



# TiBa

A magazine for DNTLD-P

ISSUE 4 / April -June 2020



## One on One

Dr Brenda Mungai shares her passion and experience in the field of TB and HIV



## Nick Wambugu

My battle with Tuberculosis



## PTBLD

Living with long-term respiratory impairment

**The Scorecard:**  
DNTLD-P  
Quartely Report



## TB REACH

**Strategic Initiatives  
to Find Missing TB  
Cases in Kenya**



# TB AND COVID -19

#ItsTimetoEndTB

#FightCOVID-19



**STAY HOME  
STAY SAFE**

REPUBLIC OF KENYA



MINISTRY OF HEALTH

— LET'S STOP —  
**CORONAVIRUS**  
**#ItsTimetoEndTB**





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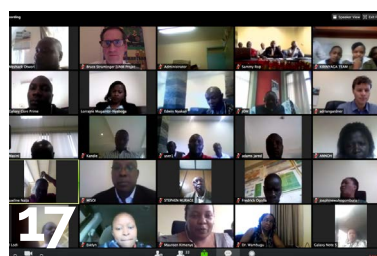
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# Word from the Cabinet Secretary



Kenya has always joined the global community to mark the World Tuberculosis Day which is commemorated on 24<sup>th</sup> March every year. However, due to the COVID-19 pandemic and the National Emergency Response Committee's advisory on Coronavirus, all public gatherings were suspended. The World TB commemoration event which was to be held on Tuesday, March 24, 2020, in Meru County was cancelled.

World TB Day is set aside to create public awareness on Tuberculosis, a disease that remains a public health concern. The day is also meant to remember and honour those who have dedicated their energy to TB prevention, care and treatment. The Ministry of Health through the Division of National Tuberculosis Leprosy and Lung Disease has made sure that TB does not become completely invisible during the COVID-19 pandemic by running media campaigns and sustaining the provision of TB management services.

TB affects an estimated 10.4 million people globally causing nearly 1.5 million deaths annually. In Kenya, TB is the fifth leading cause of death and our country is

ranked among the world's thirty nations with a high burden of the disease that together, account for more than 80% of the world's TB cases. In 2019, Kenya reported and treated 86,504 TB patients, among them 8,391 (9.7%) were children. The number of drug-resistant TB cases has been increasing over the years and in 2019, there were 688 people with multidrug-resistant TB reported and put on treatment. Though TB diagnosis, medicines and nutritional support are offered free of charge at all government and faith-based health facilities, there are still many with TB who are missed and are therefore not receiving the care they need posing danger to more people whom they come into contact with.

The 2016 TB Prevalence Survey estimated that more than 40% of people with TB are missed annually. This year's World TB Day theme was 'It is time to End TB in Kenya,' which rallied us to double our efforts in finding all the missing people with TB and put those at risk of TB on preventive treatment.

There are still some huge funding gaps that face TB prevention, care and treatment. The National Strategic Plan (NSP) for TB and Lung Diseases endeavours to address domestic resource mobilization and optimize the utilisation of available resources.

President Uhuru Kenyatta committed to ending TB by 2035 during the UN High-Level Meeting on TB held in September 2018. As part of this commitment, the Ministry launched the 'Maliza TB County Initiative' to mobilize domestic resources to support TB prevention, care and treatment. This initiative is being piloted in Kiambu and it is envisaged that by 2025, all counties will be covered.

The Ministry is also committed to work with all stakeholders to ensure that Kenya achieves the Big Four Agenda on Universal Health Coverage. We are aware that TB patients have been known to face catastrophic costs while seeking treatment and care. In the spirit of UHC,

the NSP targets to have zero families facing catastrophic costs due to TB thus providing financial protection. That is why we need a multi-sectoral approach in planning and implementing appropriate affordable primary health care interventions which will transform the lives of Kenyans.

As the government, we are doing everything we can to protect TB patients and survivors from COVID-19 exposure. Our hospitals are alert as we continue with Active Case Finding, putting in mind that TB and COVID-19 symptoms are more or less the same. The control of COVID-19 in Kenya has benefited a lot from the work of the National TB program in areas of infection, prevention and control, diagnosis, contact tracing, and isolation.

Though fragile, we have made gains in the fight against TB in Kenya. We will ensure normal programs and care for people with TB are not interrupted or affected as we address the current COVID-19 pandemic.

I call on all stakeholders and partners to continue supporting the ministry in our concerted efforts in fighting TB and working towards ending the disease by 2035. It is Time to END TB in Kenya. Tuberculosis is preventable, treatable and curable. Let us all join hands in fighting TB.

*Thank you !*

**Hon. Mutahi Kagwe, EGH**  
Cabinet Secretary

# Word from the Ag. Director General



Welcome you all to the fourth edition of TiBa – the official Newsletter of the Division of National Tuberculosis, Leprosy and Lung Disease Program (NTLD-P). Tuberculosis (TB) is the world's biggest killer infectious

diseases. The World Health Organization (WHO) estimates that approximately 54 million people survived Tuberculosis (TB) between 2000 and 2017 alone. According to the Kenya TB Prevalence Survey 2016 findings, Kenya is estimated to lose at least 60 persons to TB every day.

The unprecedented COVID-19 pandemic has serious impacts to the Ministry of Health (MoH) in terms of service delivery. The ministry has already channeled enormous resources towards fighting this pandemic. Evidence shows that people with pre-existing health conditions are at greater risk. Those with pulmonary TB are at greater risk and are more vulnerable to the novel coronavirus due to their pre-existing lung disease.

The MoH has ensured that all TB services are accessible. We have maintained an uninterrupted supply of TB drugs through normal supply and distributions

to counties. Those with TB have access to all necessary psycho-social and nutritional support. The National TB program has also put up mechanisms to communicate and provide briefs to all stakeholders including people with TB and TB care providers.

The Ministry also sends special gratitude to our health care workers who are at the frontline against TB and COVID-19. In spite of the emergency nature of the coronavirus outbreak, you have dedicated yourselves to not only end TB in Kenya, but also to risk your lives as we keep Kenyans safe from the COVID-19 pandemic. The government will ensure you are supported to undertake your jobs safely and effectively.

**Dr. Patrick Amoth**  
Ag. Director General, MOH

# Word from the Head of the Program



I take this opportunity to thank the National TB Program fraternity, our partners and other stakeholders for their dedication towards ending TB in Kenya. Every quarter, we strive to keep our stakeholders posted with up-to-date achievements and success stories.

As we strive to accomplish the Program's goals, it is important to look back and assess our achievements. This edition of TIBA reviews some of the Program's recent activities. Through the scorecard, it summarizes the program's quarterly data and the activities undertaken in the last quarter. On the COVID-19 pandemic, the National TB program has been at the forefront supporting the Ministry of Health in the fight against the virus as well as ensuring that TB services are maintained in line with the fundamental pillars of the 2019-2023 National Strategic Plan. It is, however, important to understand the challenges those with TB face and how to ensure they are protected against COVID-19.

Nick Wambugu and Amina\*, former TB patients share with us their stories on how they battle with TB. Their personal stories are very inspiring. It is important

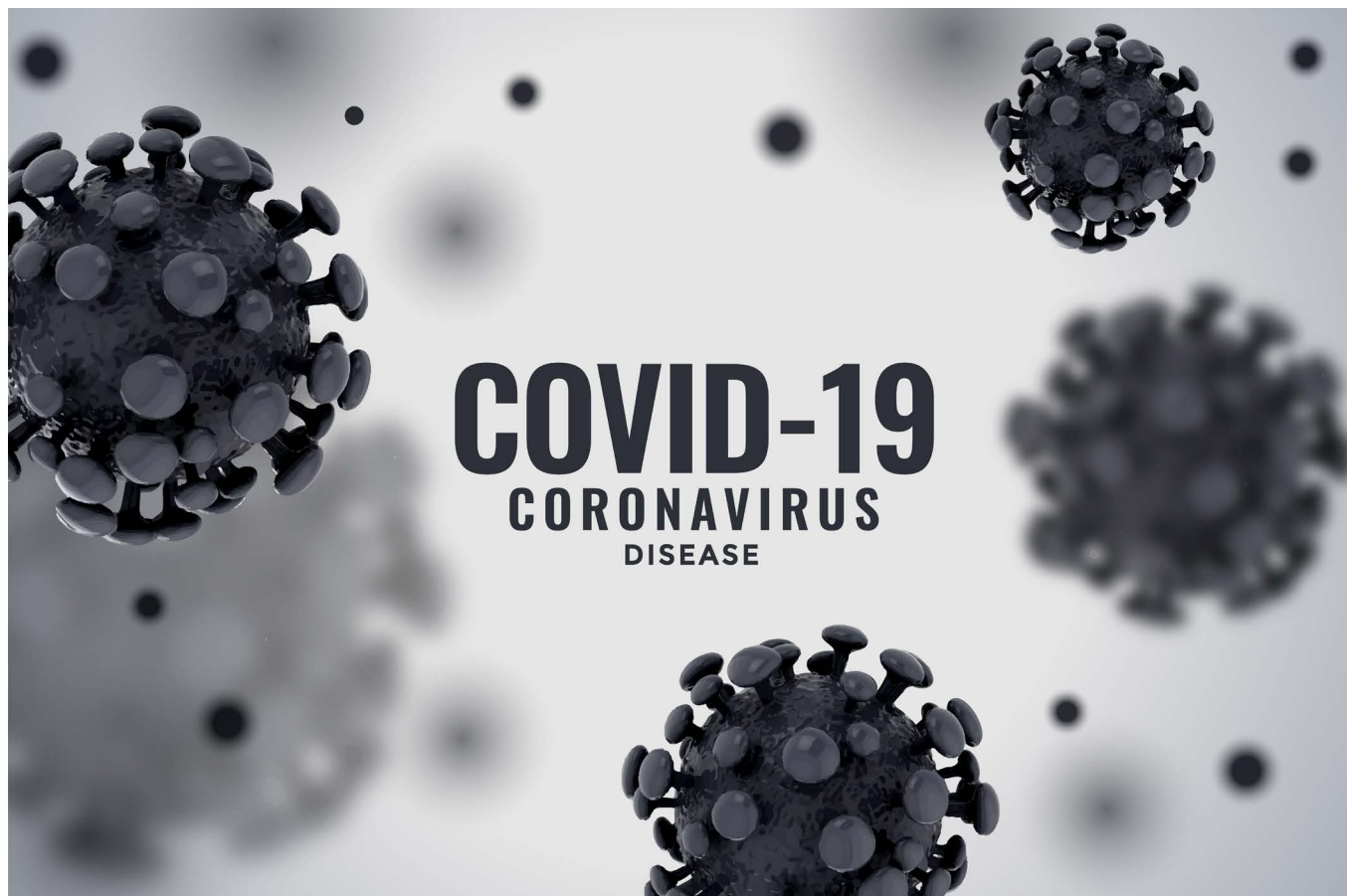
we encourage more TB champions to come out and help us fight the stigma associated with TB. Innovation has played a key role in our success as a program particularly in active case finding of missing TB cases. From TB REACH, to Project ECHO, this edition captures in-depth the road we have walked with our partners, in particular, the Global Fund, the USAID funded TB ARC II, CDC, STOP TB PARTNERSHIP, KAPTLD, and AMREF. Thank you for your support.

