anticipated challenges

The nature of competence based training which requires extended period of time to complete each competence may not attract the trainees to join or complete the training. Shortage of demonstration materials and the venue for the training might not be also an attractive place to come and stay for long hours in a day. Moreover, low literacy level at the community might affect the confidence of trainees and may hold them to take exams. Having competing priorities including the household work and multi-sectoral involvement of the HDA members might also affect their commitment for the training and service provision.

Conclusion

Ethiopia has demonstrated that low income countries can achieve improvements in health status and access to health services through the implementation of HEP. The HDA is amplifying the health gains as a result of the HEP. Through the HEP and HDA platform, the health system has invested a huge amount of resources and time transforming knowledge and basic skills to the households and made them produce their own health. This intervention has been effective and contributed to the improvement of health in Ethiopia. The current requirement of recognition of the graduated model households by AOC/ Regional COC demands qualifying of the HDAs members for the set of competencies. The competency levels describe the levels of competency of the HDAs members that required performing community health activities effectively. Hence, taking the examination and having qualification to level I and level II would boost the confidence of households/women to further improve the health and wellbeing of the residents of their households and neighborhood. In addition, the program provides an opportunity for the HEWs to delegate some of their responsibilities to the qualified HDA members.

ONEHEALTH TOOL IN HEALTH SECTOR EVIDENCE BASED PLANNING

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Introduction

The **OneHealth Tool** is designed to strengthen health-system analysis, strategic planning and costing with the primary purpose of assessing public health investment needs. Primary users of the OHT are health planners and programme managers at all levels in the health system.

The **OneHealth Tool** was designed by the UN Interagency Working Group on Costing to:

- Inform sector-wide strategic health planning;
- Link health targets to required investments;
- Estimate health impact of investments through the Lives Saved Tool (LiST), Aim, TB Estimates, FamPlan and other epidemiological modeling tools; and
- Provide health planners with a single and an integrated framework for scenario analysis, costing, health-impact analysis, budgeting and financing of strategies for all major diseases and health-system components.

The health sector transformation plan was prepared using OneHealth tool (OHT). In which OHT was used for costing, assist setting targets of each implementation years of HSTP, and impact estimation. Using this approach all regions and woredas prepared their five year transformation plan following the health sector transformation plan. During customization process of the tool to the country context additional health service programmes such as Neglected Tropical Diseases (NTD), Clinical Services, Injury Prevention, Emergency and Critical Care, Blood Safety, Health Extension Programme and Diagnostic Services were included to the OHT. Human resource for health, health infrastructure and service delivery levels were also customized to the country context.

Additionally the health system component included in the OHT were Health infrastructure, Logistics,

Health information systems, Health financing and Governance.

Target Setting of HSTP Using OneHealth Tool

Together with balanced scorecard, a framework used to prepare HSTP, OneHealth tool assisted target setting for interventions included in the planning. The final year target for the HSTP was decided by the planners and programme managers considering the global commitments, impacts expected as per the Envisioning Ethiopia's Path towards Universal Health Coverage through Strengthening Primary Health Care (20 year strategy), and other conditions. The targets for each year were decided considering the investment approaches to be followed for the interventions/programmes. The investment approaches followed by the tool for the target setting were Linear, S-shape, Exponential and Front loaded. Finally the health interventions with their targets were linked to the indicators used in health management information system in order to form the monitoring and evaluation framework of the HSTP.

Four health service delivery levels were identified for providing the interventions under the health service which include community, health post, health center/primary hospital and General/specialized hospital level. Other service delivery such as WASH (other than health sector) and Private sector were also considered during planning using OHT.

Costing of HSTP Using OneHealth Tool

The costing approach followed in OneHealth tool is ingredient costing approach in which the drugs and supplies, health professionals delivering service and facility utilization (inpatient and outpatient utilization) for delivering the health interventions are converted to monetary value. The Health system components are also costed. Programme management costs are included for both health service and health system components.

What Makes OHT Different from MBB (planning Tool that was used for Costing HSDP III and IV)?

OHT do have better features that help to robustly cost HSTP. Other than MBB, OHT enable to:-

1. Cost all levels of service delivery including hospital,
2. Plan for all components of the health system and health programmes included in the service delivery,
3. Estimate impacts for health interventions including non-communicable diseases.

Future recommendations for improving the tool

- During target setting, it is better if the tool enable to map the interventions to the indicators that the sector uses for monitoring the system,
- It is better if the tool can work for the sub-national and sub-regional levels. Aggregate and show the results upward. Also apply changes made at one level to the others

Section 4:
Research Article

ABSTRACT

MATERNAL AND NEWBORN HEALTH SERVICE PROVISION IN ETHIOPIA - SPA+

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Background: There are multiple components that will influence the provision of maternal health service including availability of infrastructure; staff deployment and presence; and availability and quality of laboratory services provided. The major objective of the survey is to assess the availability and preparedness of health facilities in Ethiopia to provide quality maternal health services.

Method: The assessment is part of the 2014 Ethiopia Service Provision Assessment Plus (ESPA+) Survey. A total of 1,327 health facilities were assessed. All Hospitals, selected health center, private clinics, and Health posts were assessed. Data were collected using four instruments: Inventory, observation, health worker, and exit.

Result: 90% of health posts and 87% of all other facilities type in Ethiopia offer temporary modern family planning methods. Only 17% of health facilities offer male or female sterilization services.

Overall, 87 percent of all facilities offer ANC services. Over 90 percent of hospitals regardless of type, health centers and health posts offer ANC services, compared with a little over half of higher, medium and lower clinics. Government (93 percent) and NGO facilities (80 percent) are more likely than those managed by other authorities to offer antenatal care services. In general, almost three-quarters (74 percent) of health facilities offer ANC services 5 or more days per week in over 90 percent of all health facilities regardless of type except for health posts. Almost two-thirds of health posts offer ANC services 5 days or more per week. A significant proportion of facilities (78 percent) provide tetanus toxoid vaccine

to pregnant women, but only 44 percent of facilities that offer ANC services also offer TT vaccines on the days that ANC services are offered.

In general, six of every ten ANC facilities provide PMTCT services. PMTCT services are universally available in hospitals and in 80 percent of health centres that offer ANC service. Eight of every ten government and NGO managed facilities that offer ANC services also offer some component of PMTCT services. Among ANC facilities that offer PMTCT services, availability of each of the assessed components of PMTCT varies. (1) HIV testing and counselling for pregnant women are available in almost all facilities. (2) Infant and young child feeding counselling, (3) nutritional counselling for HIV-positive pregnant women and their infants, and (4) family planning counselling for HIV-positive pregnant women are each available in nine of every ten facilities. All remaining components of PMTCT are less available than the other services in about half of the facilities.

In general, trained staff, and ITNs are available in about two of ten ANC facilities excluding health posts and in about three of ten ANC health posts. However, ACT for the treatment of malaria, malaria rapid diagnostic test kits and functioning microscope with glass slides and relevant stains for malaria microscopy are available in almost half of the ANC facilities on the day of the visit. Furthermore, less than a third (26 percent) of ANC facilities had the capacity to test for haemoglobin.

Normal delivery services are available in 65 percent of all health facilities excluding health posts. These services are available in health centres (99 percent) and primary hospitals (98 percent), a little less available in general hospitals (93 percent) and referral hospitals (88 percent). Less than half of the remaining health facilities offer normal delivery services (medium clinic 38 percent, higher clinic 30 percent and lower clinic 24 percent). Forty five percent of health posts offer normal delivery services.

In general, providers reported administering more parenteral oxytocic (76 percent) and antibiotics (63 percent) than anticonvulsant (20 percent). Parenteral oxytocic and antibiotics were almost universally available in hospitals regardless of type and universally available in other governmental facilities. Overall assisted vaginal delivery was the most frequent signal function carried out (83%). Manual removal of placenta, removal of retained products of conception (MVA) and neonatal resuscitation were carried out in seven of every ten health facilities offering normal delivery (68%, 67% and 68%, respectively). Blood transfusion and Caesarean delivery were the least performed with 4 percent and 5 percent respectively.

