The findings indicate that the burden of TB in Kenya is higher than previously thought. Men between the ages of 25-34 years, urban dwellers, people without HIV and women over the age of 65 years bear the highest burden of TB.

On March 24, the Ministry of Health supported by various health partners officially disseminated findings of Kenya’s, first post-independence National TB Prevalence Survey.

The dissemination of the survey findings was done during the commemoration of World Tuberculosis (TB) Day, marked every year on March 24. The World TB day is designed to increase public awareness that TB remains an epidemic in much of the world and a major public health problem in Kenya mostly affecting the poor and socially disadvantaged. This year’s theme was ‘Mulika TB Maliza TB! Unite to End TB for a TB Free Generation.’

The survey that commenced in July 2015 had the objective of assessing the burden of TB, the associated health seeking behaviour of TB patients and those reporting TB symptoms, as well as inform the country’s planning and policy formulation to end TB. This survey was the first globally to make use of a fully digital system for real-time data collection as well as the innovative GeneXpert technology for TB testing.

The survey was carried out in 45 of Kenya’s 47 counties with 63,050 screened for TB. Participants were engaged in a series of questions to ascertain if they experienced any TB symptoms, followed by a chest x-ray. Those with abnormal chest x-rays submitted sputum for laboratory analysis through, GeneXpert and culture.
The true burden of TB in Kenya had remained unknown with the last survey conducted before independence. This latest survey, a major milestone towards ending TB in Kenya, was conducted between July 2015 and July 2016 through community-level screening of 63,000 people in 45 counties. It has shown that we have more TB than previously thought. About 40% of the TB cases remain undetected and untreated meaning that more needs to be done to find these missing cases. The findings support roll out of GeneXpert as a first test towards TB diagnosis, using cough of any duration as a key screening question and expanding the screening questionnaire to include additional questions like shortness of breath, chest pain among others.

In collaboration with The International Union Against Tuberculosis and Lung Disease, the NTLD-Program and TB ARC, the first Kenya based UNION training on “Principles of Tuberculosis Care and Prevention: Translating Knowledge into Action” was held in May. It targeted County TB coordinators from Nairobi and Laikipia, equipping them with skills on data driven supervision in TB. As one sub county participant said, “This is quite an intensive but very useful training and I cannot wait to cascade this to my facilities at the sub county.” We hope to support all the counties to go through this impactful training with the aim of improving case finding and the quality of TB care.

Finally, we would like to congratulate Dr Enos Masini in his new position at the WHO Kenya Office. Dr Masini is the former Head of the NTLD-Program, a position he held from November 2014 to June 2017. On the one-on-one segment, Dr Masini shares insights on what his role entailed, his defining moments and his vision for the fight against TB in Kenya. We wish him well in his new role as he contributes to the END TB Strategy in Kenya and beyond. Indeed a lot has happened from the start of the year to date, and we thank our donors, stakeholders and partners, for the support TB ARC has received as we work towards reducing the burden of TB in Kenya and the world.

We wish all Kenyans a peaceful voting season!
The findings indicate that the burden of TB in Kenya is higher than previously thought. The prevalence survey revealed that for every 100,000 adults aged 15 and above, there are 558 with TB compared to the 2015 World Health Organization (WHO) estimates, which showed that there were 233 people with bacteriologically positive TB among every 100,000 people. TB was found to be higher among young men between the ages of 25 and 34 years, urban dwellers, people without HIV and women over the age of 65 years. The findings highlight that close to 40% of the TB cases in Kenya go undetected and untreated. Considering that one undiagnosed and untreated individual can infect 10-15 people, this pool of missed people with TB undetected and untreated. Considering that one undiagnosed and untreated individual can infect 10-15 people, this pool of missed people with TB continues to fuel the spread of the disease.

Speaking during the event, the former Head of the NTLD-Program Dr Enos Masini said, “This survey was specifically carried out in the community to provide us with the exact data on the burden of the disease in Kenya, but also to go further and find out which groups of people are affected by the disease and what would be the best strategies for us to reach them.”

The survey demonstrated that the use of cough of any duration or any of the TB related symptoms and chest x-ray for screening leads to a higher rate of TB detection. The Cabinet Secretary for Health, Dr Cleopha Malsi said, “In light of these results and to find the missing TB cases, the Government commits to ensure that TB is part of the evolving universal health coverage/life protection schemes and make TB diagnostics accessible where patients seek care by expanding the use of Chest X-ray to screen all persons presumed to have TB and make GeneXpert the first diagnostic test for all presumed TB cases.”

The missing cases were said to be among people in the community with non-severe symptoms, and therefore not seeking care. Others include people at work, school, home or clinics who are presumed not to have TB and hence not screened, as well as individuals seeking care for TB symptoms, who do not get diagnosed with TB.

Prevalence Study Coordinator Dr Jane Ong’ang’a, said, “We need to invest in communication so that we can effectively inform the public about TB symptoms to enable us widen the scope of screening and reach out to the missing cases in the community.”

With funding from USAID, the TB ARC activity supported the prevalence survey dissemination meeting, survey logistics including fleet management for all the field teams during the data collection process and provided technical assistance in communications including the development and production of various IEC materials. TB ARC further supported the midterm review of the prevalence survey in collaboration with other partners as well as end of data collection workshop. TB ARC staff were key members of the survey dissemination meeting, survey logistics including fleet management. TB ARC further supported the prevalence study task force.

Continued from page 1

The survey demonstrated that the use of cough of any duration or any of the TB related symptoms and chest x-ray for screening leads to a higher rate of TB detection.
School Health Activity, Kiambu Township Primary

In the build-up to World Tuberculosis Day 2017, TB Alliance supported a pre-World TB Day activity at Kiambu Township Primary School in Kiambu County. The activity was planned to raise public awareness around childhood TB among children between the ages of zero to 14 years, those in primary school to encourage testing, early diagnosis and the use of the recently launched child-friendly medicines for TB treatment.

The event brought together primary school pupils and teachers from Kiambu County, County Executive Committee Members (CECs) for Health and Education, the NTLD-Program among other TB control partners. During the event, various TB messages were disseminated through song, dance, poems and skills focusing mainly on prevention, screening and treatment. Children were given TB education materials and engaged in identifying the common symptoms of TB and daily TB preventive measures. Winners of a school TB Essay and Art competition titled ‘MulikaTB MalizaTB: How I will Fight TB in my Community’ were awarded. The Essay and Art competition was conducted across six counties with a high burden of childhood TB namely: Kiambu, Turkana, Mombasa, Nakuru, Meru and Nairobi.

Speaking at the event, the guest of honour, CEC for Education, ICT, Culture and Social Services, Esther Ndirangu praised the NTLD-Program for creating TB awareness in schools and promised support from the county in future endeavours.