Enjoy reading TIBA.

**Dr Elizabeth Onyango**  
Head, DNTLD-P



## COVID 19 and Tuberculosis: Focus on vulnerable communities



By Mbetera Felix | DNTLD

**T**uberculosis (TB) is the fourth killer disease in Kenya and the world's leading infectious killer disease. According to the World Health Organization (WHO), nearly 10 million people were affected and 1.5 million deaths were reported in 2018. Although TB has had profound impact in Kenya, over the years, the nation has made great strides in the fight against TB. The COVID-19 pandemic, however, has posed a great threat to the achievements made so far. What is important is to ensure that as a country, we protect the lives of people with TB and provide essential services like early TB diagnosis and treatment. The National TB program has been at the forefront not only to support the Ministry of Health in the fight against COVID-19 but also in ensuring that TB services are maintained. Finding and

treating people with TB remains one of the fundamental pillars of the National Strategic Plan (2019-2023).

The provocation of social stigma as a result of the COVID-19 pandemic not only undermines our social cohesion but also promotes social isolation particularly of risky groups like those affected by TB. This according to the World Health Organization (WHO) can; drive people to hide the illness to avoid discrimination, prevent people from seeking health care immediately or even discourage them from adopting healthy behaviours. All key stakeholders including media and communities should be supportive by demystifying the myths around the TB and COVID-19. This is important in safeguarding the continuity of prevention, diagnosis, treatment and care for people with TB in our communities.

COVID-19 is an illness that mainly affects the lungs and airways and is caused by a new coronavirus. Those who contract it may show similar symptoms to TB such as coughing and fever. TB patients, if infected, may suffer from more severe forms of COVID-19 just like those with weak immune systems. COVID-19, just like TB, is easily spread in densely populated areas due to proximity to others.

COVID-19 spreads when someone with the virus coughs or sneezes and releases droplets into the air. Anybody nearby who breathes these droplets in could get infected. The spread can also be through touching our faces after touching surfaces that have the droplets or the virus. Those diagnosed with pulmonary TB and have any damage on their lungs are more vulnerable to other infections

including COVID-19. Those with latent TB but in good health are unlikely to be at more at risk from COVID-19 than the general population.

When it comes to prevention for both TB and COVID-19, there are several effective measures we should put into consideration including; using disposable tissues when coughing and sneezing and washing our hands or use hand sanitizer, regularly wash our hands for 20 seconds each time with soap and water or use hand sanitizer, especially when we get home or to work, blow our nose, sneeze or cough, or handling food, avoid touching faces with unwashed hands, avoid close contact with people who are unwell without protective gear and taking all medications as prescribed for those being treated for active TB.

People with TB and COVID-19 may experience cold and flu-like symptoms and it is important they seek quick medical advice. The most common symptoms according to Centers for Disease Control and Prevention include :

COVID-19	TB
Persistent cough	Cough
High fever	Fever
Difficulty breathing	Weight loss (Failure to thrive among children)
Chills	Loss of appetite
Repeated shaking with chills	Chest pain
Headache	Night sweats
Sore throat	Extreme tiredness
Loss of taste or smell	
Muscle pain	
Symptoms usually appear quickly and disappear after about seven days.	Symptoms appear gradually over several weeks and persist if they are not treated.

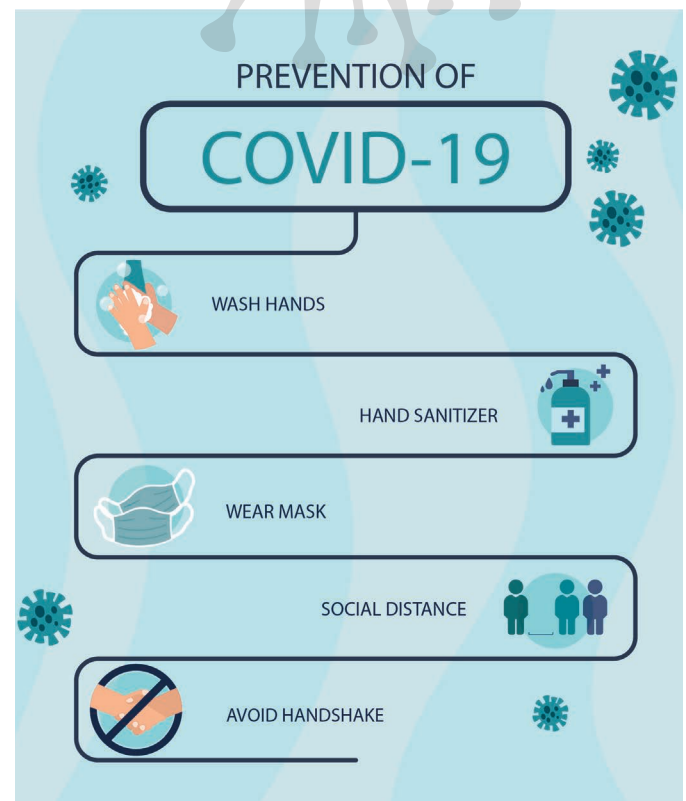
**As we struggle to deal with the COVID-19 pandemic, we must ensure that the impact of this pandemic does not create another tragedy for vulnerable communities like people with TB.**

TB patients need to take all medication as prescribed even when they fall ill with COVID-19. The doctors or nurses in charge should advise accordingly. Those cured of TB and have no other health conditions will have similar COVID-19 risks just like the general public. However, former TB patients who had lung surgery or with post TB lung disorders are considered to be at high risk thus the need to protect themselves.

As we struggle to deal with the COVID-19 pandemic, we must ensure that the impact of this pandemic does not create another tragedy for vulnerable communities like people with TB. Already, our health system is under considerable pressure. The Ministry of Health, county governments, partners and other key stakeholders should endeavour to maintain essential TB services. The use of technology like Keheala can also come in handy.

The TB program should incorporate innovation that will enhance access to treatment through community health workers and follow-ups of patients through telemedicine and the TIBU system. The program should also ensure supplies; particularly medicines, personal protective equipment, and lab reagents reach all facilities on time.

Better collaboration will reduce the risk that TB patients have and sustain the gains we have made.



# Using innovative ways to enable access to TB services in Kenya



Mercy Nyangaresi, TB Reach Program Manager, handing over a cool box and falcon tubes to a chemist in Athi River.

By Mbetera Felix | DNTLD

The Division of National Tuberculosis Leprosy and Lung Disease Program (DNTLD-P) has provided falcon tubes, cartridges and cool boxes to selected private health facilities and chemists in Machakos County. The cool boxes will ensure that the viability of sputum samples is maintained in the cold chain, before and during transportation.

DNTLD-P successfully submitted a proposal to the TB REACH secretariat on the establishment of diagnostic hubs in select private laboratories and health facilities. These hubs offer fast-tracked TB diagnosis for people with presumptive TB referred from a nearby network of spokes comprising of chemists, private clinics and nursing homes. The twelve-month program which started in November 2019, is running on a proof of concept basis and covers five counties which include Machakos, Kajiado, Nakuru, Kiambu and Trans-Nzoia.

Also, a web-based real-time information system was developed to aid in the prompt referral of patients and samples to the diagnostic hubs. People confirmed with TB are initiated on care

with individual providers in the target areas thus receiving early diagnosis and treatment. The providers were identified and enrolled through a mapping exercise.

The hubs are motivated to participate through a combination of non-monetary incentives such as placement of Xpert, access to free laboratory reagents, tailored training and on-the-job supervision, external quality assurance and financial incentives.

According to the 2016 prevalence survey, 27% of the people with TB symptoms seek care from individual private providers who have limited engagement with DNTLD-P. As part of the public-private partnership (PPP) which is a core agenda in the 2019-2023 National Strategic Plan, the program appreciates that a segment of the population seeks initial care from the private sector and efforts are in place to foster this collaboration.

Dr Elizabeth Onyango, Head DNTLD-P, noted that the Program has been a frontrunner in implementing PPP activities for the past 20 years and is committed to scaling up interventions that will help address critical gaps in the TB patient care pathway.

“The engagement of the private sector is in line with the TB REACH project which aims to increase early case detection and ensure timely and complete treatment while maintaining high TB cure rates in Kenya”, she said.

TB REACH focuses on reaching people with limited or no access to TB services and looking for innovative ways to enable access. The program has already sensitized facility-based health care workers as part of the scale-up of Active Case Finding under Global Fund catalytic funding.



A chemist taken through the process of spoke networking.