Almost all facilities (97%) practiced breastfeeding within the first hour and provide complete examination of the baby before discharge. Providers in health post (89%) are most likely to receive personal supervision while referral hospital (31%) are least supervised.

Conclusion: Few facilities provide Male or female sterilization services in Ethiopia. Most facilities in Ethiopia provide ANC and temporary modern Family Planning service. Blood transfusion and Caesarean delivery were the least performed signal functions. Almost all facilities (97%) practiced breastfeeding within the first hour and provide complete examination to the baby before discharge.

TUBERCULOSIS SERVICE PROVISION IN ETHIOPIA

Theodros Getachew[1], Abebe Bekele[1], Atkure Defar[1], Mekonnen Tadesse[1], Habtamu Teklie[1], Kassahun Amenu[1], Terefe Gelibo[1], Yibeltal Assefa[1], Amha Kebede[1]
[1] Ethiopian Public Health Institute

Background:

The survey is designed to generate a set of indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening. The major objective of the survey is to assess the availability and preparedness of health facilities in Ethiopia to provide quality tuberculosis services.

Method:

The survey was part of the 2014 Ethiopia Service Provision Assessment Plus (ESPA+) Survey. The sample for the survey was a stratified random sample designed to provide representative results for Ethiopia, for different facility types and different management authorities, and for each of the 11 regions of the country. A total of 1,327 health facilities were assessed. All Hospitals, selected health center, private clinics, and Health posts were assessed. To achieve the objectives of the assessment and to capture information from the different categories, data were collected using four instruments: Inventory, observation, health worker, and exit.

Result:

Overall, more than two out of three (69 percent) facilities excluding health posts in Ethiopia offer any TB diagnostic, treatment or/and treatment follow up services. Among all health posts, 29 percent of them offer any TB diagnostic services and any treatment and/or treatment follow up services. Six in ten (59 percent) of facilities excluding health posts use sputum smear only to diagnose TB. Among facilities excluding health posts offering any TB services, 44 percent have guidelines for diagnosis and treatment of TB, 18 percent have guideline for diagnosis and treatment of MDR-TB, and 9 percent have guideline for management of HIV and TB co-infection. Of those facilities offering any TB services more than half (60 percent) have trained staff. Among facilities excluding health posts offering TB diagnosis, treatment and/or follow up services, 52 percent have diagnostic capacity using TB smear microscopy, while very few reported having TB x-ray (6 percent) and rapid diagnostic test kits (2 percent). Among facilities providing TB diagnosis or/and treatment, less than half of the facilities have soap (44 percent) and running water (38 percent), while only 28 percent have both water and soap.

Conclusion:

In more than half of the facilities in Ethiopia excluding health post any TB diagnostic, treatment or/and treatment follow up services is available but low in health posts. Half of the health facilities in Ethiopia excluding health post have guidelines for diagnosis and treatment of TB and one in five have guideline for diagnosis and treatment of MDR-TB. Readiness to prevent infection is low in health facilities.

LABORATORY DIAGNOSTIC CAPACITY IN ETHIOPIA: **HEALTH FACILITY ASSESSMENT**

Theodros Getachew[1], Abebe Bekele[1], Atkure Defar[1], Mekonnen Tadesse[1], Habtamu Teklie[1], Kassahun Amenu[1], Terefe Gelibo[1], Yibeltal Assefa[1], Amha Kebede[1]

[1] Ethiopian Public Health Institute, Addis Ababa, Ethiopia

Background:

The survey is designed to generate a set of indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening. The major objective of the survey is to assess the availability and preparedness of health facilities in Ethiopia to provide quality laboratory services.

Method and Materials:

The assessment is part of the 2014 Ethiopia Service Provision Assessment Plus (ESPA+) Survey. A total of 1,327 health facilities were assessed from all over Ethiopia. All Hospitals, selected health center, private clinics, and Health posts were assessed.

Results:

Fifty seven percent of the facilities excluding health posts in Ethiopia have laboratory diagnostic service. HIV diagnostic test (59 percent) is the most commonly provided basic laboratory services. Liver or renal function test is the least (7 percent) provided laboratory service in Ethiopia. Twenty three percent of facilities excluding health posts provide haemoglobin tests. Facilities managed by Non-governmental organisation (40 percent) are most likely to offer haemoglobin test and facilities in urban areas are more likely (37 percent) to offer the services than facilities in rural areas (13 percent).

CSF/body fluid count test (45 percent), and stool microscopy (42 percent) is the most commonly provided advanced laboratory services in Ethiopian facilities. CSF/body fluid count test is almost universally available across all hospitals, higher clinics, and medium clinics.

Twenty percent of facilities excluding health posts provide gram stain test, almost all referral hospitals and general hospitals (94 percent), and majority of higher clinics (88 percent) offer this test.

Serum electrolyte test (10 percent), full blood count with differential (10 percent), blood typing and cross matching (3 percent), CD4 count (3 percent), syphilis serology (3 percent), TB culture (1 percent), and TB rapid tests (less than one percent) are the least available advanced diagnostic services in Ethiopian facilities excluding health posts.

In less than 10 percent of the facilities in all regions offer CD4 count test. One in four facilities in Addis Ababa, Harari, and Dire Dawa are offer serum electrolyte, and full blood count test. X-ray and ultrasound diagnostic is available only in (4 and 6 percent respectively) of facilities. Fifty three percent of the health posts provide malarial diagnostic tests and fourteen percent of the health posts offer HIV diagnostic test in Ethiopia.

Conclusion:

The assessment indicated gaps in most of the laboratory services which could considerably impact quality and accessibility of diagnosis. The results of this assessment suggest that that the need to improve the capacity of diagnostic laboratories to offer quality services across health facilities in the country.

HEALTH CARE PROVIDER'S CLINICAL KNOWLEDGE AND STAFF ATTENDANCE IN ETHIOPIA

Theodros Getachew[1], Atkure Defar, Abebe Bekele[1], Mekonnen Tadesse[1], Habtamu Teklie[1], Kassahun Amenu[1], Terefe Gelibo[1], Yibeltal Assefa[1], Amha Kebede[1], Alemayehu Ambel[2], Colin Andrews[2]
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Background:

Health worker knowledge and clinical competency are the vital in providing quality health care services. Adequate health worker presence all of the time is also a must to provide service, when health workers are absent, unfairly burdened with the workloads of their absent colleagues and access to care may be compromised. This assessment is designed to generate a set of indicators on key inputs and outputs of the health system, which can be used to measure progress in health system strengthening. The major objective of the survey is to assess the health provider's clinical knowledge of selected disease conditions in Ethiopia to provide quality health services and health worker absenteeism.

Method:

The assessment is part of the 2014 Ethiopia Service Provision Assessment Plus (ESPA+) Survey. From a total of 1,327 health facilities, 4,807healthcare providers were assessed form All Hospitals, selected health center, and private clinics were included. Health posts staffs were not included. The approach in general follows the World Bank's Service Delivery Indicators (SDI) methodology.

Results:

A total of 4,807 health providers responded to the clinical knowledge section of health workers questionnaire. Of the total 4,859 eligible respondents 4,807 (98.9 percent) of them participated in the clinical knowledge assessment. In general, diagnostic accuracy for PTB is 86 percent, for PPH (71 percent), for birth asphyxia (56 percent), and for malaria (71 percent). The overall diagnostic accuracy, i.e. the average of the four disease conditions is 71 percent. Overall, the adherence of providers to clinical guidelines with respect to client history taking, physical examination, and investigation of PTB case is 47 percent, 59 percent, and 55 percent respectively. The adherence of providers to clinical guidelines with respect to client history taking, physical examination, and investigation for malaria or malaria with anaemia is 34 percent, 35 percent, and 38 percent respectively. Adherence of providers to clinical guidelines with respect to client history taking, physical examination, and investigation for PPH is 48 percent, 44 percent, and 51 percent respectively. Provider adherence to clinical guidelines with respect to physical examination of birth asphyxia is 33 percent. Adherence to management of birth asphyxia is 61 percent. Over all, staff absenteeism was 33 percent irrespective of the reason. Out of which unapproved was 9 percent. Maximum absenteeism was recorded in the health posts (16 percent).