The Department of Education assures full support in this process and together, we shall achieve the set target,” she said. Ms Ndirangu also noted that the County was ready to support children in building their potential. She gave an example of how Kiambu County supported Miss World Africa, Evelyn Njambi who hails from Kiambu, in her quest as a beauty queen. Ms Njambi, who also graced the occasion, engaged the children in identifying TB symptoms and ways of preventing the spread of TB.

In activities preceding the March 20 event, CHS through TB Alliance and working through the county and sub county TB coordinators, engaged school children from the six counties, providing them with information on TB and distributing educational materials. Twenty selected schools from each county were then enrolled in an essay and art competition, aimed at establishing how well the children had assimilated the information. The students with the top three essays and the best art work from each county were awarded individually and won their respective schools different awards including textbooks, storybooks, stationery, art material and a computer for child-friendly medicines for TB treatment.

TB Alliance supports children activities as they are considered the best agents of change due to their vocal power and influence within the family setting. TB Alliance intends to expand the TB awareness program through schools in the journey towards ending TB.

TB ARC at the 2017 Technical and Vocational Education and Training (TVET) Conference

The USAID funded TB ARC activity joined other USAID implementing partners in show casing their work and engaging with the youth at the Hands on the Future Conference from January 26 to 28, 2017 at the Kenyatta International Convention Centre (KICC). The conference was a skills show for Technical and Vocational Education and Training (TVET). The conference attracted Policy Makers, Decision Makers, Youth Representatives, Government, Private Sector, Development Partners, Non-governmental Organizations (NGOs), among other actors active in youth employment, technical and vocational education and training. Students and youth who attended the conference had a chance to experience hands-on exhibits and interact with training providers. In addition, they had a chance to learn more and gain technical, vocational, entrepreneurship and life skills for job readiness from potential employers and career counsellors.

The main objective of the conference was to promote policy debate and dialogue on various strategic themes including policy implementation for successful TVET, filling skills gaps, a sustainable future for TVET and making TVET relevant for the youth. Equally important was to re-define roles, successful TVET, filling skills gaps, a sustainable future for TVET and making TVET relevant for the youth. Equally important was to re-define roles, creating interactions and raise collaborations among TVET stakeholders. It further, aimed at improving the image of TVET among students and the public.

The Government of Kenya, through the Ministry of Education, is reforming the TVET sub-sector to ensure it plays the important role in providing relevant knowledge and skills and helps attain Kenya’s vision 2030 of a newly industrialized nation offering high standards of life to its citizens.

USAID is working with the Kenyan government and vocational training centres to help young people gain practical skills that will improve their lives. This can only be achieved if the youth are healthy as poor health can put education at risk. Skills development and access to resources contribute to health outcomes, and education can create opportunities for better health. While visiting the TB ARC booth at the conference, the youth were engaged on TB matters and several myths were demystified. In addition, the youth received TB screening services and those who presented TB symptoms were referred for further diagnosis at various TB clinics. The TB ARC team engaged with about 400 students and youth. TB symptom screening was done for 45 with 13 of them being referred for further diagnosis.
TB Program Mid-term Review Findings Dissemination Meeting

From March 9 to 20, 2017 Kenya conducted a successful mid-term review on the implementation of the National Tuberculosis, Leprosy and Lung Disease (NTLD-Program) Strategic Plan 2015-2018. The USAID funded TB ARC activity supported this process together with other partners and further supported the findings dissemination meeting. The exercise was aimed at establishing the progress and the gaps in TB prevention and care in Kenya to inform future revision of the strategic plan.

Both local and international experts conducted the review at national, county and community levels in 13 randomly selected counties. The review involved field visits to both public and private health facilities at county and sub-county levels, including referral hospitals, primary health care facilities, dispensaries, communities and civil society organizations. The visits also involved national policy level key informants, collaborating institutions, key partners, health care workers and patients. During the review process, health care workers (HCWs) and patients were interviewed, data was reviewed and direct observations done.

Key findings included:

**TB Burden** - TB notification rates declined steadily in Kenya during the period of the Strategic Plan. Notified TB cases of all forms declined from 98,400 in 2012 to 81,518 in 2015, to 73,000 by the end of 2016, declining by a factor of 10-20% every year.

**Programme Implementation in a devolved governance structure** - The review found the existence of TB, Leprosy, Lung Disease coordinators at county and sub-county levels, and continued government financing of first line anti-TB medicines that were available for free to patients at the devolved levels. It was recommended that county governments routinely include TB in county implementation plans and allocate a budget line to finance TB control activities.

**Childhood TB** - There was evidence of active action towards improving childhood TB diagnosis and care. This included existence of a national technical working group for childhood TB, increased presence of childhood TB in policy documents, availability of training and job-aids, roll out of the recently recommended child-friendly anti-TB drug formulations among others. Notwithstanding, there are limited resources available for child TB; policy of free access to care for children under five years is not being applied fairly.

**Programmatic Management of Drug-Resistant TB** - has been scaled up country wide with regular updating of internationally compliant national policy guidelines and algorithms. The review however found that there is under diagnosis of expected DR-TB cases, less than 50% of expected cases were notified in 2016.

**Engaging all care providers - Public Private Mix (PPM)** - The private sector contributed 17% of all cases notified in 2015 and 2016, and treatment outcomes as well as TBB/HIV outcome indicators in the private sector compare favorably with the public sector. It is therefore recommended that the Ministry of Health (MoH), County Health and NTLD-Program mobilise the necessary resources to implement the recently developed PPM action plan.

**Policy and finance** - The government invested in purchasing of first line medicines covering up to 70% of first-line anti-TB medication supply, county spending on health also increased.

**Diagnosis** - many people with TB are not diagnosed, treated or reported, and those with TB symptoms in the community and health facilities were not always evaluated for TB. Therefore, government initiatives to expand radiology services will greatly increase access to chest X-ray services. GeneXpert was recommended as first line for all presumptive TB cases. Partners like CDC, USAID and WHO have supported rapid testing of course however more needs to be done.

**Pharmacovigilence** - There is countrywide distribution of anti-TB medicines and commodities through Kenya Medical Supply Agency (KEMSA), and government financing covers 70% of first-line anti-TB medication supply. It was recommended to maintain the centralised procurement of essential TB control medicines and commodities to sustain focus in a devolved set up.

**Social Protection** - TB diagnosis and treatment services are free at any point of care in Kenya, and children under five years are currently exempted from Chest X-ray charges. DR-TB patients receive a stipend of KSh 6,000 per month, and are also eligible to receive nutritional support while on treatment. There is however need for targeted strategies to reach hard to reach Counties and key populations; and to facilitate even application of existing social protection schemes.

There has been great progress in the fight against TB in Kenya. However, the country remains among the 30 TB/HIV and MDR-TB high burden countries. The findings indicate that Kenya is in line with the internationally set TB recommendations but much more needs to be done. The USAID funded TB ARC activity supported logistics and technical assistance in the field during the entire review process. TB ARC further supported the lead consultant Dr. Refiose Mat Jay as well as local consultants and the finance specialists.