## Post TB Lung Disease: Living with long-term respiratory impairment



By Mbetera Felix | DNTLD

A medical history of Tuberculosis (TB) is considered a risk factor for long-term respiratory impairment. The World Health Organization (WHO) estimates that approximately 54 million people survived TB between 2000 and 2017 alone. More often than not, long term respiratory complications and post-TB lung dysfunction is not recognized in TB management despite its association with reduced quality of life. It is under this backdrop that the International Multidisciplinary Programme to Address Lung Health and TB in Africa (IMPALA) in collaboration with the Division of National Tuberculosis, Leprosy and Lung Disease Program in Kenya hosted a post TB lung disease stakeholders' forum in February, at Double-Tree Hotel by Hilton, Nairobi. The forum was aimed to raise awareness of post TB lung disease and develop a framework on the way forward in tackling the disease in Kenya.

Even though several epidemiological studies have shown pulmonary impairment to be relatively common among former TB patients, there is a need for more scientific research particularly in Kenya that will lead to strategic approaches and solutions to long-term pulmonary morbidity, also referred to as post TB lung disorders (PTBLD).

Kenya still has a big vacuum in the operational public health program for lung health which focuses on prevention and control of respiratory medicine. The Ministry of Health still lacks a standardized and integrated diagnostic and management algorithm for respiratory diseases which include lower respiratory tract infections in adults, asthma and chronic obstructive pulmonary diseases (COPD). This probably is indicative of lack of adequate follow-ups after TB patients complete their medication.

Whereas the 2019-2023 National Strategic Plan (NSP) represents a shift by the TB Program via operationalizing a full-fledged lung health program, the strategic approaches are still visionary and will bear no fruit if not well executed. Further, there is a need for strategies to factor post TB patients explicitly. Some of the critical issues that need to be put into consideration when focusing on PTBLD include;

**Guidelines:** It is important to include post TB management in international and national TB guidelines and policies. The TB program should be designed in a manner that will deal with the problem adequately. The focus should not just be on identifying and treating active TB disease. Follow-up of patients with TB who are usually sent home after bacteriological confirmation of cure at the end of treatment is also crucial. Further, there is a need to review and adopt the existing lung health policy guidelines and training materials. The development of diagnostic and management algorithms for lung health will come in handy.

**Capacity Building:** The NSP captures deployment of a technical officer at the National TB Program to coordinate the implementation of lung health as one of the major activities that will support the setting up of a management system for lung health in Kenya. Well, it is a good start. However, the deployment should be of passionate and qualified technical officers.

Health care workers (HCWs) should also be capacitated on clinical monitoring after cure of TB to ensure the provision of good quality of care is supported after treatment. This will also help in documentation and research thus building to knowledge on managing post TB disorders. HCWs need to be empowered to understand the risk that former TB patients face in developing chronic respiratory disorders. This helps

*Continued Pg. 12*



A man with short dark hair, wearing a light pink long-sleeved button-down shirt, dark trousers, a black belt, and black loafers, is leaning on a rustic wooden bench. He is looking off to the side with a thoughtful expression. The background shows a garden with green plants, a corrugated metal wall, and trees.

# MY BATTLE WITH TUBERCULOSIS

Nick Wambugu's story of hope.



My name is Nick Wambugu, aged 26 years. I am a primary school teacher in a private school in Embu Town, I have survived TB twice. I first fell ill in 2012. Then, I was in form four at Ikuu Boys' High School, Chuka. I remember going home for holidays during the second term mid-break and the moment my mother saw me, she almost dropped with shock. I was so emaciated that she could barely recognize me. I was coughing so hard, she insisted on rushing me to hospital. I was taken to Ishiara General Hospital the same day, screened for TB and tested positive.

The disease had affected me so much. I only weighed 35 kgs at the age of 18 years. I was immediately put on a six-month medication which I took under the supervision of my mum and the guidance of the hospital staff. I responded well to the medication and was able to sit for my KCSE.

I later joined Rubate Teachers College in Chuka for a P1 course which I completed in July 2015 without any health issues. I got my first job as a volunteer in Nairobi where I worked for a month but had to quit due to unfavourable climatic conditions. I was always suffering from colds and chest infections. I went back to Ishiara where I got another teaching job in a nearby private primary school but the chest issues persisted and had to quit a job for the second time.

I would get TB-like symptoms but which never showed up on testing. I was put on strong antibiotics which didn't do any good. I was by then, a school-based Early Childhood Development and Education (ECDE) Diploma student waiting to sit for my final exam in December 2016. I graduated officially as a P1 teacher, but I was in agony the whole time. I had shortness of breath and eventually began to experience some fluid-like movements and sounds in my chest.

My parents took me to a private hospital where I was diagnosed with serious anemia. A chest X-ray was

recommended and its results showed that my left lung was blurred. A chest computed tomography (CT) scan had to be done and its results showed I had pneumothorax. My left lung had totally collapsed. That explained the fluid sounds like movements in my chest. I was referred to Kenyatta National Hospital (KNH) to have the fluid drained. I was in so much shock and denial at that moment.

On 11<sup>th</sup> October 2016, I was admitted in Ward 7C at KNH. The procedure to remove the fluid in my chest was very painful, but I took it all. Having a 12 cm pipe inside my weak chest was the most painful and uncomfortable experience I have ever had. What scared me the most was how the pus kept draining endlessly. I started losing hope of ever leaving the ward.

When the pus was tested, high traces of TB were found. That meant I had to remain in my isolated room and take TB medication for six good months, for the second time.

My friends and family would visit daily and that at least gave me some hope. One morning the doctor told me that my case would only be solved by removing my left lung to save the right lung from the infection that threatened to spread. I had never imagined myself in the hands of a surgeon. At first, I refused but they gave me time to make up my mind. I decided I would rather die naturally than let anyone open up my chest especially on the left side where my heart lies. A major doctors' strike almost made me clap in joy because I was already tired of the tube reinsertions into my lungs, however this was short lived.

After pondering on the options that I had and with the advice of my family and medic friends I had made in the cause of my treatment at KNH, I decided to have the surgery done in a private hospital. Over 20 litres of pus had already been drained from my lungs by the time I was transferred to Coptic Hospital along



Nick Wambugu sharing his experience during the Post TB Lung Disease workshop organized by IMPALA and DNTLD-P

Ngong road for the surgery. In spite of the operation being complicated, it was all successful. The only agonizing part was some breathing difficulties and intense pain especially when I coughed. I was glad I made it out alive and best of all my lung problem solved.

My surgeon kept a close eye on me for a few days and ensured I was okay. The best moment was being discharged on 4<sup>th</sup> February 2017. I felt like I was leaving prison after many years. I completed my medication from home and attended all my follow up clinics. I was declared fully healed of TB and lung collapse issue well taken care of. I was also able to sit for my ECDE Diploma final exams, passed well and graduated. My friends and family were so supportive and happy to see me back in good health.

Surviving on one lung and dealing with chalk dust on daily basis has been my greatest challenge. I spend a lot on medication, however thankful to have fought and won my battle with TB twice and I don't intend to stop.

***I would get TB-like symptoms but which never showed up on testing. I was put on strong antibiotics which didn't do any good. I was by then, a school-based Early Childhood Development and Education (ECDE) Diploma student waiting to sit for my final exam in December 2016.***



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## Post TB Lung Disease: Living with long-term respiratory impairment

during counselling, particularly before and during treatment, with patients and their families on the implications of residual lung damage.

Low level of education is a risk factor for TB due to poor socioeconomic status that can lead to less access to health services including diagnosis of TB. Education on lung health and PTBLD is thus important among policy-makers, HCWs, patients and other key stakeholders.

HCWs need to know that if the prevalence of chronic respiratory symptoms and pulmonary dysfunction in post-TB patients is high, a quick intervention is required. They need to be empowered on how they should manage a patient who has completed treatment and returns with a cough, recurrent TB or drug-resistant TB. In some instances, patients have been put on re-treatment. The re-administering of anti-TB regimens which are not only unnecessary but also potentially harmful due to toxicity can impact negatively our health system.

Awareness is also crucial in fighting stigma, especially in our communities. Those with continuous respiratory symptoms like cough even after they have been cured may be believed to be infectious.

**Early Diagnosis:** There is still no clear way to follow-up ex-TB patients. Those with PTBLD are likely to either suffer in silence or visit a health facility when it is very late. It is encouraging that the TB program is already putting in place guidelines for symptom assessment, chest imaging and lung function tests to ex-TB patients a few months after their treatment completion.

Delays in the diagnosis or initiation to TB treatment can lead to increased lung injury-causing persistent lung dysfunction even after treatment. Mechanisms of early referral should thus be in place, particularly for chronic lung disease services. Early diagnosis is important in reducing PTBLD. Just like people with COPD, all those at risk should receive appropriate diagnosis through tests like spirometry and treatment through inhalers to manage their conditions.

**Funding:** It is important to map partnerships and resources from organizations and institutions with common interests to support health financing for lung health including PTBLD. IMPALA is a good example of a multidisciplinary collaborative work which involves clinical, social, health systems, health economics and implementation scientists from Africa and the United Kingdom. As a four-year collaborative programme funded by the National Institute of Health Research under the Global Health Research call and led by Liverpool School of Tropical Medicine (LSTM), it aims to generate new scientific knowledge and implementable solutions for lung diseases. Good funding will further ensure that there is a supply of essential equipment and commodities to support diagnosis and treatment at health facilities.

***Awareness is also crucial in fighting stigma, especially in our communities. Those with continuous respiratory symptoms like cough even after they have been cured may be believed to be infectious.***

## NIHR Global Health Research Unit on Lung Health & TB in Africa

### The Big Five

**Asthma:** The global prevalence has been growing over the past 3 decades, accounting for 383,000 deaths in 2015 alone. Asthma is particularly burdensome among children from low- and middle-income countries (LMICs), including much of SSA, and has been attributed to air pollution. Chronic Obstructive Pulmonary Disease (COPD): 90% of global deaths occurred in LMICs. The biggest factor leading to COPD is tobacco smoking.