Conclusion:

Overall diagnostic accuracy based on the average of four disease conditions is low. It varied by disease condition, professional category, and facility type. Adherence to clinical guidelines is crucial to consider client history taking, physical examination, investigations, and treatment and general management of the disease condition. There is a considerable practice gap in adhering to the required clinical guidelines. The staff attendance suggests that there is a room to improve staff availability at the facility. Transparent staff work assignment and control mechanism should be in place in the all health facilities.

ASSESSMENT OF HEALTH FACILITY INFRASTRUCTURE IN ETHIOPIA: **IMPLICATION ON THE PROVISION OF QUALITY HEALTH SERVICES**

Theodros Getachew[1], Abebe Bekele[1],Atkure Defar[1], Habtamu Teklie[1], Mekonnen Taddesse[1], Kassahun Amenu[1], Terefe Gelibo[1], Asfaw Kelbessa[2], Yibeltal Assefa[1], Amha Kebede[1]
[1]Ethiopian Public Health Institute, Addis Ababa, Ethiopia
[2]Ministry of Health

Background:

There are multiple components that will influence the provision of maternal health service including availability of infrastructure; staff deployment and presence; and availability and quality of laboratory services provided. The objective of this assessment is to identify gaps in the support services and infrastructure that are used to provide health services and that may negatively affect the ability of facilities to provide quality services.

Method:

The assessment is part of the 2014 Ethiopia Service Provision Assessment Plus (ESPA+) Survey. A total of 1,327 health facilities were assessed. All Hospitals, selected health center, private clinics, and Health posts were assessed.

Result:

In general, about half of the facilities have regular, uninterrupted electricity (i.e., the facility is connected to a central power grid, or has solar power or both, and power is routinely available during regular service hours), or has a functioning generator with fuel. As expected, all hospitals regardless of type (88 to 100 percent) and higher clinics (84 percent) are more likely than medium clinics and health centres (61 and 57 percent respectively) to have regular, uninterrupted electricity. Lower clinics are the least likely to have regular, uninterrupted electricity. Other government facilities and NGO facilities are also more likely than private and Government facilities to have regular, uninterrupted electricity. Fewer than 3 in ten health posts have regular, uninterrupted electricity.

In general, over three quarter of all facilities have an improved water source in the facility (i.e., water is piped into the facility or onto facility grounds, or else water is from a public tap or standpipe, a tube well or borehole, a protected dug well, or protected spring, or rain water, or bottle water), and the outlet from this source is within 500 metres of the facility. However, health centers are less likely than other types of facilities to have an improved water source (71 percent). Forty five percent of health posts have an improved water source.

On average, fewer than three of every four facilities (74 percent) have a functioning client latrine. However lower clinics (59 percent) as well as health facilities managed by Private for profit (67 percent) are less likely to have a functioning client latrine. A little over half of health posts have a functioning client latrine.

Overall, transport for emergencies is available in two third of all facilities (i.e., the facility has a functioning ambulance or other vehicle for emergency transport that is stationed at the facility and had fuel available on the day of the survey), or else the facility has access to an ambulance or other vehicle stationed at or operating from another facility. Medium clinics and lower clinics are the least likely to have emergency transport, at 40 percent and 34 percent respectively. Over seven of every ten health posts have emergency transport.

Among all facilities excluding health posts, a little over forty minutes is the average travel time from the health facility to the ambulance station. It takes an average of 5 minutes for hospitals. In Somali region, an average of over two hours is required to reach an ambulance station (138 minutes for health posts and 161 minutes for all other health facilities).

Conclusion:

About half of the facilities have regular, uninterrupted electricity and over three quarter of all facilities have an improved water source in the facility.

ARTICLES:

A SHIFT IN THE PREVALENCE OF TRANSFUSION TRANSMITTED TRANSMITTED INFECTIONS AMONG BLOOD DONORS IN BAHIR DAR BLOOD BANK, NORTHWEST ETHIOPIA

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1-Ethiopian Blood Bank Service, Addis Ababa, Ethiopia;
2-Bahir Dar blood bank, Bahir Dar, Ethiopia

Background

Transfusion is one integral part of medical care given to patients but it has its own risk of transmitting blood borne infections for recipients. Transfusion transmitted infections (TTI) are a great concern of safety for patients. The magnitude of TTI varies from country to country depending on TTIs' loads in that particular population from where blood units are sourced. Multiple measures are taken to minimize TTI transmission in the respective population.[54]

Only continuous improvement and implementation of donor selection, sensitive screening tests, and effective inactivation procedures can ensure the elimination, or at least reduction, of the risk of acquiring TTIs. [55]

The safest blood donors are voluntary and non-remunerated blood donors from low-risk populations. Global fact in 2011 showed, in 62 countries, national blood supplies are based on 100% or almost 100% (more than 99.9%) voluntary unpaid blood donations. Forty countries collect less than 25% of their blood supplies from voluntary unpaid blood donors. The World Health Organization's (WHO) goal is for all countries to obtain all blood supplies from voluntary unpaid donors by 2020 in accordance with World Health Assembly resolution 28.72, which was adopted in 1975. [56]

This study compares and analyzes the trends of the prevalence of TTIs among blood donors in Bahir Dar at 2006 and 2015. Bahir Dar city is located 650 km from Addis Ababa in Northwest Ethiopia.

Methods

This is a desk-top review of registrations in the Bahir Dar Blood Bank. A total of 1,973 blood unit of blood was collected from February to May 2015. All of the collected blood was screened for HIV, HBV, HCV & syphilis. Fourth generation Ag-Ab Enzyme-linked immunosorbent assay(ELISA) test (Vironstica) was used for screening of HIV, commercial ELISA kits were used for HBV& HCV and Syphilis screening.

Results and discussions

All of the 1,973 donations were collected from voluntary non remunerated blood donors. From the total donations 1,357 (68.8%) of the collection were from male donors and students were with the highest percentage of blood donors. (See Table 1)

Table 1:
Socio demographic characteristics of blood donors in Bahir Dar blood bank, Feb – May 30, 2015

Characteristics	Number	Percent
Sex		
Male	1357	68.8
Female	616	31.2
Age range		
15-19	458	47.7
20-24	941	23.2
25-29	231	11.7
30-34	119	6.0
35-39	83	4.2
40-44	54	2.7
45+	87	4.4
Occupation		
Student	1363	69.1
Civil Servant	301	15.3
Farmer	85	4.3
Private Worker	84	4.3
NGO Employee	60	3.0
Others	80	4.0

[54] N. Choudhury, "Transfusion transmitted infections: how many more?" Asian Journal of Transfusion Science, vol. 4, no. 2, pp 71–72, 2010
[55] Tiwari BR, Ghimmire P, Karki S, Raj Kumar M, 2008. Sero prevalence of human immunodeficiency virus in Nepalese blood donors: A study from three regional blood transfusion services. Asian Journal of Transfusion Science, 2: 66-68.
[56] http://www.who.int/bloodsafety/voluntary_donation/en/

A marked increase in the number of voluntary donors was observed from 10.5% in 2006 to 100% in 2015. The voluntary blood donation has increased by 9.5 fold (with 95% CI: 6.9, 13) in 2015 as compared to 2006.