**The 45th Kenya Medical Association (KMA) Annual Scientific Conference was held in Nanyuki, Laikipia County from April 19-23, 2017. The conference focused on the theme “Health Indicators for Sustainable Development.” A key objective of the conference was to discuss in-depth how to meet targets under the Sustainable Development Goals (SDGs) with interest on how to achieve Universal Health Care. In this regard, the conference underscored the importance of taking a multi-sectoral approach in achieving the 2030 agenda for sustainable development.

The USAID funded TB ARC activity supported both National and County TB staff to attend the conference. The KMA Conference attracted delegates from the medical profession as well as those from non-governmental, pharmaceutical, insurance and development agencies. The conference built on various development areas linked to health including disaster risk reduction and management in Kenya with a close link to emergency medical services. In most cases, natural hazards like droughts, floods and earthquakes are unavoidable; however, rescue depends a lot on first responders. Therefore, building health resilience is a critical component of ensuring healthy lives as well as in promoting the well-being of all people in the society. Legal aspects as a pillar of universal health were discussed with specific focus on the associations’ role and opportunities to participate in law and policy processes at National and County levels. Areas of focus included the role of health professional associations in safe guarding devolved functions in the health sector. The sexual and reproductive health laws, policies and guidelines in Kenya were underscored as everyone’s business.

**Sustainability in food, energy, water and jobs and their impact on health** was particularly given a major focus as the findings of the just concluded prevalence survey were disseminated and deliberated on at length.

TB is a key priority communicable disease and a major public health problem in Kenya. The country is among the 30 high burden TB countries globally. The just concluded Kenya National TB Prevalence Survey highlighted the fact that a significant proportion of patients with TB symptoms are accessing the health system, without diagnosis being made. This indicates that not all health care workers have a high index of suspicion for TB and do not therefore screen and diagnose TB.

The KMA Conference provided the TB ARC activity with a platform to engage delegates and discuss TB at length, with a call to action on finding the missing cases and to drum up support for active case finding across all points of care. With funding from USAID, the TB ARC activity has consistently been committed to increasing case notification in TB, accelerated response to drug-resistant TB, and scale up of TB/HIV collaboration.

The panel of the experts during the Mid Term Review findings dissemination meeting
TB ARC at the KPA Conference 2017

Globally, at least one million children become ill with Tuberculosis (TB) and another 140,000 die annually. This translates to nearly 400 children dying every day from TB. In 2015, children comprised about 7,000 of all reported TB cases, yet 2.3% of these remain undiagnosed and untreated despite seeking services at health facilities. Tuberculosis in children is an important indicator of ongoing TB transmission in the community.

With this background, the USAID funded TB ARC activity sponsored several National and County TB staff to participate in the Kenya Paediatric Association (KPA) conference and further engaged with other Paediatricians to discuss childhood TB matters. The conference held in Kisumu County from April 25 to 28, 2017 under the theme “Beyond Child Survival: Nutrition and Child Development,” brought together Paediatricians from both private and public facilities.

The thematic areas for the 2017 conference included infectious diseases, nutrition, research in Paediatrics, asthma and allergies, severe illnesses in Kenya, devolution in health, child development, vaccines, Paediatrics in disasters, genetic disorders and infectious diseases. Nutrition is a key component in the well-being and development of children as malnutrition accounts for about 45% of deaths in children under five years each year. Paediatricians therefore have an important role in understanding both economic and social factors that affect the survival of all children to influence practical interventions that can be developed and tested to inform policy.

There is an established relationship between poor nutrition and increased vulnerability to TB. This is because undernutrition weakens the immune system, posing a risk of progression from TB infection to disease, which then increases the chances of undernutrition. Infections like TB can reduce appetite, decrease the body’s absorption of nutrients, and increase nutrient metabolism. Consequently, people who are undernourished are more susceptible to TB infection. Social factors like poverty, hunger, poor sanitation, lead to a high prevalence of undernutrition among people with TB. With funding from USAID, the TB ARC activity sponsored a symposium to discuss childhood TB matters specifically: diagnosis, improving case detection and care, and MDR TB. This was also a good forum to discuss findings of the just concluded National TB Prevalence Survey, and to drum up support for active case finding across all health service entry points.

Over the years, medication for treating TB in children has evolved with the most recent progress being the introduction of improved child-friendly TB medicine. The conference provided TB ARC a platform to engage with Paediatricians on the improved child-friendly medicines launched last year and gather feedback about the formulation. Kenya led the world in rolling out these medicines nationally through the support of TB Alliance, USAID and other partners. The medicines easily dissolve in water; have a fruity taste and are readily available at any public health facility.

With the continued support of USAID, TB ARC remains committed to reducing the burden of TB among children for improved child survival, and advocating for improved access to TB prevention, diagnosis, treatment and care. TB ARC has increasingly trained Paediatricians and other health care workers (HCWs) on childhood TB, an activity that has seen over 20 training sessions held for health care workers on childhood TB as a strategy to improve their knowledge and skills in suspecting, diagnosing and treating childhood TB.

In addition this conference provided an avenue to create awareness about the FIKIA project, a 14-month project aimed at increasing TB case finding among the children across health facilities in Nairobi, Machakos, Makueni, Mombasa, Kirinyaga, Garissa, Menyu, Siaya, and Kericho counties. The Centre for Health Solutions - Kenya received a grant to implement FIKIA Project supported by Stop TB Partnerships TB REACH initiative funded by the Government of Canada and the Bill & Melinda Gates Foundation. The project is aimed at complementing the case finding efforts currently being supported by the USAID funded TB ARC activity.

Over the years, medication for treating TB in children has evolved with the most recent progress being the introduction of improved child-friendly TB medicine.

Media Engagement Workshop

In the build-up to World TB Day 2017, the national event planning committee identified the need to have a media workshop for the National Tuberculosis, Leprosy and Lung Disease Program (NTLD-Program) staff, county staff, partners and TB champions. Supported by the USAID funded TB ARC activity, the aim of the workshop was to provide media engagement skills to key staff in readiness for the globally commemorated World TB day that has over the years continued to receive immense media coverage.

The workshop gave insights into how the media works and what journalists expect from health experts. The media personalities also shared a glimpse into the news making world citing that this understanding would be significant in making it easy and maximizing the chances of getting coverage. Some of the tips included keeping information brief and focused, getting straight into the story, making follow-up phone calls after sharing a story through email, as well as offering case studies or personal stories to bring the story to life.

The participants were also advised to have background information and fact sheets ready to send over to the media upon request. The use of technical jargon and giving messages like a sales pitch was discouraged. The USAID funded TB ARC activity supported 34 participants at this workshop and the knowledge and skills gained went a long way into the making of successful media stories and interviews before, during and after World TB Day.