**Tuberculosis (TB):** TB is the world's leading infectious killer, accounting for more deaths globally than HIV and malaria combined. SSA accounts for one quarter of all TB cases and deaths. Despite major gains in TB control, half of all TB patients in SSA are still not diagnosed and therefore do not receive treatment. Post-TB lung dysfunction often also goes unrecognised, despite its relatively high prevalence.

**Lung Cancer:** The most common cancer in the world, with an estimated 1.8 million new cases in 2012 - most (58%) of which occurred in LMICs. Tobacco smoke causes most cases of lung cancer with air pollution also thought to be a factor.

### Acute Respiratory Infections:

Lower respiratory tract infections and pneumonia alone cause more than 4 million fatalities annually, particularly in LMICs. More than 90% of deaths from respiratory syncytial virus (RSV) infection in children occur in LMICs. New respiratory pathogens, like severe acute respiratory syndrome (SARS), which are quickly transmitted are major threats especially in LMICs where there are weak infection control measures.

(Source/ IMPALA)



***Dr Brenda Mungai,  
Director of TB and Lung Health,  
Centre for Health Solutions - Kenya***



By Diana Kagwiria | TB ARC II

*In this TiBa edition, we have a sit down with Dr Brenda Mungai, Director of TB and Lung Health at the Centre for Health Solutions - Kenya. She is the former Chief of Party (COP) for Tuberculosis Accelerated Response and Care activity (TB ARC) and Tuberculosis Accelerated Response and Care II activity (TB ARC II) from 2014 to 2019.*

*With over 10 years of programming experience in the field of TB and HIV, her passion has led her to pursue a PhD in Global Health at Liverpool School of Tropical Medicine having done a Master of Science in Tropical Medicine and Infectious Diseases at the same institution and a Bachelor of Medicine and Surgery at the University of Nairobi.*

### 1. If your life was like a farm, which season can we say you are in tilling, planting or harvesting?

I feel I am a bit of all. It is a cycle, isn't it? You till, plant, harvest then you do it all over again with years of experience. I have done some harvesting in some areas but I still feel that I am in a mixed season. I am still trying to polish myself and get better as well as continuously re-engineering myself.

### 2. When did your interest in TB begin?

It began when I was working as a medical officer at Mweiga Mission Hospital, Nyeri County. Here, unlike in medical school and internship where we diagnosed TB and then someone else took over the follow-up management, I began interacting with TB patients in TB management, record keeping and other indicators arousing my interest in the field. JM Gachengo who was a TB coordinator then offered mentorship in this area. From then on, I have done TB

work in Grootfontein-Namibia, Maralal-Samburu County, Siaya and Kisumu Counties and then at National level in Kenya.

### 3. What was your typical day like as the Chief of Party of TB ARC and TB ARC II?

My days mostly began at 5:30 am and by 7:00 am I was at the office for a meeting or planning out the day. On a typical day as the COP, this would be followed up with a planning meeting with either the National TB Program team or with USAID as well as with other partners. I would also spend time discussing technical implementation with the team. In the afternoon I would approve payments online to support the project activities. As the COP, the working hours extended past 5:00 pm and into the weekend as I sometimes got emergency calls to sort out issues here and there.

### 4. What do you consider as your defining moments as the COP?

Being part of the first post-independence TB prevalence survey in 2015-2016 was a highlight of my role. The planning, executing and disseminating the 2016 TB Prevalence Survey was a huge task but working as a team made it a success. This survey was mostly electronic-based hence one of the things we did as TB ARC was to procure and support the IT team in terms of the hardware and the software, they needed for carrying out the survey.

Secondly, it was ensuring there was logistical support for the field site teams in terms of fleet to the 45 counties visited.

Thirdly, the communication team at CHS ensured a good delivery of the results as well as the survey findings dissemination. The results of the survey have shaped the current national strategic plan on TB as well as the implementation of interventions for example active case finding. I am sure this survey will be a point of reference for the next 10 years before another survey is conducted.

Another memorable moment is being technically involved in the strategic planning of the Kenya's National TB Program policies and strategies, among them, the National TB, Leprosy and Lung Disease Strategic Plan 2014-2018 and 2019-2023. Am confident that what we



have put in those plans if implemented will move the TB, leprosy and lung health agenda to greater heights in the country.

I have also been involved in several other surveys as a technical advisor among them the catastrophic survey that measured the cost of treating TB and the drug-resistant TB survey.

#### 5. What have been your greatest lessons in TB control both as a technical person as well as Chief of Party?

A multisectoral approach is the way to go in TB control. TB is not a biomedical disease only; we need to look at poverty, infrastructure and the transport system.

TB and poverty are interlinked. To quote a worker's speech to a doctor by Bertolt Brecht "When we come to you, our rags are torn off us, and you listen all over our naked body. As to the cause of our illness, one glance at our rags would tell you more. It is the same cause that wears out our bodies and our clothes." If we improve our social-economic status even for people living in low settlement areas we will have reduced TB. We should learn from the United Kingdom (UK) who had a TB scourge but when the citizens' social economic status improved, TB stopped being a major problem. In Kenya, if we get people earning more per day, they will live in better settlements that are well ventilated decreasing their risk of contracting TB.

We also need to target schools because there is a lot of TB in schools due to overcrowding. We need to look for TB in areas where we were not looking for it.

#### 6. What is that one thing that you learnt about yourself for the five years you have acted as the COP?

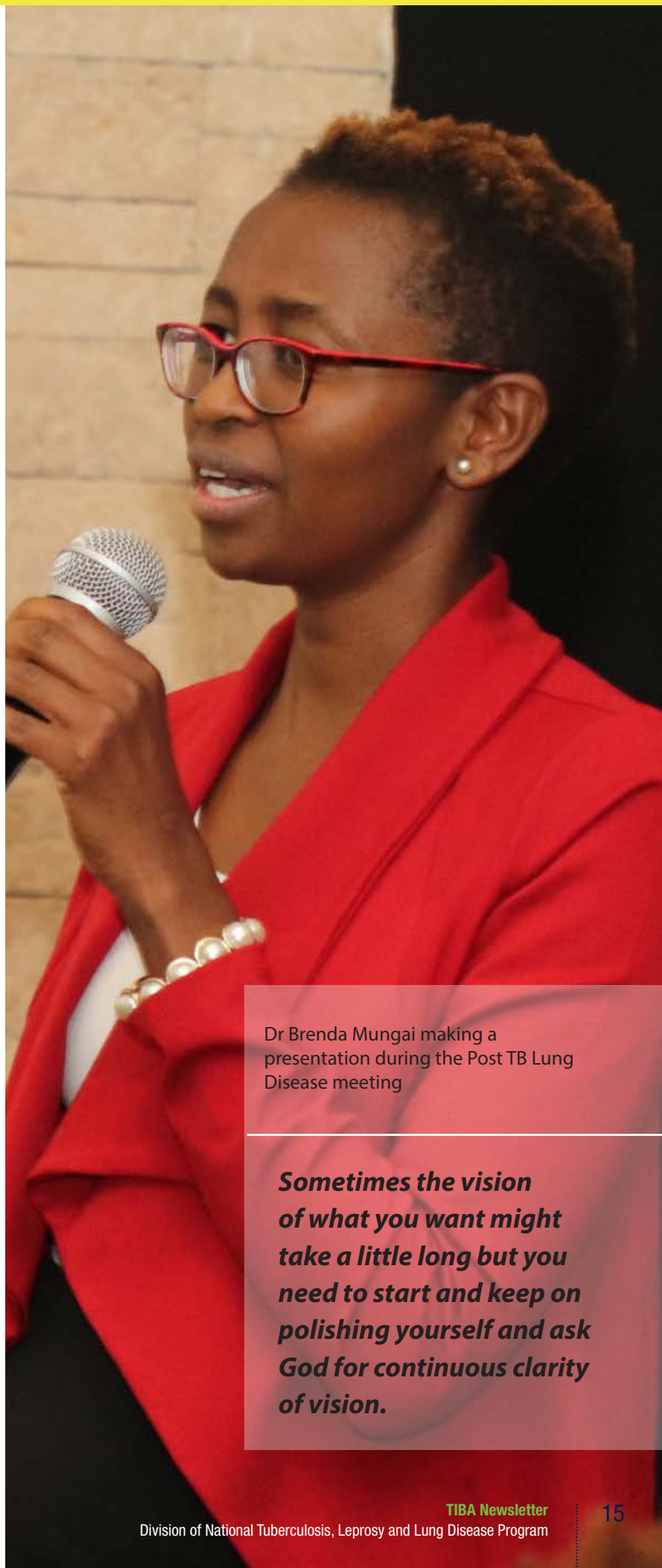
That I have a thicker skin than I previously thought I had! There were some tough times as well as unforeseen crises that needed patience and a lot of grace to handle. I learnt to handle what I could and seek for support as necessary. I am thankful to have had an excellent team supporting me as a leader. Through it all, I developed resilience, diplomacy skills and I learnt to seek win-win solutions.

In the past 5 years, I have found this to be very accurate; "Leadership and learning are indispensable to each other"— John F. Kennedy. It has been a learning opportunity and I continue the pursuit to be a transformational leader!

#### 7. With the decreasing donor funding, what can be done to eliminate TB?

TB is not a stand-alone disease hence we should ensure TB is well integrated into the health system. There should be no health facility whether a hospital, health centre or a dispensary that is not offering TB

*Continued Pg. 16*



Dr Brenda Mungai making a presentation during the Post TB Lung Disease meeting

***Sometimes the vision of what you want might take a little long but you need to start and keep on polishing yourself and ask God for continuous clarity of vision.***

Continued from Pg. 13

services. TB should be integrated into the current Universal Health Care (UHC). The government of Kenya must step in to fund the initiatives that were donor-supported to fill in the gaps. We must also engage the private sector for them to understand how TB affects them and in turn begin supporting measures to eliminate TB.