The overall prevalence of Transfusion transmitted infections (TTIs) among blood donors in 2015 was 5.1 %, whereas in 2006, it was 43.2%, among 324 donors (10.5% voluntary donors)[57]. In 2006, the prevalence of TTIs was 8.5 (95% CI: 6.8, 10.6) times higher than that of 2015.

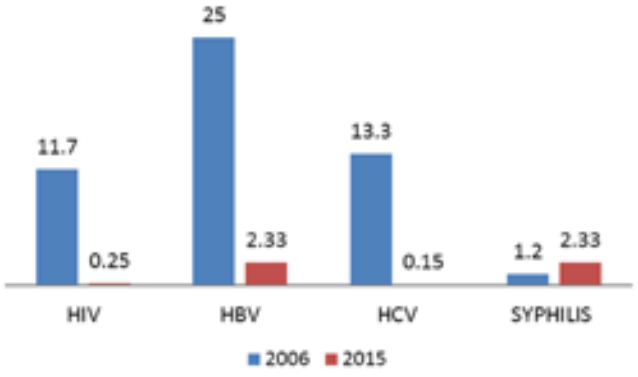

Figure 1: Prevalence of TTIs among blood donors , in 2006 and 2015 , Bahir Dar

There is a marked decline in sero prevalence of the major blood borne infections (HIV, HBV & HCV) in 2015 as compared with that of 2006. The prevalence of syphilis seems higher and this is due to the change in diagnostic kit for syphilis from RPR to ELISA. The sensitivity of the newer test is much higher but the other TTI markers were screened by similar test kit and procedures in 2006 and 2015.

Conclusion

This study showed that there is a significant reduction in blood borne infections among blood donors. This reduction is due to the increment of voluntary blood donor contribution and improved donor selection criteria. Even if there is a reduction in the prevalence still much has to be done to improve the safety of blood and blood products.

NATIONAL LEPROSY MAPPING

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[1]All African leprosy tuberculosis and rehabilitation training hospital, dermatology department, Addis Ababa, Ethiopia
[2]German Leprosy and Tuberculosis Relief Association, Addis Ababa, Ethiopia
[3]Ethiopian Federal Ministry of Health, Disease Prevention and Control Directorate, Addis Ababa, Ethiopia
[4]The Leprosy Mission International, Addis Ababa, Ethiopia

Introduction

Leprosy is still considered an important public health problem due to its morbidity and socioeconomic impact, both of which are consequences of complications (e.g., physical disabilities and deformities) that develop during the clinical outcome of the disease [1-2]. Approximately 200,000 new cases are diagnosed and reported annually worldwide, with the highest prevalence in inter tropical developing countries such as India, Indonesia, Brazil, Myanmar, Nepal, and African regions like DR Congo and Ethiopia[3].Globally 14 countries were considered as high leprosy endemic countries reporting more than 1,000 cases annually[3].Ethiopia is one of the countries reporting more new cases, with highest disability grade II and childhood leprosy among new leprosy cases that indicates ongoing transmission of disease in the community (figure 1). Leprosy control has benefitted greatly from the implementation of MDT, which has enabled the disease to be cured and reduced the number of new grade 2 disability cases; consequently stigma associated with leprosy and resultant discrimination against those affected have been reduced. There have also been economic benefits, with reduction of health system costs incurred for disability care, reconstructive surgery and rehabilitation[3].

[57]Seroprevalence of major blood-borne infections among blood donors at FelegeHiwot referral hospital, northwest Ethiopia, Azene D. Bayeh A. Fisseha W., EthiopiaJ. Health Dev.2007;21(1):68-69. [1]Moschioni C, Antunes CMF, Grossi MAF, Lambertucci JR (2010) Risk factors for physical disability at diagnosis of 19,283 new cases of leprosy. Rev Soc Bras Med Trop 43: 19-22. [2]Kumar A, Girdhar A, Girdhar BK (2012) Risk of developing disability in pre and post-multidrug therapy treatment among multibacillary leprosy: Agra MB Cohort study. BMJ Open 2: e000361. [3]World Health Organization (2013) Leprosy update, 2013. WklyEpidemiol Rec 87: 317-328.

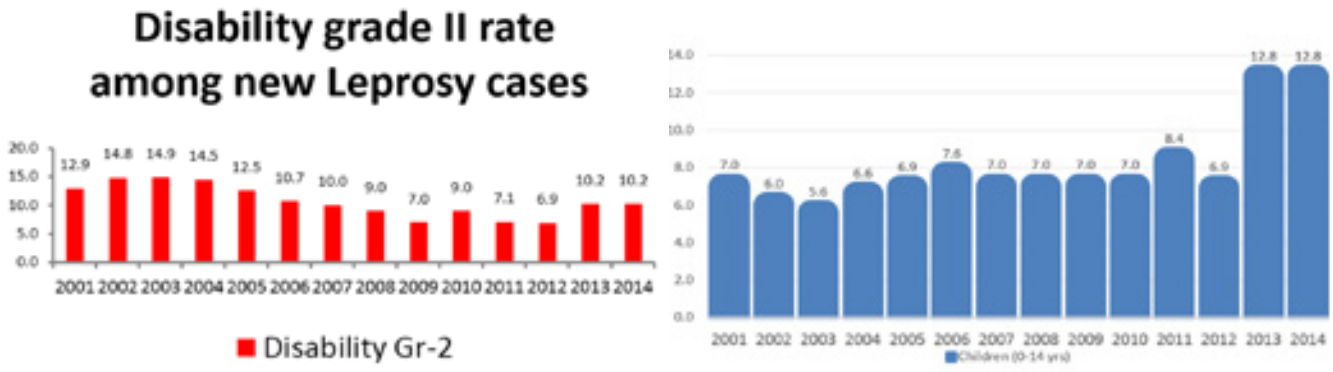

Figure 1:- trend of grade two disability and child rate among new leprosy patient

Rationale

The geographical distribution of leprosy cases within a country is not uniform and there is tendency to clustering of cases under low prevalence situations. Leprosy cases distribution at sub regional level (zonal or woreda) were not identified.4 Besides, yearly notification rate remained constantly above 4000 cases and the proportion of childhood leprosy cases among notified new cases also remained stable between 5 – 7% for the last one decade. It is therefore necessary to conduct leprosy mapping at different levels of administrative units (by zones, woreda and health facilities) to identify areas and groups of population with high endemic areas in order to utilize the limited resource efficiently and provide the necessary response accordingly. [58]

Methodology

Geographically, the mapping covered all woredas in regions and extracts annual leprosy report from health facilities' Leprosy register from2000- 2005 EFY. (6 year data). Total of 768 Woredas and 2,605 public health facilities submitted the mapping data. Annual leprosy case reports from all public health facility Leprosy registers were extracted. The data was collected by woreda TBL experts under close supervision of respective Zonal health departments and Regional health bureau. To facilitate the data collection and improve the quality of data, one day training /orientation was given for regional and zonal TBL coordinator on the data collection tool.

Result

The mapping results shows among the 837 woreda found in the country, 768 (92%) have submitted the complete data based on the questionnaire. According to the mapping result, average annual new leprosy case were 3,851 reported, equivalent to new leprosy case detection rate of 4.7 per 100,000 population, with national case notification rate. Mapping result also shows Grade 2 disability rate of 11%, and nearly 7% of the total new leprosy cases were children, male-to-female ratio at national level was 2.2[Table 1]. The annual new case report from mapping doesn't differ remarkably from the routinely reported data (HMIS) [(Pr (|T| > |t|) =0.484)].

Table 1:

New leprosy cases versus grade II disability, child cases and male to female ratio 2000-2005EFY

Name of hospital In Addis Ababa	# Functional	# Non -Functional	Total	% Non-Functional
Gandi Memorial Hospital	82	83	165	50%
RasDestaDamtew Hospital	153	32	185	17%
Yekatit 12 Hospital	211	134	345	41%
Minilik 2nd Hospital	152	106	258	41%
Tirunesh Beijing Hospital	120	10	130	8%
Zewiditu Hospital	124	54	178	30%
St. Peter Hospital	212	67	279	24%
Amanuel Specialized psychiatry Hospital	51	52	103	50%
Black lion specialized Hospital	806	180	986	18%
ALERT Hospital	150	75	225	33%
Grand Total	2061	793	2854	28%

[58]The WHO African Region Strategic Plan for Further Reducing the Burden of Leprosy 2013 – 2015: Version of February 2013.