The aim of the workshop was to provide media engagement skills to key staff in readiness for the globally commemorated World TB day that has over the years continued to receive immense media coverage.
Miss World Africa 2016 Evelyn Njambi interacts with pupils from Kiambu Township Primary during the School Health Event held at the school.

Larry Asego from Radio Africa speaks about the role of radio in health communication during the Media Engagement Workshop.

Dr Teresiah Njoroge (middle) during the Kenya Defence Forces Paediatric Tuberculosis Training at the Ministry of Defence Headquarters, Kenya Army Officers Mess from March 20–22, 2017.

Stop TB Partnership Kenya Coordinating Board and Secretariat display their certificates after going through a two day Board Management Training by Strathmore University at Silver Springs Hotel on May 4–5, 2017.

Dr Jane Carter (middle), Dr Brenda Mungai TB ARC Chief of Party fourth from right with other county participants during the Union Training practicals.

Second from Left: Dorothy Njagi TB ARC Communication Officer with students from Medical students Association of Kenya at the TB ARC booth during the KMA Conference.
Until 2017, the true burden of Tuberculosis in Kenya has remained unknown, with the last TB prevalence survey being conducted before independence in 1958-59.

This survey provides a better estimate of the burden of TB and assesses the associated health seeking behaviour of TB patients and those reporting TB symptoms. These findings will be used to inform country planning and policy formulation to end TB.

### KENYA TUBERCULOSIS PREVALENCE SURVEY 2016 FINDINGS

#### The Burden of TB in Kenya is Higher Than Previously Thought

- **TB prevalence** 558 per 100,000 people
- **It is estimated that every year** 138,105 people fall sick with TB in Kenya
- **However, in 2015** 82,000 people were diagnosed with TB

- Of TB cases remain undetected and untreated

*This pool of missed cases continues to fuel the spread of TB, considering that one undiagnosed and untreated individual can infect 10-15 people

#### People Most Affected By TB

- **The prevalence of TB in men is twice as high as that of women**
- **Overall, the highest burden of TB is among people aged 25-34 years (716 per 100,000 people)**
- **Men in the 25-34 age group bear the highest burden of TB (972 per 100,000)**
- **Among women, those over the age of 65 have the highest TB burden**
- **Close to 70% of TB cases occur in people below the age of 44 years. This high burden of the disease in the younger age groups suggests ongoing spread of TB in the community**
- **TB prevalence is higher in urban areas (760 per 100,000) compared to rural areas (453 per 100,000)**

#### Testing for Tuberculosis

- **Current practice of TB symptom screening misses cases**
  - Screening for TB using any of the four cardinal symptoms - cough of more than two weeks, fever, night sweats and weight loss - would have missed 40% of the TB cases.
  - Screening for TB using any TB related symptom – cough of any duration, fever, weight loss, night sweats, fatigue, shortness of breath or chest pain detects more TB cases.

- **Chest x-ray emerged to be a good screening test for TB**
  - Over 50% of the confirmed TB cases did not have a cough of more than two weeks as used to screen for TB during the survey. These cases were only identified because of an abnormal chest x-ray

- **Use of microscopy for diagnosis misses cases**
  - As a solo test, the commonly used microscopy test would have missed more than 50% of the TB cases.

- **GeneXpert (an innovative technology for the diagnosis of TB) detected 78% of the TB cases making it a more reliable and efficient test**

#### Health Seeking Behaviour

- **Individuals with symptoms of TB in the community are not seeking care**
  - Majority of people found to have TB had not sought health care for their symptoms prior to the survey.
  - Majority did not seek health care because they did not perceive their symptoms as being serious.
  - Majority of those who did not seek care for their symptoms were men.

- **People with TB symptoms first seek health care at either public or private health facilities including pharmacies**

- **Three quarters of the people with TB symptoms who seek care do not get diagnosed/are missed**

- **A quarter of those found to have TB did not report any TB symptoms. People at work, school, home, or clinics are presumed not to have TB and are therefore not screened.**

#### Kenya TB Prevalence Survey: Call to Action, Finding the Missing TB Cases

1. **TB Testing and Diagnosis**
   - Expand symptom list for TB screening beyond the 4 cardinal symptoms - cough of more than two weeks, fever, night sweats and weight loss and include any TB related symptom as follows - cough of any duration, night sweats, weight loss, fatigue, fever, and shortness of breath.
   - Screen all persons with respiratory symptoms, seeking care in health facilities for TB.
   - Make diagnostics accessible where patients seek care.
     - Expand use of Chest X-ray to screen all persons presumed to have TB.
     - Make GeneXpert the first diagnostic test for all presumed TB cases.

2. **Public-Private Sector Partnership**
   - Engage the private sector in TB screening, diagnosis and treatment including private pharmacies.

3. **Community Based Action**
   - Develop and implement targeted approaches for communication, TB screening and active case finding among young men and the elderly.
   - Enhance focus on urban TB care and prevention to address the high burden of TB in cities and towns by the Ministry of Health, County Governments and civil society partners.
   - Carry out targeted screening and active case finding among high risk groups - men, urban slum dwellers, employers, informal labour sector, schools/colleges.
   - Expansion of social protection and food subsidies to include men.

4. **Improve Community Awareness of TB Symptoms**
   - Develop targeted messages and health education on TB to key affected populations encouraging people to seek early intervention for any symptom.
   - Expand school health programs to include TB symptom screening.

5. **Make TB Everyone’s Business**
   - The Ministry of Health to spearhead a multi-sectorial engagement for TB control to particularly address issues to do with poor nutrition, sanitation, housing, poverty and overcrowding.

#### Finding the Missing TB Cases

1. **Screen all persons with respiratory symptoms, seeking care in health facilities for TB**
2. **Make diagnostics accessible where patients seek care**
   - Expand use of Chest X-ray to screen all persons presumed to have TB.
   - Make GeneXpert the first diagnostic test for all presumed TB cases.

#### People Most Affected By TB

- **83% of TB cases were HIV negative**
- **This suggests that interventions to control TB among People Living with HIV have been successful and a large burden of TB now exists among people not infected with HIV**

#### Key Survey Findings

- **63,000 people screened at the community level**
- **45 countries participated**
- **82,000 people were diagnosed with TB**
- **40% of TB cases remain undetected and untreated**
- **HIV-809 per 100,000 people**
- **HIV+359 per 100,000 people**
- **83% of TB cases were HIV negative**
- **This suggests that interventions to control TB among People Living with HIV have been successful and a large burden of TB now exists among people not infected with HIV**

*All participants were asked a series of questions to assess for TB symptoms. Those with a cough and/or abnormal chest x-ray were requested to submit a sputum sample for laboratory analysis through the use of microscopy, GeneXpert and culture.*
The Nairobi City County TB team led by the County Tuberculosis, Leprosy Coordinator (CTLC) Elizabeth Munui carried out a rapid Tuberculosis (TB) testing activity at Kabete Technical College in Nairobi City on February 17. This was done following a rising trend of students contacting TB. The team comprising of TB Health Promotion Officer and the TB Nurse at Kangemi Health Centre with the support of sub county Health Management Team (SCHMT) had observed that since 2010, eight students had been treated at Kangemi health centre. Out of these, two had been diagnosed with Multi-Drug Resistant (MDR) TB, necessitating an urgent testing activity. Currently, there is a staff member on TB treatment from this institution.