## 8. Kenya is in the process of rolling out the injectable free TB regimen. What does this mean for the players in the TB world?

During the 49<sup>th</sup> Union Conference held in Mexico, a young lady in university shared how she lost her hearing due to TB treatment. Luckily, she was able to afford a cochlea implant; which is expensive for the majority of the patients. My take-home from her story was - "No patient should have to choose between getting better or losing their hearing. You should not have to choose between death or being deaf". This is the premise on which the injectable free regimen is based.

Kenya will do away with the injectable medications for TB treatment that causes toxicity like loss of hearing and renal damage. This is a good thing for the patients, health care workers and caregivers because even the administering of the daily injections for the patients is painful especially for the children.

## 9. What next for Dr Brenda?

In my new position as the Director of TB and Lung Health at CHS, I will be looking at the interface of TB and lung health. For my PhD, I will be researching on what influences policy in lung health in Kenya and could newer tools like operational modelling be impactful? Could policymakers quickly use research findings to make decisions?

In the long term, I am interested in Post TB lung complications and how we can

avert or manage this to ensure patients after post TB treatment have a good quality of life. Programming for this is a new frontier that excites me.

## 10. What would you tell that young person that is looking up to getting where you are?

Look up the iceberg theory of success! When we look at people, we consider successful, we only see the iceberg, the effort, work, failures, disappointments etc., are beneath the surface. Create a vision board, what is your vision? What are your immediate, mid-term and long-term goals? Now, what are the steps to get there? Just like organisations have a strategic plan and review it periodically! Take one step at a time.

And no, it doesn't always work out as planned and that's okay. Some of my immediate plans ended up as mid-term or longer and I'm still working on some. But having written those down, the universe seems to align and it's easy to be aware of an opportunity that you are preparing for. This is intentional living.

Invest in yourself and take time to sharpen your saw. I believe we are all on a journey of self-improvement, keep building on your strengths and decreasing your weaknesses. It is said one of the best days in our lives is when we were born and the next best day is when we discover why. Work continuously at discovering your purpose, I'm also trying to do that!

## 11. What has helped you in getting where you are?

God Almighty and strong family support! My mum and my late dad were a great team that offered us a great start on believing we could achieve anything we put our minds to. My mum who doubles up as my role model has scaled great heights and we hope to have an impact in society as she does. My children motivate me to pass on to them a better world!

I have been fortunate to have good friends, great colleagues and good supervisors who have given me not only support but also space to work and build myself. The good working relationship and support from the National TB program, from all the heads of programs, program officers and partners I have worked with have been instrumental in ensuring we deliver on what we have set out to do.

## 12. Who are the people who have had an impact on you on the TB front internationally?

I have been fortunate to work closely with three former presidents of The Union! Dr Jeremiah Chakaya and Dr Jane Carter who we have worked with in Kenya and Prof Bertie Squire who was my supervisor at master's level and currently during the PhD. In their right, they have done fantastic work in the TB world that I admire and would love to take it to the next level. I am truly privileged to be standing on the shoulder of giants!

## 13. What next for Dr Brenda in the next five years?

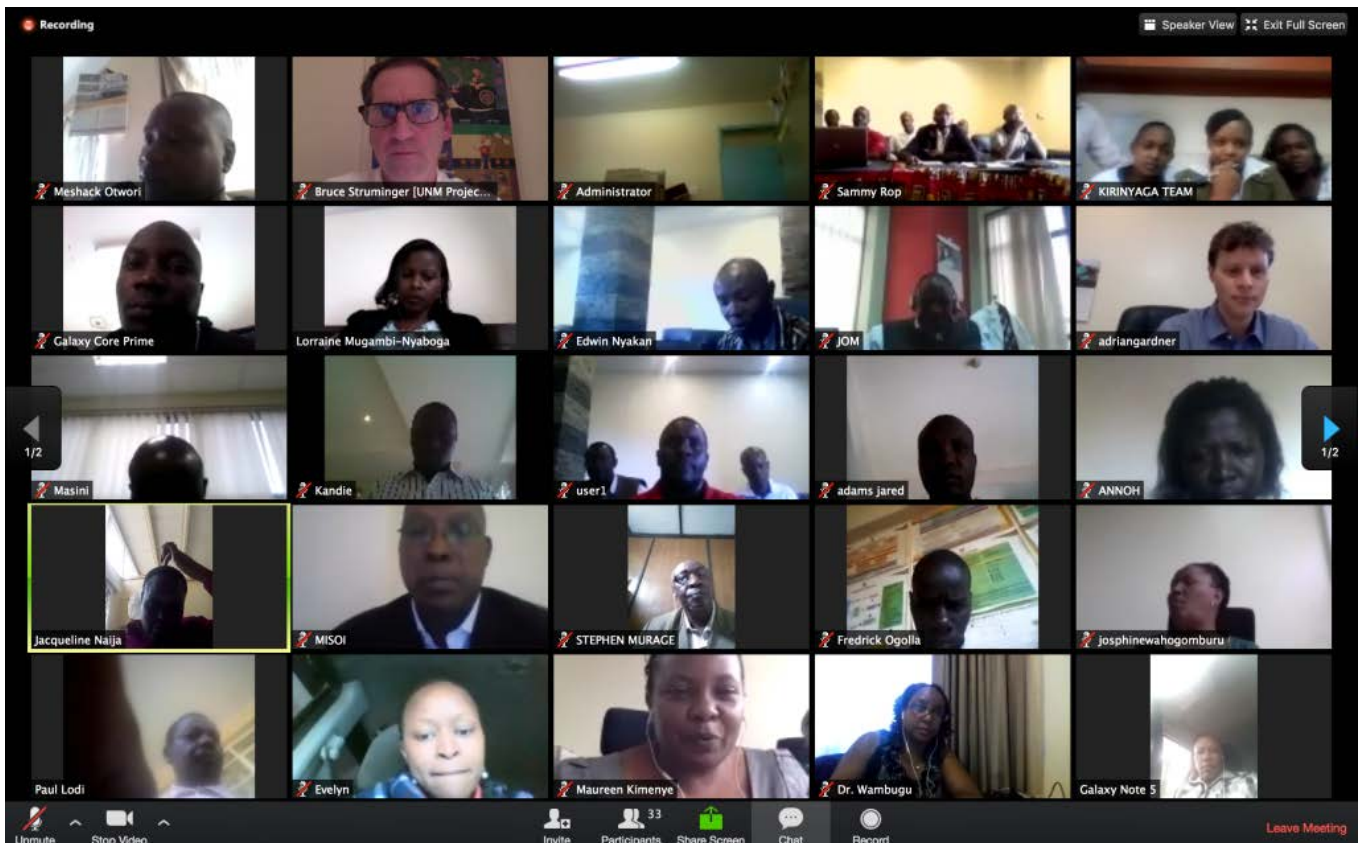
By God's grace, well; I'll have a PhD in Global Health and I hope to be working at contributing to the END TB strategy that will be in 10 years from then, and ensuring we have strong programs for post TB lung disease. I hope to be influencing global policies in TB and Lung Health with the work we do in Kenya! Also, I hope to mentor more upcoming female leaders in global health.

## Parting shot

Sometimes the vision of what you want might take a little long but you need to start and keep on polishing yourself and ask God for continuous clarity of vision. The universe does conspire to get you what you want. That is opportunity meeting a prepared mind!

***"No patient should have to choose between getting better or losing their hearing. You should not have to choose between death or being deaf". This is the premise on which the injectable free regimen is based.***

# Project ECHO: An Online Learning Platform Empowering Healthcare Workers to Prevent, Diagnose and Treat TB



A screenshot from an ongoing ECHO session /Photo: TB ARC II.

## By Diana Kagwiria | TB ARC II

World Health Organisation lists Kenya among the 30 high TB burden countries globally. According to the Kenya TB Prevalence Survey 2016 findings, Kenya is estimated to lose at least 60 persons to TB every day. One contributor to this is three-quarters of the people with TB symptoms miss out on TB diagnosis and treatment even after presenting themselves to health facilities.

Since 2016, Centre for Health Solutions – Kenya (CHS) with funding from the United States Agency for International Development (USAID) through the Tuberculosis

Accelerated Response and Care activity (TB ARC) and its successor Tuberculosis Accelerated Response and Care II (TB ARC II) activity in collaboration with the National Tuberculosis, Leprosy and Lung Disease Program (NTLD-P) and the International Union against Tuberculosis and Lung Disease (The Union) has been working to change this trend. This is through a free TB online learning platform for health care workers known as Extension for Community Healthcare Outcomes Project (Project ECHO).

The goal of Project ECHO in Kenya, an innovation adopted from Mexico, is to increase access to specialist care countrywide by developing professional communities of learning and practice in Kenya. It aims to improve quality patient

care; enhance access to technical expertise by peripheral facilities; improve surveillance of TB and drug-resistant TB in both adults and paediatrics, and improve diagnostic and management skills in isoniazid preventive therapy, GeneXpert, paediatric diagnosis and a practical approach to lung health.

“Project ECHO’s tagline is education magnifier. It is a very simple approach where you bring healthcare professionals of all types into a virtual room with a speciality to discuss cases and have short didactics. The platform enables the transfer of knowledge of the specialist to other individuals in the field in a simple way around

*Continued Pg. 20*





## Performance Review Meeting, Sarova Woodlands, Nakuru, February 2020



Aiban Rono, Monitoring and Evaluation Officer, DNTLD-P taking participants through the objectives of the Performance Review Meeting



Dr Lorraine Mugambi, Chief of Party, TB ARC II awarding Tharaka Nithi County who emerged second best.



Mr. Philip Kimani from Clinton Health Access Initiative awarding Nyamira County who were third best.



Anne Munene from Amref Health Kenya making a presentation during the meeting.



Dr Lorraine and Dr Onyango following the award proceedings.



Mombasa TB county management and coordination team making their presentation.