Despite achieving the elimination target of 1 case per 10,000 population in the year 1999 through implementing WHO recommended policies and strategies, there remain pockets of 'high endemicity' at sub-national levels, where the leprosy prevalence is still higher or equal to 1 case per 10,000 population, according to the finding from the mapping there are 93 woredas/districts having a leprosy prevalence rate >1 per 10,000 and falls in the category of high leprosy burden woreda/districts, 121 woredas fall in medium leprosy burden, 325 under low burden and nearly a quarter of woredas (226) reported zero leprosy cases which are declared as leprosy free woredas based on the national developed operational definition that requires further assessment for full blown declaration of this sites. These 93 high leprosy burden woredas were reported 54% of all leprosy cases. Those 121 and 325woredas who's categorized as medium and low leprosy burden woredas were reported 28% and 19% leprosy cases, respectively. This result is clear indicating that more than half of leprosy cases were reported to the national level only from few woredas (high and medium burden takes biggest share)[Figure 1]. The three main regions in Ethiopia constituted 91% of all the cases reported, 2,046(49%)

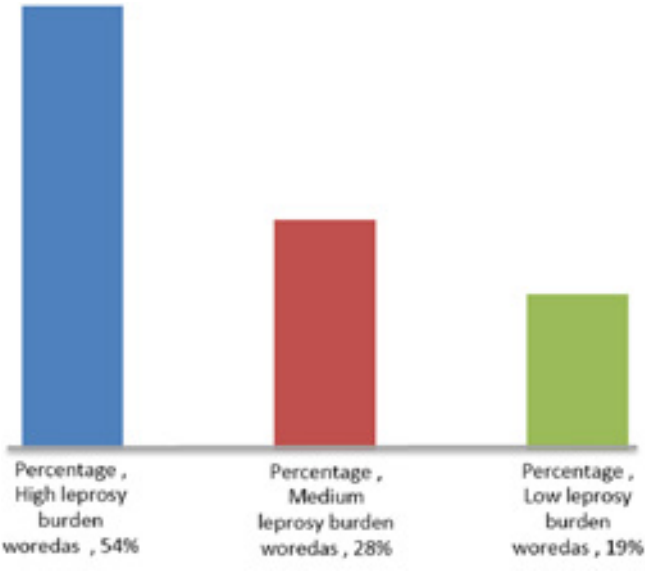

Figure 2: Percentage of all leprosy cases reported from high, medium and low leprosy burden woredas

leprosy cases were reported from Oromia followed by Amhara region accounts 1,409 (34%) cases and SNNPR region 348(8%) of national reported leprosy cases. Nearly 26 zones are carrying a larger leprosy burden than others.

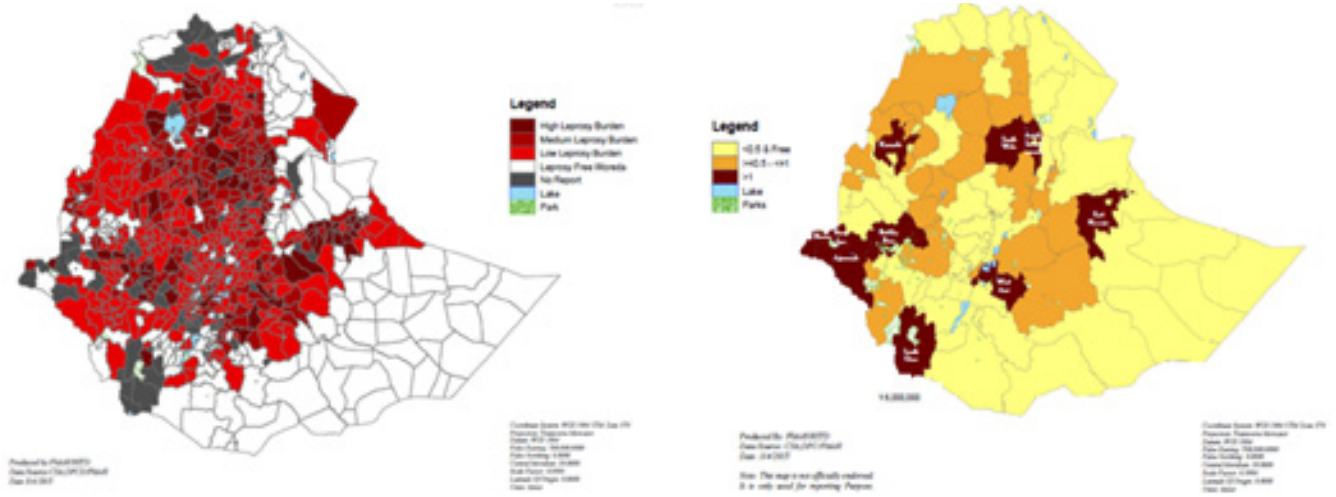

Figure 3: Map of leprosy prevalence by zone and Woredas of Ethiopia

The mapping finding also shows 58 woredas are detecting and reporting disability grade II rate > 10% for the past six years and 61 woredas reporting child leprosy > 5 % over the past six years. Majorities of these woredas were in high and medium burden classification. Out of the total health facility, 76% of them were involved in providing leprosy services to the community, health centers accounts 77% and hospital accounts for 60%, respectively. Nearly 69 health facilities have reported at least 12 new leprosy cases annually. Shashamane referral, Jinka and Borumeda hospital were reporting more than 50 new leprosy cases annually in which majority of them were health facilities referral. Majority of health care workers in TBL clinic have trained on comprehensive TB, TB/HIV and leprosy training in the past 2 years, however structured clinical 2 weeks and 4 weeks focused training on leprosy in all regions was limited. Furthermore lack of adequate supply of MDT, recording and reporting formats were problems identified through the assessment.

Conclusion

The mapping has identified 93 leprosy hot-spot Woredas contributing to over half of national burden. These finding will help the control program to institute a locally adjusted intensive and targeted leprosy interventions to reduce the burden in hotspot areas (Amhara, Oromia and SNNPR contribute to over 90% leprosy burden in the country). There is a need to ensure early case finding by regular screening of all household contacts of cases, awareness creation among communities on early diagnosis and treatment, training of staff to improve their skills, ensure adequate distribution of MDT, socio-economic rehabilitation and leprosy monitoring and evaluation activities in those high leprosy endemic Woredas in order to reduce disease burden and ultimately attaining leprosy elimination targets in these Woredas and nearby.

Further population based studies will be needed in order to assess any pilots of adjusted responses on the ground by conducting active case finding in selected areas, with the inclusion of contact tracing, geographical distribution of cases, environmental studies and education campaigns.

Post survey intervention

- Based on this result Clinical Leprosy focused training was conducted in 8 rounds concurrently starting from analysis of the finding, dissemination of the result was provided for all regional focal points and stakeholders, Micro plan was developed in collaboration with Regional, and Woreda TBL focal for each high burden woredas.
- Micro plan was developed with all high burden woredas for undertaking focused intervention in the identified areas.

PATIENT SAFETY CULTURE AND ASSOCIATED AMONG HEALTH CARE WORKERS IN PUBLIC HOSPITALS IN ADDIS ABABA, ETHIOPIA, JULY 2015

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Introductions:

Globally unsafe medical care is a major source of morbidity and mortality throughout the world. Although estimates of the exact size of the problem are not known it is likely that millions of people suffer disabling injuries or death which can be directly attributable to unsafe medical care. Nearly one in ten patients is harmed while receiving health care even in well-funded and technologically advanced hospital settings. Evidence reveals that Hospitals need to build a positive patient safety culture to reduce adverse events and improve patient safety.