The USAID funded TB ARC activity supported a sensitization in May 2016 and the TB screening exercise at the institution. Before the screening, a health talk highlighting TB statistics from the sub-county health facility was done to all the students. Through this, the students were given an opportunity to share TB experience with other students at the institution.

Twenty-five health care workers, 10 sub county coordinators, 10 counselors and 12 CHVs were involved in the exercise. 3,000 participants including students, lecturers and non-teaching staff were reached. 500 people were screened for TB with 280 suspected to have TB. Sputum samples for the 280 suspected cases were transported to Kangemi Health Centre and other labs for processing. Out of these, nine positive cases were identified.

This significant number cannot be ignored therefore the Institution’s Clinical Officer will be conducting routine screening and health education.

Students were also counselled and tested for HIV and condoms distributed to them. The World Health Organization (WHO) recommends TB/HIV collaborative activities, including the three I’s namely: intensified case finding (ICF), isoniazid preventive therapy (IPT) and infection control for tuberculosis (IC). WHO further provides support in improving TB/HIV collaborative action to achieve universal access to HIV and TB prevention, as well as care and treatment services for all in need. People living with HIV are more likely to become sick with TB. Worldwide, TB is one of the leading causes of death among people living with HIV.

With funding from USAID, the TB ARC activity supports the adoption and scale-up of globally proven TB interventions by taking up the leadership role in strategies like the three I’s for TB/HIV activities.

The main objective of the training was to build capacity of the county teams and instil optimum skills and an overall competence in lung health.

**USAID Supports UNION Training on Principles of Tuberculosis Care and Prevention**

The USAID funded TB ARC activity has supported two intensive Union Trainings for County and sub County Tuberculosis (TB) and Leprosy Coordinators delivered by the International Union Against Tuberculosis and Lung Disease. The first training was held from May 7 to 13, 2017 with the second one being held from July 23 – 29, 2017. The trainings have seen over 60 participants trained on Principles of Tuberculosis Care and Prevention under the sub theme of Translating Knowledge into Action. The main objective of these trainings was to build capacity of the county teams and instil optimum skills and an overall competence in lung health.

Another objective of these trainings was to equip the county teams with knowledge on the current supervision checklists for data-driven supportive supervision visits at health facilities. In addition, it reminded them of TB basics such as reducing transmission through early detection and effective treatment of infectious patients without creating drug resistance. The importance of data was greatly underscored as what is not documented is not done, and what is measured is done.

“We have to bring the TB epidemic to an end and this can only be achieved by detecting the cases early,” said Dr E. Jane Carter one of the facilitators. Dr. Jane Carter is a past President of the International Union Against Tuberculosis and Leprosy and a Program Director at The Brown Kenya Program.

In addition, the training covered transmission of TB bacilli, diagnosis of TB infection and disease, treatment and provision of support to persons with TB exposure. A key component of monitoring and evaluation was also covered which included: recording, reporting, analysing and utilisation of data on TB case finding and treatment for decision-making at all levels of health care.

Speaking during the opening ceremony of the first training, former head of the National Tuberculosis, Leprosy and Lung Disease Program (NTLD-Program) Dr Enos Mauri said that the training was particularly designed to strongly build skills in principles of effective TB patient care and programme management. “This training will equip you with adequate knowledge and skills in ending TB in your respective areas and jurisdictions,” he said.

The participants were taken through the need to increase the index of clinical suspicion to prevent health system related delays in diagnosing TB. They were also trained on the role of the laboratory in TB control including different methods used to detect the presence of Mycobacterium tuberculosis (M. Tuberculosis) and their role in the diagnostic process. Participants were also familiarized with different methods used to determine susceptibility or resistance to anti-TB drugs, their advantages and the disadvantages. The facilitators also took the participants through identifying the quality assurance and control issues that influence accuracy of laboratory reports.

Under TB disease diagnosis, the focus was on radiography and systematic approach to chest x-ray. Participants were engaged in group practical sessions at different health centres within Laikipia and Kirinyaga Counties for the first and second trainings respectively and later delivered presentations on the findings, and reviewed the data collected. The sessions on TB and HIV collaboration highlighted the link between TB and HIV infection, the three I’s, basic HIV diagnosis and co-management of TB and HIV infection.

TB and other common co-infections like diabetes and mental health were also discussed. Considering all these, the participants were made to understand that it is paramount to provide prompt clinical management of co-infected patients. Blood-borne infection controls were also discussed at length to enhance safety measures at the health facilities. Some of these safety measures included: blood-borne infection control especially during HIV testing and other blood-drawing procedures that involve giving injectable TB medications. Air-borne risks occur when there is sharing of air space with undiagnosed, infectious pulmonary TB cases in crowded spaces.

In this regard, the facilitators stressed that health care worker safety is key in achieving all these infection control measures. The preventive measures discussed included: carrying out health education for patients, opening of clinic windows, separating coughing patients, and use of the intensified case finding tool. More importantly, they underscored putting up of Information, Education and Communication (IEC) materials and use of standard operating procedures in the laboratory.

With funding from USAID, the TB ARC activity monitors and evaluates TB collaborative activities, including the three I’s namely: intensified case finding (ICF), isoniazid preventive therapy (IPT) and infection control for tuberculosis (IC). WHO further provides support in improving TB/HIV collaborative action to achieve universal access to HIV and TB prevention, as well as care and treatment services for all in need. People living with HIV are more likely to become sick with TB. Worldwide, TB is one of the leading causes of death among people living with HIV.

With funding from USAID, the TB ARC activity supports the adoption and scale-up of globally proven TB interventions by taking up the leadership role in strategies like the three I’s for TB/HIV activities.

**TB Testing at Institutions of Higher Learning - Kabete Technical Training College**

The Nairobi City County TB team led by the County Tuberculosis, Leprosy Coordinator (CTLC) Elizabeth Munui carried out a rapid Tuberculosis (TB) testing activity at Kabete Technical College in Nairobi City on February 17. The training was to build capacity of the county teams and instil optimum skills and an overall competence in lung health.
Dr Enos Masini is the immediate former Head of the Ministry of Health’s, National Tuberculosis, Leprosy and Lung Disease Program.