Dr Wachira- TB ARC II, engaging a presenter during the Q&A session



## Post TB Lung Disease Stakeholders Forum



Dr Brenda Mungai, Dr Jeremaih Chakaya and Dr Joseph Kibachio engaging during the workshop .



Evelyn Kibuchi and Nick Wambungu from Stop TB Kenya.



Dr James Wagude and Dr Evelyn Kimani representing counties during the workshop.



Dr Joseph Kibachio from MoH making a presentation.



Dr Eliya Zulu from AFIDEP giving welcoming remarks.

## Active Case Finding Technical Assistance - Vihiga County



Martin Githiomi - M&E DNTLD, Jafarali Ahmed - CMLC, Catherine Githinji - NTRL, Dr Macharia Stephen - Technical Advisor, Lilian Kerubo - ACF coordinator and Mr Paul Wekunda - Subcounty TB coordinator.



Lilian Kerubo and Stephen Macharia counter checking County and National TB data in one of the health facilities in Vihiga county.



DNTLD-P TA team visiting a TB clinic in one of the health facilities.



Catherine Githinji engaging lab technicians in one of the facilities.



DNTLD TA team giving feedback to Mr. Paul Ahindukha-Vihiga County Director of Health.

Continued from Pg. 17

## Project ECHO: An Online Learning Platform Empowering Healthcare Workers to Prevent, Diagnose and Treat TB

the questions they are seeing in their patients every day," notes Dr Jane Carter, former president of The Union and one of Project ECHO lead trainers.

Project ECHO has a distinct setup with the main site called The Hub serving peripheral centres referred to as spokes. Kenya's HUB is currently at the National TB program offices in Nairobi and the spokes are spread across the 47 counties in the county offices and at the health facilities. There is a connection that is set up which means one needs internet that TB ARC II is currently supporting bundling of monthly.

"The good thing about ECHO is that you don't need fancy equipment. All you need is a handheld device; a phone, a tablet or a laptop. One also needs internet connection to link to the spoke through live stream. It is almost like face to face communication," says Dr Brenda Director of TB and Lung Health, CHS.

"At 'The HUB' level we give log in link to the spoke through live stream. It is almost like face to face communication. We ensure that there is a facilitator who is facilitating the sessions and though sometimes we have situations where the facilitator is not at The HUB, we loop him/her to The HUB and they can facilitate from wherever they," adds Dr Brenda.

The ECHO project sessions are conducted twice weekly; every Monday and Tuesday 8:00 am – 9:00 am. The sessions begin with training followed by questions and comments to ensure that the teams understand what is being spoken about

or talked about during that time.

"We are proud as a country to be among the first adopters of the ECHO innovation. In the 2019, we able to trained over 2800 healthcare workers. From these trainings, there has been a decrease in the knowledge gap among the health care workers. The trainings have provided health care workers with additional skills on TB and other related topics," says Dr Paul Wekesa, Chief Executive Officer, CHS.

Dr Wekesa adds, "ECHO has provided a platform for TB Data4Action trainings, supported the initiation and monitoring of patients on new molecules such as Bedaquiline and Delamanid, demonstration on hand-on skills necessary in paediatric diagnosis like practicum sessions on nasopharyngeal aspirate, gastric aspirate and the tuberculin skin test and aided the dissemination of new policies by the National TB Program."

His sentiments resonate with those of Elizabeth Mueni, Nairobi County TB Coordinator, who notes, "Through the ECHO platform we are seeing an increase in childhood TB diagnosis which was a challenge before. Healthcare workers were not comfortable diagnosing childhood TB or even doing nasopharyngeal aspirate, but through ECHO they have learnt how to get a good sample from children and also understand how childhood TB presents."

Mueni adds that through case presentation in the ECHO sessions, healthcare workers have been able to learn how to manage difficult TB cases and now they are comfortable managing

TB patients.

According to her, the ECHO project has assisted the private health sector healthcare workers majority of whom are not able to leave their facilities to attend a three to five-day trainings to get updates of TB and lung health.

Eric Omache, a clinician at Administration Police Training School Health Centre Embakasi, Nairobi shares, "Through the ECHO platform we have been able to liaise with other team players in the TB industry. We have been able to discuss issues regarding TB diagnosis, the use of TB Lipoarabinomannan (TB LAM), TB management and current regimen of paediatric TB. We have also been able to learn and benchmark with others on the use of data tools."

His sentiments are echoed by his counterpart Peter Gathii, Pharmacist, Embakasi Health Centre who urges his fellow healthcare workers to join in the weekly sessions as the platform has helped him and his colleagues to improve TB services in the facility which include finding the missing TB patients, treating them, and ensuring high-quality care from presumptive to completion of TB treatment.

Kenya is currently planning to introduce injection-free regimen, and the TB ECHO platform will be an important tool to effectively reach out to everyone as was proved in the sensitisation and faster adoption of the drug-resistant TB management short term regimen.

***"The good thing about ECHO is that you don't need fancy equipment. All you need is a handheld device; a phone, a tablet or a laptop. One also needs internet connection to link to the spoke through live stream."***



## Wrong Diagnosis almost led to Unnecessary Surgery – Amina\*



One of Amina's daughters in one of the TB ARC II supported clinical review meetings/Photo: Kwale TB coordinators.

**My happiness was short-lived by the confirmation in the hospital that my other child was ailing from TB, but seeing the recovery progress my daughter was making gave me hope.**

By Diana Kagwiria | TB ARC II

Amina\*, a resident of Kwale County, was on a business trip in Wajir County when she got a call from her sister that her 10-year-old daughter had fallen ill. Her daughter was coughing, having night sweats, fever, and had developed a protruding lymph node swelling on her neck discharging pus. She immediately sent money to her sister to have the girl treated in the nearest private health facility.

“At the private hospital, the doctor ruled out pneumonia as the cause of the coughs, night sweats and fever. As for the neck swelling, he recommended immediate surgery to remove the nodes. I panicked on hearing this as I had not anticipated the illness to be this serious. I halted the trip and immediately travelled back home,” Amina recalls.

On getting home, she realised that despite her daughter being on pneumonia medication, her situation was worsening by the day. The once playful girl spent most of her time sleeping. Her weight had also reduced drastically. Seeing this, Amina opted for a second opinion, but this time around, in the nearest public hospital, Voi County Referral Hospital.

To her surprise the swelling on her daughter's neck did not require an operation instead upon examination and tests, she was diagnosed with TB adenitis, a form of paediatric TB that commonly presents itself as an asymmetrical, painless, non-tender lymph node enlargement in the neck area sometimes with or without discharge.

*Continued Pg. 22*

\* Not her real name.

Continued from Pg. 21

## Wrong Diagnosis almost led to Unnecessary Surgery – Amina\*

"After a thorough examination involving a chest x-ray and an excision of the swelling, the doctor confirmed to us that my daughter had TB. I was surprised to hear that but at the same time happy to learn that she did not require surgery to get cured," Amina recounts.

Since the Voi County Referral hospital was far from their home, they were referred to the nearest dispensary to begin a 6-month course of paediatric TB treatment regimen. This involved daily injections and oral medication under observed therapy by a health care worker.

"At the Macknon Road dispensary in Kinango Sub county, the health officials were very receptive to us. They immediately put my daughter under medication and by the fifth day, the swelling had disappeared. She was also no longer coughing, or having night sweats or fever and had regained her cheerfulness," Amina shares.

A team of collaboration made up of the Centre for Health Solutions - Kenya, Tuberculosis Accelerated Response and Care II (TB ARC II) coast region officer, Mr Godano Mamo and the National TB Program, Kwale County and Sub-county coordinators did a home follow-up for contact tracing. This involved screening everyone in the household and the neighbours who had close contact with the sick child. It was from this visit that Amina's other child was found to have presumptive TB symptoms and referred to Voi County Referral hospital for TB testing.

"My happiness was short-lived by the confirmation in the hospital that my other child was ailing from TB but seeing

the recovery progress my daughter was making gave me hope that they would all get cured," Amina recalls.

Her second child was also put on medication and just like her sister, she responded well to the medication. The children have now fully recovered and gone back to school.

"I am happy that my children have now fully recovered, and they have been able to go back to school. I am also grateful to the donors as I would not have afforded the treatment for both of them," Amina says.

Paediatric TB diagnosis confirmation is difficult; however, the clinical diagnosis of TB in children is not as difficult using the approach provided by the World Health Organisation. This includes careful history assessment of TB contact; identification of symptoms suggestive of TB such as persistent cough, weight loss, fever and or night sweats, reduced playfulness, fatigue; and clinical examination which entails growth assessment, chest X-ray interpretation and sputum collection for smear microscopy.

Awareness by health care workers on the above makes identification of paediatric TB uncomplicated. Initial diagnosis of this TB is not only beneficial in preventing progression of the disease leading to death but also averts the spreading of the disease to others as was the case in Amina's household.

TB ARC II with funding from USAID is working with the National TB Program by capacity building health care workers to conduct appropriate paediatric TB diagnosis and treatment. This is by conducting weekly free online

extension for community healthcare outcomes (Project ECHO) an innovative tele mentoring program designed to create virtual communities of learners by bringing together healthcare providers and subject matter experts using video conference technology, brief lecture presentations, and case-based learning, fostering an all learn, all teach approach on paediatric TB, frequent continuous medical education at the facility level, and through the development of paediatric TB algorithms, guidelines, job aids and information, education and communication materials targeted to health care workers.

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**BE A  
TB  
CHAMPION**

***I am happy that my children have now fully recovered, and they have been able to go back to school.***

# Show me your data, and I will tell you how 'well' you are doing, or not...



Dr Elizabeth Onyango, Head DNTLD-P, hands over trophy to CDH, CTLC and SCLTC of Mandera County. The county emerged position one during the TB ARC II supported TB performance review meeting held at Sarova Woodlands, Nakuru, February 2020.