Patient safety is a global public health issue and an important component of healthcare quality. Previous effort has on improving the structures and processes of healthcare delivery whereas recent attention has focused on the patient safety culture of an organization and its impact on patient outcomes. Patient safety culture is widely recognized as a significant driver in changing behavior and expectations to increase and emphasize safety within organizations. Patient safety and the initiative of developing safety cultures to prevent patients from harm have slowly but steadily become one of the central concerns in quality improvement, where it plays a significant role in patient safety and influence safety and outcomes in healthcare.

A positive safety culture consists of a well-working reporting culture, safety committed leader actions, organizational learning, teamwork, proper handoffs and a non-punitive response to error. The professional culture of doctors has sustained the idea of infallibility, maintaining that "good" doctors do not make mistakes. A positive safety culture works

towards creating openness about errors, arguing that anyone can make mistakes no matter how competent they might be, and provides support for patients and its healthcare members following adverse events. It has been argued that a positive safety culture is essential for minimizing the number of preventable patient injuries and their overall cost to society. At the same time, there is also an increasing recognition of the necessity to determine the relationship between the effects of safety culture on healthcare outcome.

Evidence suggests that poor patient outcomes result from flawed systems, faulty processes, poorly designed work environments, misaligned and missing interactions, substandard performance, deficient training, and inadequate management practices that enable human fallibility. Professional and organizational cultures in health care must undergo a transformation in the interests of promoting safer patient care. Health care must come to see itself as a high hazard industry which is inherently risky. Knowing the current state of patient safety culture in public Hospitals is crucial and basic steps to achieve it.

Objectives: This study was targeted on assessing patient safety culture and associated factors among Health care workers in public Hospitals in Addis Ababa, Ethiopia.

Methods: Institution based cross sectional study with stratified random sampling technique was employed to select 414 health care workers in public Hospitals in Addis Ababa. Self administered questionnaires were used for data collection and analyzed using logistic regression.

Results

As a result of the study the proportion of overall positive patient safety culture of the health care workers was found 45.9%.

This study revealed that only 16.7% of the respondents had positive Hospital Handoffs and transions in their facility. Of the dimensions of patient safety culture, Handoff was the lowest positive patient safety culture composites found, where hospital handover is central in a continuity of care in which shift communication related medical error is preventable. This needs to be addressed by changing practices in handover protocol. Nursing handover at the bedside has been identified as an important strategy to improve patient-centered care. Non punitive response to errors scored 19.1% and was the second lowest positive patient safety culture composites found. This reveals that non punitive response to error is one of the determinants of patient safety culture dimensions where it deals with the staff reporting of adverse events and which is considered a mode in which to learn from and for improving the organization rather than a self-claim. A perception of high work volume results in an increase in demand, exhaustion, and depersonalization of patients which, in turn, affect providers' perception of patient safety. The relationship between workplace demands and nurses' perception of patient safety confirms that nurses make a connection between their working conditions and the wellbeing of patients. Nurses' shared values, beliefs and behavioral norms towards patient safety were identified as the overarching dimensions of the patient safety culture.

Organizational leadership support for improvement is, however; also critical for fostering a culture of safety. This study also revealed that staff perceptions of the effectiveness of senior managers' leadership were linked to lower rates of patient complaints and better clinical governance ratings. Senior managers need to demonstrate their commitment to safety in a visible fashion, for instance by visiting the wards, clinics, laboratories etc. These are called 'Executive Walk Rounds' and have been shown to influence the providers safety culture.

The study indicated that good teams will be those which are open to learning from their mistakes as well as their successes However; this is unlikely to take place unless the positive culture of both the team and the organization can shift towards welcoming such openness and monitoring the changes that result. The penalty-free culture allowed team members to share new and innovative ideas which would have been suppressed in a vertical environment. Good teamwork is still not common in health care but its importance makes it imperative that we consider how its performance is managed and how good team working is rewarded, not just through one individual member but for the team as a whole. About 33.0% of the respondents were given an overall patient safety grade poor for their Hospital working units and only 5.8% of the respondents were given excellent score (Figure 1).

Figure 1: Overall patient safety grade given by HCWs for their work unit in public Hospitals, Addis Ababa, April 2015.

Conclusion:

The overall positive patient safety culture and positive perceptions of safety was found low among health care workers in public Hospitals in Addis Ababa. Hospital Handoff, Job satisfaction, overall perceptions of safety, frequency of event reporting, teamwork within units, availability of adverse event reporting center, safety officer availability, Hospital management support for patient safety, feedback and communication about error were among significantly associated factors with patient safety culture.

Recommendation

1. Ministry of Health, Regional Health Bureaus, Public Hospitals Board, other governmental and non-governmental organizations should need to work on the improvements of patient safety culture to ensure patient safety through:
   - Developing patient safety guideline directing safety culture in Hospitals
   - Developing adverse event reporting system.
   - Preparing Hospital Handoffs and Transitions Protocols.
   - Working on patient safety literacy among Hospital Leaders and staffs through training and education.
2. Hospital management should give urgent and imperative attention to:
   - Improve the overall patient safety culture by focusing on shift changes through the different units in the hospital by ensuring patient data not lost.
   - iving more supportive leadership towards patient safety and demonstrating their commitment to safety in a visible fashion.
   - Developing blame free culture and stimulating organizational learning by realizing that errors as an opportunity for learning and workers as heroes improving safety rather than as villains committing errors.
   - Developing a culture of feedback, open communication about error & teamwork
3. Health Care Workers should:
   - Ensure that important patient care information not lost during shift changes.
   - Not feel like their mistakes are held against them rather leads to positive changes
   - Have good team sprit for best care of the patients
   - Discuss errors to prevent from happening again
   - Freely speak up if they see something wrong that may affect patient care.
4. Further research is needed to understand the association between patient safety culture and clinical outcomes.

MEDICAL EQUIPMENT INVENTORY IN SELECTED 20 HOSPITALS: **AN ENTRY TO IMPROVE MEDICAL EQUIPMENT MANAGEMENT SYSTEM**

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Introduction

Health facility medical equipment inventory is an important part of medical equipment management system. Medical equipment inventory provides the status of medical equipment within the health facility. The inventory of medical equipment is done in combination with inventories of additional supportive assets, such as consumables, spare parts, and testing and safety tools and equipment. Inclusion of equipment in an inventory is based on risk-based analysis.

Medical equipment Inventory is the basis for moving medical equipment management system and ensuring safe and effective medical equipment. The inventory is manly used to develop budgets for capital purchases, maintenance and running costs. In addition, it uses to build and support an effective clinical engineering department (Workshops), hiring and training of technical support staff, and establishing and maintaining service contracts; to support an effective medical equipment management program, such as planning preventive maintenance activities and tracking work orders; and to plan the stock of spare parts and consumables.

Objective

- To assess the availability and functionality of medical equipments in hospitals Method

Ministry of Health in collaboration with CHAI have conducted medical equipment inventory in 4 Federal hospitals, 6 hospitals in Addis Ababa city administration and 10 randomly selected hospital from regions (Debrebrhan, Assosa, Karamara, Yrgalem, Dilchora, Jagula, Axum, St.Mary, Debremarkos, and NegeleBorena Hospital). To conduct this inventory we have develop standard inventory format, conduct training for new biomedical graduate about the execution of the inventory.

Result

Status of non-functionality of medical equipments ranges from 8% to 50%. Based on this assessment, it is clear that those hospitals having good equipment functional status are seen in those having relatively well staffed and organized biomedical equipment workshop.