Dr Enos Masini is the immediate former Head of the Ministry of Health’s, National Tuberculosis, Leprosy and Lung Disease Program. He is currently serving with the World Health Organisation (WHO). Dr Masini sheds more light on his experience as the Head of the NTLD-Program, a role that saw him provide overall leadership and coordination in planning, implementation, and evaluation of Tuberculosis, Leprosy and Lung health control activities in Kenya.

1. Tell us more about you?

I am a medical doctor specialized in managing and leading public health programs at both sub-national and national levels. In addition, I am a public health expert, with experience in the management of TB/HIV, strategic planning, operations and quality improvement. Previously, I was previously involved in various roles at WHO as a member of the Working Group on Public-Private Mix for TB Prevention and Care and as a member of the WHO Strategic and Technical Advisory Group for Tuberculosis (STAG-TB).

2. What was a typical day at work at the NTLD-Program like for you?

My day would start at six in the morning when I would go through my to do list and plan for key activities scheduled for the day. Thenafter, I would review any pending work like reports and email responses that required my attention, then attend to internal meetings from 8AM. Many of these early morning meetings would go on for about one hour when I would later attend to external meetings mainly at the Ministry of Health (MoH), with partners and civil society, and some at county level. This would generally go up to about 5PM. I would quiet often attend meetings and activities in the field and at this point, I would try to create a balance. It is not easy to travel and work at the same time. It calls for prioritizing activities to attend to. It was a delicate balance and I was privileged to work with an able Deputy and Section Heads what would sit in for me in other meetings. The NTLD-Program had great team spirit.

3. During your formative years in TB, did you ever see yourself attain the heights that you have reached now?

I did not think so. I joined the world of TB in 2008 as a Provincial TB Coordinator in Eastern Province. I would later be the District Head for Embu District. That was before devolution. As the Head of Program, my first task was to contribute in a meeting on Kenya’s Drug Resistant Survey as we needed information to plan for that exercise in October 2014. All the same, my focus remained clear as I was consistently committed to contributing towards ending TB at the local and national level.

4. What would you consider the defining moments as the NTLD-Program head?

This was during the release of the prevalence survey findings as this was preceded by a journey that brought together experts from all sectors of health - both medical and non-medical. The survey findings defined where Kenya is in TB control and it set pace on what needs to be done moving forward.

5. Why do you think Kenya is still among the 30 TB high burden countries?

It is unfortunate that Kenya is not only listed among the 30 high burden countries, but also among the high burden drug resistant Tuberculosis (DR TB) countries. This is because of congruent of factors like poverty, nutrition and housing, among others. TB is a socio-economic and developmental health concern. However, Kenya has done well in the last 15 years as far as TB control is concerned. However, more needs to be done to pull Kenya out of poverty as this is a contributing factor to the high numbers of TB cases.

6. The need to have a multi-sectoral approach towards ending TB has been greatly emphasized. How can this be achieved?

This will be done through strengthening of partnerships among key players namely: public and private sector, non-governmental organisations, community health volunteers, civil society, policy makers and development agencies.

7. What were some of your greatest lessons in relation to TB control during your tenure as head of Program?

Collaboration with a wide variety of partners. Partners bring meaning to the response and it is important to involve partners from planning to implementation.

8. What is your vision for the fight against TB in Kenya?

To end TB in our generation by the year 2030. But we have to do things differently and involve all stakeholders, from private providers to community health volunteers. We need to put our efforts in more than just hospital responses. We should be able to borrow more from the HIV world where they create synergies right from the community level through communication and advocacy. That is the way to achieve the targets.

9. So what next for you?

I will still be in a position to provide support to the NTLD-Program. As former Program head, my focus remained clear as I was consistently committed to contributing towards ending TB at the local and national level.

Global Fund (GF) aims at maximizing the impact of its investments to make an even greater contribution towards the vision of a world free of the burden of tuberculosis (TB) and HIV. Enhanced joint HIV and TB programming allows to better target resources, to scale-up services and to increase their effectiveness and efficiency, quality and sustainability. The TBM/HR grant articulates ambitious, strategically focused and technically sound investment, informed by the national health strategy and the national programmatic strategic plans.

The USAID funded TB ARC activity offered logistical and technical support for three separate writing workshops that engaged expertise from various stakeholders from the National Tuberculosis, Leprosy and Lung Disease (NTLD-Program), TB ARC, Civil society and AMREF Health Africa in the GF grant writing process. In addition, two consultants were engaged to work with the TB secretariat to coordinate, oversee and offer technical assistance to the writing team. The TB/HRV joint response to funding request application for 2018-2020 was submitted on May 23, 2017.

This activity offered an opportunity for TB ARC to forge partnerships, collaborations and to incorporate the lessons learnt, challenges and recommendations while implementing TB activities with NTLD-Program for scale-up on a wider scope.

One-on-One with Dr Enos Masini

Dr Enos Masini immediate former Head of the Ministry of Health’s, National Tuberculosis, Leprosy and Lung Disease Program.

GeneXpert Data Review Meeting and Calibration

The National Tuberculosis, Leprosy and Lung Disease Program (NTLD-Program) through the support of USAID TB ARC activity has trained GeneXpert super users to enable them handle GeneXpert implementation at county level. Through these trainings county Tuberculosis (TB) and Leprosy coordinators (CTLCs) and County Medical Laboratory Technologist (CMLTs) no longer rely on the support from the National Office. The super users have further been facilitated for support supervision within their counties. Quarterly review meetings are further organised to provide a platform to share and review the progress and analyze the performance of each GeneXpert facility.

During the review meeting, each super user presented progress reports, and performance indicators from their respective counties. Partners, CMLTs, CTLCs and national Program staff shared experiences on GeneXpert Implementation process, also attended the meeting and any related issues were addressed.

In 2010, the World Health Organization (WHO) endorsed the GeneXpert test, a molecular test that detects Mycobacterium Tuberculosis (TB) and identifies resistance to Rifampicin, a drug used to treat TB. Compared to other methods of testing for TB, Genexpert technology offers higher TB sensitivity and reduces the turnaround time for TB diagnosis and Rifampicin drug resistance testing from about six weeks to between 48-72 hours.

With funding from USAID, TB ARC activity in partnership with National Tuberculosis Leprosy and Lung Disease (NTLD-Program) and other partners, has been working to scale up the use of the GeneXpert technology as well as ensure the provision of high quality testing service. This has cascaded to all of Kenya’s 47 counties through the formation of GeneXpert technical working groups. In addition, equipment networking is being carried out to ensure access for all persons suspected to have TB countywide.

Currently, the number of equipment has increased to 150. It is a requirement and significant step to calibrate the equipment annually. Calibration defines the accuracy and quality of measurements recorded using a piece of cartridge specific for calibration purposes. Over time there has been a tendency for results to drift, particularly when using particular technologies or measuring particular parameters such as temperature and optics. To be accurate in the results being measured there is an ongoing need to service and maintain the calibration of equipment throughout its lifetime for reliable, accurate and repeatable measurements. Calibration of GeneXpert equipment mainly checks the optical systems, verification of the thermal system and checking on the module sub-system functionality.