## By Wandia Ikua | TB ARC II

We all get a kick out of being acknowledged for a job well done, in fact, Herzberg's Motivation-Hygiene (two factor) theory indicates recognition and achievement as factors for employees' satisfaction, none withstanding.

Tuberculosis (TB) control in Kenya is largely dependent on County and Sub County TB, Lung and Leprosy Disease Coordinators (C/SCTLCs) who are at the forefront of spearheading the planning, implementation, monitoring and evaluation of TB related activities at sub-national levels.

Every year, Centre for Health Solutions - Kenya (CHS) through the USAID funded Tuberculosis Accelerated Response and Care activity II (TB ARC II) in collaboration with the National Tuberculosis, Leprosy and Lung Disease (NTLD-P) brings together the TB coordinators, County Pharmacists, County Medical Laboratory Coordinators and respective County Directors of Health from 47 counties.

The main objective of these themed meetings is to review the performance of key TB Indicators for the previous year, identify gaps/challenges and develop evidence-based and data-driven action plan for the counties to adopt towards reducing TB incidence.

This year's meeting dubbed "It is time for quality of care in our health systems to end TB in Kenya" was held in February 2020 amidst pomp and "glamour". A deviation from the norm, an innovative approach of ranking counties using a scorecard that used a selection of indicators, indicators were weighted, counties and sub-counties were ranked as per their performance using 2019 data from the TIBU surveillance system.

Through the support of USAID, TB ARC II in addition to supporting the technical and logistical support for this meeting (and others previously held), provided awards for the top 3 counties. The minutes leading to the awards ceremony was apprehensive and it was astounding to see the awardees faces when their counties names were called out.

2019 County performance excellence award went to Mandera County, a pleasant surprise indeed!

Mandera County emerged the best county with a total weighted score of 79.24, followed by Tharaka Nithi 71.69 and Nyamira County 71.59. Kisii County produced the best performing and third runners up Sub County.

As we all strive towards achieving the End TB strategy global targets of reducing incidence by 90%, reducing TB deaths by 95% between 2015 and 2035 and ensuring no family suffers catastrophic expenses due to TB, we celebrate and recognize efforts-small and big along this journey of ending the TB pandemic in the world and more importantly in Kenya! IT IS TIME!

***Mandera County emerged the best county with a total weighted score of 79.24***



# Championing the Delivery of TB Services at Community-Level



A healthcare worker during an Active Case Finding sensitization forum in Mombasa county.

## By Amref Health Africa in Kenya

Amref Health Africa in Kenya's Global Fund TB project continues to support the delivery of TB services at community-level across the country. Some of the community activities delivered through community health structures include contact tracing, tracing of treatment interrupters, active case finding and social support for clients with drug-resistant TB.

### Contact Tracing

Community Health Volunteers (CHVs) are at the forefront of tracing contacts of people with TB. In the first quarter of 2020, CHVs were facilitated to visit 7,502 households of bacteriologically confirmed TB patients and children under five years of age with TB. They screened 24,432 contacts. 5,429 were presumptive and were referred for further evaluation.

**24,432**

**Number of contacts of bacteriologically confirmed TB patients and children under five years of age with TB screened, of whom 5,429 were presumptive and were referred for further evaluation**

### Tracing of treatment interrupters

TB clinic appointment diaries have been provided to HCWs to help in scheduling patient appointments. This has eased identification of patients who miss appointments, hence boosting tracing efforts. CHVs managed to physically trace 674 treatment interrupters and referred 443 of them back to treatment.

### Active Case Finding

Active Case Finding (ACF) activities supported by Amref include support of

141 linkage assistants to 137 facilities and periodic ACF meetings in 540 facilities. This is mainly to ensure that patients who visit the facility are screened for TB and linked to diagnostic facilities if they are presumed to have TB.

### Social Support for Drug-Resistant TB Clients

In line with the End TB Strategy target to reduce the number of families incurring catastrophic costs due to TB to 0% by 2020, Amref continues to support DR TB patients through monthly cash transfers of Kshs. 6,000. The money facilitates patients' transport to health facilities and providing for nutritional needs. Health care workers offering community-based care to DR TB patients are supported with cash for transport each month. An average of 458 patients and 267 health care workers were supported every month.

# Strategic Initiatives to Find Missing TB Cases



Screening activity for truck drives and corridor community (North Alliance)/ Photo: Amref Kenya.

## By Amref Health Africa in Kenya

Kenya qualified for an additional US\$ 6 million as a catalytic investment to implement three strategic initiatives to find Kenya's missing TB cases in the community and health facilities. Working closely with the TB Program, Amref has been leading the implementation of three strategic initiatives that include the Kenya Innovation Challenge TB Fund, Public-Private Mix and Pay for Performance.

Kenya Innovation Challenge TB Fund (KIC-TB)

Nine organizations were competitively selected to implement targeted, innovative interventions to find missing people with TB in the community. The innovations are implemented in 6 counties as follows:

### Nairobi

RESoK; using USSD platform to enhance self-screening for TB among men in workplaces and informal settlements,

Sema Limited; Use of Automatic Screening Teller Machine (ASTM) for self-screening of persons seeking services at Huduma Centres, passport control office and Standard Gauge Railway terminus.

TAC Health Africa; use manned call centres and financial support to enhance screening for TB in informal settlements.

### Kakamega

Community Support Platform; Using school-going children to screen family members and household contacts.

### Kiambu

Resources Oriented Development Initiative; Expanding TB screening in congregate settings to include detainees in prisons & police cells; prison & police officers & their families and Use of SMS platform for self-screening of plantation and industry workers.

### Mombasa

Northstar Alliance; Expanding TB screening services for truck drivers and corridor communities, Partner for HIV free generation; finding people with TB among matatu crews and associates with linkage to health facilities.

### Homa Bay

Heroes Oasis Counselling Centre; Strengthening TB screening in Prisons through enhanced use of champions and use of USSD platform for self-screening in the community.

### Kajiado

NAIS Healthcare Ltd; integrating private sector and incentives to increase TB screening in informal settlements.

From July 2019 to March 2020, 247,836 persons were screened for TB through these initiatives. 41,510 were presumptive, 9,722 were tested for TB of which 391 people were diagnosed with TB and 366 put on treatment.



# Championing the Delivery of TB Services at Community-Level



Amref's John Mungai engaging a Chemist in Mombasa. Right - One of the 8 riders engaged by Amref to support private providers in the transportation of TB samples for testing / Photos Amref Kenya.



By AMREF Health Africa in Kenya

The National TB Prevalence Survey (2016) showed that close to 50% of Kenya's Tuberculosis (TB) cases go undetected and untreated. Health facilities in the private sector contribute significantly to the missing TB cases since 42% of patients with TB symptoms first seek care from private providers.

The high number of missing people with TB remains a great challenge to ending TB in Kenya as transmission continues in the community unabated. If not treated, one person with TB can infect 10 to 15 people in a year. Without proper treatment, up to two-thirds of people with TB will die. Many in the community with non-severe TB symptoms do not seek medical care or opt to purchase over the counter prescriptions. This makes it necessary to strengthen TB diagnosis where they first seek these services e.g. chemists and pharmacies.

To address this, AMREF Health Africa through the Global Fund TB project in partnership with the Division of National Tuberculosis, Leprosy and Lung Disease Program (DNTLD-Program) and Population Services Kenya (PS Kenya), is on a mission to find the missing people with TB through the Public-Private Mix (PPM) approach.

***The high number of missing people with TB remains a great challenge to ending TB in Kenya as transmission continues in the community unabated. If not treated, one person with TB can infect 10 to 15 people in a year.***

Targeting private health facilities not previously offering TB services, the interventions are aimed at strengthening the contributions of small private clinics, chemists/pharmacies, parastatal/institution clinics, company clinics, mission dispensaries, nursing homes and stand-alone laboratories in finding people with TB.

The PPM initiative is engaging both formal and informal private health providers to carry out TB screening to all patients visiting the facilities, testing all those presumed to have TB and ensuring the referral of those found to have TB. The interventions being implemented include training of health care workers on TB screening, diagnosis and treatment, establishments of a linkage system between private facilities, diagnostic sites and treatment sites, provision of sample collection and transport mechanisms, on the job training and ongoing support supervision.

These interventions are being implemented in eight selected urban settings: Garissa, Ngong', Thika, Kisumu, Changamwe and Jomvu in Mombasa, Embakasi East and West in Nairobi, Naivasha and Kilifi.

The recommended first test for TB in Kenya is the GeneXpert, a highly sensitive molecular diagnostic tool. All facilities engaged on the PPM initiative are linked to a facility with a GeneXpert machine and provided with sample collection equipment. A motorcycle rider has also been engaged in each urban centre to help transport samples to the central facility for testing.

Over 300 private facilities have been engaged and supported to provide TB services. By March 2020, a total of 40,248 people had been screened for TB in the engaged facilities, 3,276 were presumptive, 2,523 tested and 133 people diagnosed with TB.



# Health Facilities Assessed for Pay for Performance TB Program



Dr Stephen Macharia - DNTLD Technical Advisor, Amref Health Africa Kenya and Turkana County TB Coordination team during the TA

## By Turkana County Government, MoH Press

The Division of the National Tuberculosis, Leprosy and Lung Diseases Program together with Amref Health Kenya had a successful Technical Assistance (TA) to selected facilities that are implementing the Pay for Performance (P4P) initiative to find missing people with TB in Turkana County.

The two-day TA which kicked off on Monday, February 10<sup>th</sup>, 2020 with a visit to the County Director for Preventive and Promotive Health was concluded the following day after visiting three facilities in both Turkana Central and West sub-counties.

Pay for Performance program is an internationally tried and tested innovative strategy with a rich history of boosting identification of people with TB that would otherwise have been missed using the normal approaches.

According to the team leader of the group Dr Macharia, "the TA involves visiting enrolled facilities that offer TB services, review the performance based on TB indicators, identify gaps in finding missing people with TB, discuss with staff on how to cover the gap and come up with a team to follow up on Active Case Finding strategy in the health facility. This translates to performance which is compensated based on the achievement."