Table 1:

Medical equipment functionality, 2015

Name of hospital In Addis Ababa	# Functional	# Non -Functional	Total	% Non-Functional
Gandi Memorial Hospital	82	83	165	50%
RasDestaDamtew Hospital	153	32	185	17%
Yekatit 12 Hospital	211	134	345	41%
Minilik 2nd Hospital	152	106	258	41%
Tirunesh Beijing Hospital	120	10	130	8%
Zewiditu Hospital	124	54	178	30%
St. Peter Hospital	212	67	279	24%
Amanuel Specialized psychiatry Hospital	51	52	103	50%
Black lion specialized Hospital	806	180	986	18%
ALERT Hospital	150	75	225	33%
Grand Total	2061	793	2854	28%

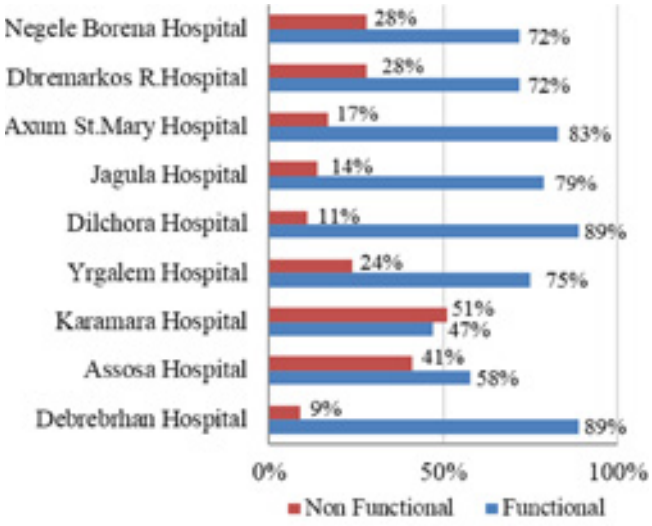

Figure 1: Status of medical equipment functionality by hospital, 2015

Diversity of Hospital Medical Equipment

The brand and country of origin of medical equipments are very diverse. Above 1/4th of medical equipment country of origin is not known. Japan, USA and Germany are the major countries of origin for Ethiopian medical equipment as shown in table 2. As the country of origin increase medical equipment management become difficult in terms of calibration, maintenance and operation.

Table 2:
Country of origin of medical equipment, 2015

No	Country of origin	Percent
1.	Turkey	2%
2.	UK/England	2%
3.	Korea	3%
4.	Taiwan	4%
5.	Italy	4%
6.	China	8%
7.	Germany	13%
8.	Japan	14%
9.	USA	14%
10.	Other 27 countries	9%
11.	Country of origin Is not known	27%

Medical equipment spare part, documentation and user manual

Availability of spare parts and documentation is very important for equipment maintenance. The inventory result shows that 2% of the equipment has no spare part. Regarding service and users' manual the assessment shows only 24% are having user manual and 11% of the registered equipment have service manual. This makes the equipment maintenance and utilization very difficult.

Recommendations

The following recommendations are identified from the inventory:

- Improve national medical equipment management through the implementation of medical equipment management guideline. That has guideline on establishment of unit, procedure from procurement to disposal, inspection system, and standard for after sales agreement.
- Improve medical equipment inventory data base management system for better decision making and planning.
- Improve Biomedical Equipment management capacity.
- Limit medical equipment brand and source of origin

Based on the inventory result MOH, RHB, Development partners are to coordinate their effort to enable hospitals to improve the equipment functionality status in particular and equipment utilization.

CASE STUDY OF MONITORING AND EVALUATION SYSTEM CAPACITY IN HEALTH SECTOR: **DATA DEMAND AND USE BY HEALTH PROGRAMS IN ETHIOPIA**

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Introduction

The Ministry of Health (MOH) reformed the Monitoring and Evaluation (M&E) business process in 2007 to address the efficiency and effectiveness of the M&E in the health sector. The M&E process is constituted of five elements namely: routine data collection and aggregation; performance monitoring; integrated supportive supervision; operational research and evaluation.[59] The implementation of the health institution and community-based health information system is primarily led by the Policy Planning Directorate and related agencies. On the other hand, surveys, operational research and program evaluations are led by Ethiopian Public Health Institute (EPHI) and health programs.

By the end of June 2015, almost all (98%) of the public health facilities and 23% of the private health facilities were implementing HMIS, and 77% of the health posts were implementing the community health information system. Currently, the electronic HMIS (eHMIS) is implemented in 77% of the health facilities with electricity. [60] The HMIS reform that took place in 2007 and the subsequent revision in 2013 has improved the data coverage as well as the timeliness and completeness of the HMIS reports. As part of the

[59]MOH, Business Process Re-engineering,2007

reform, the new system has also improved systematic performance monitoring, supportive supervision, and planning based on evidence. However, there are still gaps in areas of data quality, information use and triangulation of information.

Most of these findings about the HMIS performance are from routine data quality assessments, regional project reports and review meetings. These, however, do not clearly reflect the interest and perspective of program experts at the national level. Understanding the M&E capacity from the point of view of different health programs is essential to develop a robust M&E system capable of responding to the needs of the health sector transformation plan.

Hence, this study aims to explore the performance of the existing M&E system in the health sector of Ethiopia, and the future expectation of the programs and other systems of the MOH.

Method

A case study methodology was chosen for this study. Traditionally, programs such as EPI, Maternal Health and HIV/AIDS have vertical systems of managing their own information systems as well as the overall M&E. In that context, to make the health information system relevant and useful for program M&E, it is necessary to clearly understand how different health programs own and manage the M&E activity within their complex program management environment. Secondly, the programs greatly influence the M&E system, either supporting or hampering its performance. Thirdly, the programs are the users of the information system and the monitoring and evaluation findings. The case study methodology has the potential to be embedded within the various programs and, thereby, provide the opportunity for in-depth understanding of the role of monitoring and evaluation in dynamic program management environment, and to understand the varying M&E needs of programs according to the level of maturity of their respective M&E systems.

Focus group discussion and in-depth interview of team leaders from different directorates was carried out based on open-ended questionnaire with pre-identified sensitizing issues related to the overall M&E capacity of the public health sector and the expectation of the programs. The areas of interest included conceptualization of M&E, data quality, use of ICT, organizational structure, communication, and use of findings, feedback system, program monitoring, and M&E knowledge. The list of areas of study interest was first sent to the directorates to discuss within their unit and select individuals for interview and group discussion. Purposive sampling technique was used for the in-depth interview and focus group discussions. The selection was based on the responsibilities and position of respondents related to their program areas.

The study was undertaken in August 2015. The Directorates for Disease Prevention and Control, Maternal and Child Health, Health Extension Program, Special Support, Medical Service, Health Information Technology, Human Resource, and Gender and Youth Affairs were included for the study. A total of 9 group discussions and 9 in-depth interviews were conducted. Experienced and knowledgeable moderator and two note-takers were used to ensure the quality of data. Content analysis was performed manually to identify themes. Data captured were read carefully, categorized and summarized by thematic areas.

Results

Strengths: Improvement in coverage of the information system/HMIS, an increasing demand to use evidence for decision making, and promising efforts to use information technology were perceived as the strengths of the monitoring and evaluation practice. User friendly information technology is sought to dramatically improve the M&E capability of program experts.

Unreliable Information: The respondents pointed out that the routine information system often has wide variation from the population based survey in terms of coverage data. Also, there are inconsistencies among data from different source and in different reporting periods, and sometimes the coverage is more than the eligible and triangulation is found to be very difficult.

Depth: The respondents view that the data and information mainly coming through the information system (i.e. HMIS) are not analyzed and interpreted to propose alternative solutions for decision making. Program managers merely look at the figures or tables, but they are too shallow to make sound decisions. Currently, mostly hearsays and expert judgment are taken into considerations for decision making. One of the reasons proposed for this is inadequate knowledge in HMIS/ monitoring and evaluation within the program staff.

Though vital for identifying operational or system challenges to take corrective action, integrated supportive supervision is deficient to provide

[69]MOH, Annual Performance Report, EFY 2015

technical programmatic support and lacks focus on addressing prevailing conditions at ground level.