With funding from USAID, TB ARC activity spearheaded the calibration of 130 equipment countywide. This activity was completed in February 2017. This has greatly reduced the errors that were previously being encountered.
Music and the Fight Against TB Define Me - Dj Eddy Chichi's Story

Eddie grew up a vibrant boy in the coastal town of Mombasa, he loved deep sea diving and would often spend his pass time engaging in swimming and music activities. After completing his studies, he did not waste time thinking of anything less than following his passion, which was to play music in nightclubs. A career he pursued with much zest that it finally became a full-time activity. This was however interrupted by what started as just a cough in 1994. At first, he dismissed it as a normal cold hoping that it would go away. The cough however persisted and he had to visit a health centre to seek treatment. He was diagnosed with the flu and put on treatment but the problem continued. He went back to the health centre and this time he was diagnosed with pneumonia.

He was put on antibiotics but again he was not cured. He diligently took his medication but ended up developing some respiratory complications. His mother advised him to visit the Port Reitz District Hospital which is now a sub-County Hospital where an x-ray was done and he was finally diagnosed with TB. He was put on TB treatment and resumed work at a nightclub in South Coast. For about ten years, he was plagued by a cough that would come and go from time to time. In as much as he was under treatment, the cough did not completely go away. In 2004, he went for a culture test, which confirmed that he had developed resistance to three main TB medicines Pyrazinamide, Isoniazid and Ethambutol.

In 2007, he lost a considerable amount of weight from TB to 35 kilograms, which caused him to be bedridden for some months, to the point where relatives and friends started spreading rumours that he was dead. He moved to Nairobi to seek further treatment where he was found to have resistance to all the TB drugs. Another culture test was done at the Kangemi Health Centre, which confirmed this. He was referred to the Kenyatta National Referral Hospital for further diagnosis and it was confirmed that he had Multi-drug resistant (MDR) TB. Life took a dramatic change for Eddy who now had to cope with taking medicine daily.

Eddy was among the first TB patients to be put on MDR TB treatment in Kenya. It was such a difficult journey as he not only faced stigma from family, but also from health care workers (HCWs) who would address him from a distance while wearing masks. He was put on antibiotics but again he was not cured. He diligently took his medication as advised. As a result of his condition, he had to stop his daily dilemma of swallowing 29 drugs in the morning and an additional nine every hour. He was put on 11 months' injection, with the daily dilemma of swallowing 29 drugs in the morning and an additional nine in the evening. His life had taken a sudden and unexpected twist. Eddy was however determined to fight for his life. As he regained strength, he joined other TB patients in community sensitizations.

Sad to say, after the treatment one of his lungs collapsed, a problem that saw him develop a breathing complication and he often struggles to gasp for air. Sadly, this condition cannot allow him to engage in vigorous activities including his favourite sport swimming. He understands that all is not lost and he exudes a tenacious spirit. He has established close association with several organisations including non-governmental organisations (NGOs), churches and health facilities where he volunteers as a TB champion to advocate for TB, and sensitive people on TB preventive measures, adherence and helps in demystifying myths. Through these forums, he gets opportunities to interact with policy makers who are key in making decisions on efforts to reduce the burden of TB in Kenya.

Having battled TB for 14 years, he participates in campaigns and events like World TB Day every year where he shares his experience to encourage others to seek treatment. He has taken part in sports events, places of work, higher education institutions and pharmacies. He has a clean health record. His husband found her unconscious and rushed her to the county hospital. Several tests were done and one turned positive. Her sugar levels were high confirming that she had diabetes. She was put on medication, which she steadily adhered to day-by-day while observing a healthy diet as advised.

At a dispensary in Siaya County, a cheerful Margaret confidently walked towards me looking all excited. She was eager to meet me just like I was to meet her. She was ready to share her experience once again explaining that she has occasionally shared the story publicly. This is a practice she feels has contributed to sharing her story during this year’s World TB Day commemoration in Siaya County. This is the story of Margaret, a great fighter of both TB and Diabetes, making her story uncommon.

Margaret’s story is unique in that many of us know of a close family member or relative who has either suffered TB or Diabetes in separate cases, however not many know of someone who has suffered both concurrently. The 47-year-old’s plight started one ordinary morning in 2013 when she collapsed while brushing her teeth. Before this, the mother of three had a clean health record. Her husband found her unconscious and rushed her to the county hospital. Several tests were done and one turned positive. Her sugar levels were high confirming that she had diabetes. She was put on medication, which she steadily adhered to day-by-day while observing a healthy diet as advised.

Later on in the same year, she developed a persistent cough. She was taken to hospital and advised to cut her uvula back tongue, as it was the cause of her irritating cough. She obliged and had it cut. However, the cough did not go away. At this point, she had lost a considerable amount of body weight and appeared frail. She was also sweating profusely at night.

This time, she visited the dispensary sub-county hospital with a longer list of symptoms. Upon carrying out several tests including TB and HIV, she tested positive for TB. She felt disheartened, uncertain of how she would manage TB and Diabetes. She shared her predicament with her family who dismissed the diagnosis as inaccurate since it was done at a dispensary. The family persuaded her not to take the TB medication. She did as advised and her condition got worse. Two weeks, later she was taken to the county hospital where an x-ray was done and again, she was diagnosed with TB. It was a devastating blow to her. She was put on eight months’ treatment including 60 injections.

To her surprise, she was referred to the facility near her home, which happened to be the same dispensary where she had been diagnosed with TB the first time. The walk from her home to the dispensary took her one hour. She found this distressing, prompting her to quit treatment as she often felt fatigued walking to the facility daily to receive the prescribed injections. She says, “I have the disease and it is not easy to manage it as a working woman.”
She could also not bear the embarrassment and stigma from many in her village as they thought she had HIV as the TB clinic was housed within the Comprehensive Care Centre (CCC).

After some time, she realised that the treatment was done separately and TB patients would often get treated early and released to go home. This realization elevated her confidence and she went back for treatment. On the other hand, her medical expenses had become too heavy to a point where she contemplated quitting the diabetes treatment.

This was not all, she faced rejection and isolation at home. Her cups, plates, spoons were labelled and stored aside from the others. However, this did not last long as with time, she improved and her family members started accepting her back. The other great challenge she faced was swallowing the large TB tablets with an unpleasant smell.

Margaret successfully completed her TB treatment and is now left to battle diabetes. Her family is supportive of her and often exempts her from heavy and hazardous chores that could get her injured as injuries and wounds suffered by diabetic patients take longer to heal. She eats healthy foods and hazardous chores that could get her injured as injuries and wounds suffered by diabetic patients take longer to heal. She eats healthy foods and

According to the World Health Organisation, diabetes is a serious, chronic disease that occurs either when the pancreas does not produce enough insulin (a hormone that regulates blood glucose), or when the body cannot effectively use the insulin it produces. Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. This means diabetes is on the rise most markedly in the world’s middle-income countries. This reflects an increase in associated risk factors such as an increase in co-infection rates.