In case of operational research or evaluation, respondents from various programs experience that only few evaluation or operational researches are conducted with need-based research agenda, and that the findings are seldom utilized for programming or operational management.

Continuity

There is discontinuity in M&E. Programs life cycle embrace designing, planning, implementing, monitoring, evaluation and learning. The dynamic and complex relationship between the components is expected to be managed by evidences and insights from M&E. However, M&E findings are not responding to the need in timely manner, there is weak feedback mechanism (open feedback loop) and decision are not well converted in to appropriate actions, and actions are not followed. Reporting and review meetings are becoming the end than the means for M&E. Besides, M&E plans are prepared not at the beginning of program design, and this hinders its role in proactive "feed forward" leadership and management of programs.

Misalignment

Efforts towards program management, and monitoring and evaluation are often not aligned. Actions taken by programs sometimes contradict with the actual demand of the situation. Variations in data accuracy, intention to measuring and focusing on routine activities, reliance on expert judgment, lack of use of data during partners meeting, and dependence on old population based data are explained as causes for misalignment. Absence of guidance by program logic model or conceptual framework is also identified as challenges. Programs believe HMIS should address all their information demand for program management.

Health System

M&E system primarily focus on programs. Mainly the performance of programs and health condition of the community are captured in HMIS. M&E is not focusing on health system such as human resource, pharmaceutical, financial systems. Besides, interaction between different system components and their contribution to program improvement are not well addressed in the M&E of the health sector. An issue worth mentioning here is expectation of special support programs. They view of M&E being not responding to the need and maturity of program implementation in pastoralist community. For instance, the pastoralist communities are living by moving from place to place and they are geographically scattered, however the information system do not capture health undertaking at community level.

Organization

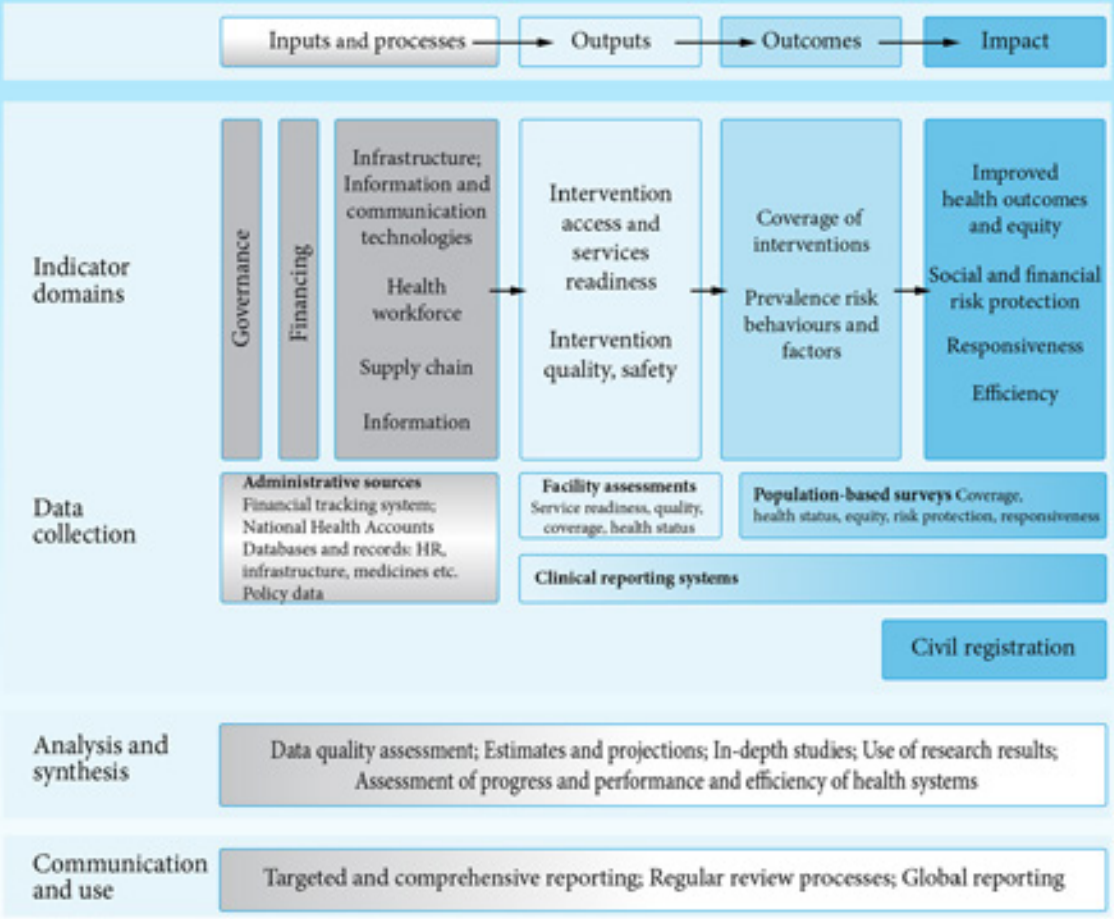
M&E/ health information system organizational platforms are not well understood and functional. At national level the M&E case team is organized under PPD. Though improving through time, the communication and interface between programs and M&E case team is not adequate. At regional level, the M&E structure is a support process that is developed by the regional finance bureau. The human resource requirements do not fit with the MOH process. At lower level, there are HIT professionals and HMIS focal persons. Program experts feel that though there is a guide to establishment of performance review teams (PRT), they are not functional in most of the facilities. In facilities where there are functional PRT, they are not performing as per standard to ensure data quality and guide decision making. Programs suggest the need for regulation or policy to ensure accountability, data quality and improve information use culture in the political, social and contextual factors.

Conclusion

The case study findings mirror the views and experience of programs and their high level of expectations from the monitoring and evaluation system. Key issues relate directly to the information systems are, data coverage, accuracy, consistency and triangulation. On the other hand, key issues relate to the internal dynamics and management environment within the programs; for instance the absence of detailed-out program logic/conceptual models and their relationship with program M&E, and weak feedback mechanisms.

The findings of this case study can provide the necessary platform for bringing together the M&E/ information system experts and program experts to build a common understanding of the M&E systems and to direct efforts towards a harmonized M&E system for the Ministry of Health that caters to the specific needs of each health program.


EVALUATION
HEALTH
MONITORING
PERFORMANCE
SYSTEMS
TRANSFORMATION
INFORMATION
PROGRAM
SCORECARD
LOGIC MODEL
BIG DATA
DATA QUALITY
BEST PRACTICE
IMPACT
ACCURACY
EQUITY
TIMELINESS
PRECISION
SIGNIFICANT
DIF IN DIF
EX-POST
RDQA
HIS
HMIS
CHIS
CPR
LQAS
ALPHA
PRINCIPLE
SYSTEM THINKING
THEORY OF CHANGE
NET EFFECT
ORGANIZATION
REVIEW
POWER
PROCESS
USE


Inputs and processes
Outputs
Outcomes
Impact
Indicator domains
Governance
Financing
Infrastructure; Information and communication technologies
Health workforce
Supply chain
Information
Intervention access and services readiness
Intervention quality, safety
Coverage of interventions
Prevalence risk behaviours and factors
Improved health outcomes and equity
Social and financial risk protection
Responsiveness
Efficiency
Data collection
Administrative sources
Financial tracking system; National Health Accounts
Databases and records: HR, infrastructure, medicines etc.
Policy data
Facility assessments
Service readiness, quality, coverage, health status
Population-based surveys Coverage, health status, equity, risk protection, responsiveness
Clinical reporting systems
Civil registration
Analysis and synthesis
Data quality assessment; Estimates and projections; In-depth studies; Use of research results; Assessment of progress and performance and efficiency of health systems
Communication and use
Targeted and comprehensive reporting; Regular review processes; Global reporting