People with a weak immune system, because of chronic diseases such as diabetes, are at a higher risk of progressing from latent to active TB. People with diabetes have a 2-3 times higher risk of TB compared to people without diabetes. Early detection can help improve care and control of both.

To successfully execute smooth referrals, KANCO offers an incentive to the herbalists for referred patients. Phoebe appreciates this referral model as she treasures life. “Money is the least of my priorities so long as people in my community are healthy,” she affirms. However, this has greatly reduced her income from selling medicines as many of her patients now prefer to go to hospital. She therefore hopes to venture into a different business to sustain herself.

Call her a herbalist, traditional healer, magician or sorceress, improving the health of people in her community is all that Phoebe desires. To the best of her ability, Phoebe is dedicated and passionate in attending to people with all kind of body illness. “I am happy to do what I do, and I am not afraid or embarrassed to speak out about it,” she says boldly. Phoebe walked me through life as a herbalist one chilly morning when I visited her home where she unearthed more about plant power.

Sixty-six-year-old Phoebe lives in the informal community of Kibera and she is one of many who offer herbal remedies to treat diseases. She started the practice back in 1968 as a way of maintaining wellness when little was known of current medicines. She would seek spiritual intervention before treating people. “Some patients link their problems to witchcraft, the reason why they will not seek treatment from the formal health centres,” she explains.

Phoebe treats women, men and even childhood illnesses from the comfort of her house and often gets up to 10 cases a day. She has placed a bench outside her house where patients sit while they wait to be ushered in for treatment. Her drugs are all sourced from plants and her “Green Pharmacy” has a range of medicines that she gets from her rural home in Kapseret and occasionally from the leafy suburbs of Karen in Nairobi when she cannot afford to travel to the country side.

Her plant-sourced medicines are gathered from a variety of plant materials including leaves, stem covers, fruits, branches and even roots. To fully produce the medicines, she either boils or dries these parts and instructs her patients to drink, swallow or bath with the contents depending on the type of disease they have. Her medicinal plants are affordable ranging from about Kshs 50 to 500.

She receives patients with all sorts of problems from dental, pregnancy complications, infertility, low libido, HIV, malaria and even TB. Phoebe believes that her treatment works for her patients as several them have often come back to her with positive feedback. However, those with illnesses like TB and HIV had often become worse. At one point, there were very many TB defaulters from health facilities around Kibera and other urban villages in Nairobi. Upon investigation, the community health volunteers (CHVs) discovered that majority of the patients had turned to traditional medicine.

In light of this, the CHVs through the National Tuberculosis, Leprosy and Lung Disease Program (NLTLD-Program) and various partners planned for a training to reach out to and sensitize the herbalists.

With funding from USAID, the TB ARC activity through sub awardee KANCO, identified the herbalists and traditional healers and trained them on how to identify and refer presumptive TB cases to formal health centres. Phoebe was one of the beneficiaries of this training and she can now identify all the common TB symptoms from the top of her head. She is now fully aware that the moment a patient presents these symptoms to her, her role is not to treat, but to link the patient to the CHV who then takes the patient to the nearest TB clinic.

So far, she has referred 20 patients with two testing positive for TB. KANCO has so far conducted orientation of 63 informal service providers (ISPs) in Nairobi, Tharaka Nithi, Marsabit, Kisumu and Homabay Counties. The ISPs have further been linked to formal health systems within the five focus counties, supervised and given screening and referral tools. This model has seen 237 patients referred by informal service providers including unregistered chemists from the five counties with 28 of these patients testing positive.

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Exploring TB in the World of Herbs – The Story of Patient Referral Model to Formal Health Centres

Phoebe displays plant medicine at her home

A close-up of the medicines
Technology has changed the way we do business, how we interact with others and it has also presented a wealth of opportunities in health service delivery. Technology brings convenience at work, as managing volumes of paper can be overwhelming. It is therefore a significant step to go paperless, seeing as electronic documents are much easier to search and manage. The TB ARC activity through the USAID funding has taken this direction and is supporting the enhancement of the national tuberculosis (TB) data system - TIBU.

TIBU is a digital system developed to conveniently avails data for decision making. This has enabled data management, tracking and monitoring of TB patient data throughout the country. It is a cloud-based solution built on two different interfaces; one for payments commonly known as TIBUCash running on Linux and the other for patient data known as Patient Management System (PMS) running on both Android and Microsoft platforms. The android-based application runs on handheld devices that store data online, making it accessible over the internet. This allows the National Tuberculosis and Lung Disease Program (NTLD-Program) to easily and securely access data from any part of the world through authentication. TIBU was developed by TangazoLetu.

Leveraging on emerging trends in technology, TIBU allows users, principally county and sub county tuberculosis and leprosy coordinators (CTLCs and SCTLCs), to make prompt data uploads and request for supervision reimbursements. It is also used in the field to perform regular monitoring activities like supervision. Data is collected electronically through mobile computer tablets and uploaded onto the central database.

TIBU efficiently allows for optimization of electronic registers, one time data entry at source using a mobile tablet, data transfer in real time to the central unit, and seamless integration with District Health Information Software (DHIS2), currently underway. Additionally, TIBU provides the ability to generate real time reports at any level, allowing for prompt validation. The data is immediately available for analysis on case finding, eventually to generate real time reports at any level, allowing for prompt validation. The system is immediately available for analysis on case finding, eventually to generate real time reports at any level, allowing for prompt validation. The USAID funded TB ARC activity has been supporting these trainings as they provide a great platform for gathering feedback from the users, critical in upgrading and further advancing the system. The users also benefit from these trainings as they engage with the information Communication and Technology (ICT) and Monitoring and Evaluation (M&E) staff where they get updates and refresher tips on how to use the entire system.

Phase Three is bringing in an upgrade of all the components and more specifically, the integration with DHIS2. Phase Three also presents and opportunity for orientation of users on the World Health Organization (WHO) definitions, an overhaul of TB & DR TB registers, an improvement of CTLC supervision checklists, and a feedback system informing users of the progress of payment. Phase Three B is expected to have feature leprosy, pharmacovigilance, community TB, lung disease, communication and advocacy and laboratory function integration.

The USAID funded TB ARC activity has been supporting the use of the TIBU system through the purchase of tablets for use by CTLCs and SCTLCs to ensure timely and accurate reporting. It has further supported their capacity building through various trainings as they provide a great platform for gathering feedback from the users, critical in upgrading and further advancing the system. The users also benefit from these trainings as they engage with the information Communication and Technology (ICT) and Monitoring and Evaluation (M&E) staff where they get updates and refresher tips on how to use the entire system.

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