"The method works through the Active Case Finding approach where performance is compared against the number reached over a similar period of the preceding year. The extra number of cases denoting increase is incentivised accordingly" said Dr Macharia.

Dr Macharia went on to explain that "the basis for implementing pay for performance was informed by the 2016 national TB prevalence survey which indicated that the biggest problem in TB management in the country was the high number of missed cases and the equally high rate of loss to follow up."

In Turkana County, nine facilities have been enrolled for the pay for performance initiative as a way to boost case identification and solve the problem of lost follow up. According to Ms Saida Kassim, a member of the TA team who also represents Amref Health Kenya under the Strategic Initiatives Technical Assistance, the assessment was also undertaken in Siaya and Homa Bay counties (Nyanza region) as well as Kiambu County (central region).

Ms Saida Kassim also confirmed that the team had interacted with health facility staff and TB data from Kerio Health Centre, Kakuma Mission Hospital and Lodwar County Referral Hospital with the help of Dr Okemwa and Chebii Yano who serve Turkana as county and sub-county TB coordinators respectively

"The assessment comes at a time when the program is witnessing an increase in the number of persons completing TB drug regimen and getting cured from the disease," said Dr Okemwa

Dr Okemwa also said that Turkana has increased the number of TB treatment facilities in the county from less than 10 in 2013 to the current 58 facilities. The increase has also been accompanied by improved staffing levels and supply of essential medical equipment to meet the increasing demands of TB services.

While speaking during the assessment, Mr Chebii the sub-county TB coordinators for Turkana West said that Pay for Performance approach assessment has been an eye-opener on how to integrate quality in the entire process of TB management.

Chebii added that Turkana West sub-county has followed in the footsteps of other sub-counties in providing for staff testing as a method of reducing exposure to the disease. Chebii pointed out that the placement of Gene expert machine at IRC Hospital in Kakuma was for reaching the highest possible number of cases in both the host and refugee community.

## Pay for Performance (P4P)

By Amref Health Africa in Kenya

This initiative optimizes TB services at health facilities to increase the number of people notified with TB and improve the quality of TB services in 13 target counties. Engaged facilities and counties are paid based on their TB notification rate and facility treatment success rate of 85% and above, additional TB cases notified in a quarter compared to the same quarter in the previous year and the quality of services offered.

In March 2020, two counties that had submitted bank details and claims for July – September 2019 received their first payment. Nairobi County received KES 1,178,000 for 21 qualifying health facilities, with an overall increase of 56 patients across the 21 facilities. Homa Bay County qualified for KES 728,000 for 10 health facilities that together registered an overall increment of 181 TB patients. Health facilities retained 90% of their earnings to go towards the improvement of TB service delivery and staff motivation while sub-counties and the county received 5% each.

## Technical Assistance for the Strategic Initiatives

By Amref Health Africa in Kenya

In February 2020, a technical assistance mission to 15 counties implementing the three strategic initiatives was conducted to gauge the progress and to identify gaps and opportunities for improvement.

### Key Findings

- KIC-TB – It was established that there is a need for the DNTLD-P to communicate to all counties implementing the strategic initiatives to strengthen ownership and support implementation and reporting.
- PPM - Private provider networks had been created to support implementation and it was encouraging to find out that they were functional.
- P4P - Facilities were advised to make use of the ACF work plans and have regular meetings to discuss how they will conduct ACF activities.

The counties were advised to continue coordinating with stakeholders on the ground for the success of the strategic initiatives.

## Targeted TB Screening Outreaches

By Amref Health Africa in Kenya

Since 2018 to date, Amref in partnership with the TB Program has been carrying targeted outreaches for people in congregate settings i.e. informal settlements, matatu sector, factory workers, schools and prisons. From this initiative, 31,451 people have been screened for TB; 7,770 were presumptive and 147 were confirmed to have TB and put on treatment.



A chest X-ray screening during an outreach in Kakamega County.

## Community Systems Strengthening End Term Evaluation

By Amref Health Africa in Kenya

Amref was funded by Global Fund to conduct the end term evaluation of Community Systems Strengthening (CSS) in Kwale, Vihiga and Homa Bay counties. The assessment was done in collaboration with the CSS Technical Working group. The purpose was to assess the outcome of implementing integrated HIV, TB and Malaria services at the community level through community health strategy approach. Fieldwork data collection was carried out over two weeks (10<sup>th</sup> – 20<sup>th</sup> March 2020) in three counties.

Findings showed improvement in health-seeking behaviour at the community level; creation of new community health units and making those 100% operational over two years.

Based on the best practices and lessons learnt, the integration of Malaria, TB and HIV/AIDS services may be scaled up to other sub-counties within the pilot counties.



# Status of National Tuberculosis Epidemic and Response

Quarter One 2020

## Tuberculosis Notification



**21,676**

Number of TB cases  
Notified TB infection  
guidelines



**72%**

Treatment success  
rate (All forms)



**15%**

Proportions notified  
from Private Sector



**11%**

Proportions referred by  
CHVs



**79%**

Previously treated  
(DSTB) with DST results



**96%**

Proportion of DSTB with  
Known HIV status



**24%**

Co infection rate  
(TB/HIV)



**91%**

Proportions on ART

## DR TB Notification

**MDR**

**40**

**PDR**

**4**

**RR**

**157**

**286**

**Monoresistant  
TB**

**Pre XDR**

**Grand  
Total**

## Leprosy

**22**

Number of Leprosy  
Cases reported



## TB prevention

**2,026**

Children <5 initiated  
on IPT (contacts  
of bacteriologically  
confirmed cases)



## Development of an Integrated TB, Leprosy and Lung Health guidelines underway

By Diana Kagwiria | TB ARC II

USAID funded Tuberculosis Accelerated Response and Care II (TB ARC II) activity in collaboration with the Division of National Tuberculosis, Leprosy and Lung Disease Program (DNTLD-P), patient representatives, universities, medical officers, and TB implementing partners is developing an integrated TB, Leprosy and Lung health guidelines, tools and job aids.

Speaking during the activity's first workshop held at White Rhino, Nyeri, January 14-17, 2020, DNTLD-Program Head, Dr Elizabeth Onyango noted that upgraded guidelines, tools and job aids will go a long way in putting together patient information so that it is easier for health care workers to handle TB, Leprosy and Lung health patients wholesomely instead of referring to many documents.

"The documents will harmonize the easy of patients to be able to be managed well and get good quality of care. The updated and current materials will be a reference point for health care workers as well as for the population at large in TB, Leprosy and Lung Health awareness creation," Dr Elizabeth noted.

The integrated TB, Leprosy and Lung health guideline, tools and job aids are aimed at capturing the strategies, approaches, and steps at the point of service delivery and household level.

The guideline, tools and aids which are awaiting printing and dissemination capture the three pillars of Kenya's National Strategic Plan on TB, Leprosy and Lung Health 2019-2023: patient-centred care, bold policies and supportive systems, and research and innovation in ending TB, Leprosy and Lung Diseases in Kenya. The key target audiences are health care workers, implementing partners, scholars and the Kenyan population at large.

Kenya is listed among the high TB burden countries in the world. Lack of integrated TB Leprosy and Lung health guidelines, tools and job aids has created delays in finding missing cases, diagnosis and treatment, and resulted in poor compliance and treatment outcomes



Dr Elizabeth Onyango, Head DNTLD-Program.



Dr Philip Owiti, USAID technical advisor making a presentation during the workshop.

## 2020 World TB Day Commemoration

On March 24, 2020, Kenya joined the rest of the world in commemorating World TB Day, a day marked every year to raise TB awareness. Unlike in the past years, this day saw a break from the traditional norm of people gathering in an open field to a digitized form of commemoration due to ban of gatherings by the Kenyan government to curb the spread of Coronavirus disease (COVID-19).

In a quick rejoinder and a well thought of response not to miss out on the day's commemoration which entails raising TB awareness and the profile of TB in Kenya despite the ban, the National TB Program and partners among them TB ARC II, Amref Health Africa and Stop TB Kenya carried out Radio and TV interviews, and a social media campaign reaching millions of target audience.

This year's global theme was; *It's Time to End*. Kenya domesticated it to; *It's Time to End TB in Kenya* with a call for action to find and treat all persons with TB.

World TB Day is commemorated every year, March 24. The day commemorates Dr Robert Koch announcement of his discovery on the cause of Tuberculosis - the *TB bacillus* (*Mycobacterium tuberculosis*). At the time of Koch's announcement (1882), TB was responsible for the death of one out of every seven people in Europe and America. Koch's discovery opened the way for diagnosing, treating and curing TB.

Today, World TB Day is designed to build public awareness that tuberculosis still remains an epidemic in much of the world, causing the death of nearly 1.5 million people each year, mostly in developing countries.

## TB Algorithm for Schools Launched

The Nairobi City County in collaboration with National TB Program, Ministry of Education and TB implementing partners among them, the USAID funded TB ARC II activity has launched a TB algorithm for schools in Nairobi. This was during a pre-world TB day commemoration event held at Nairobi Primary school March 13, 2020, before the government ban of gatherings due to COVID-19.

The easy-to-use algorithm will help teachers, school staff, and the pupils determine if TB symptoms are present and, if so, identify steps to be taken in seeking TB screening, diagnosis and treatment.

Nairobi City County remains among the top five TB high burden counties in Kenya. The County has observed a rise in TB cases among school-aged children over the past three years, reaching approximately 25% of the TB burden for the county. The launched algorithm is aimed at reducing this burden.

On March 2, 2020, Centre for Health Solutions – Kenya (CHS) through its USAID funded Tuberculosis Accelerated Response and Care II activity (TB ARC II) in collaboration with the National Tuberculosis Leprosy and Lung Disease Program, and NASCOP brought together Kenyan TB/HIV partners for a one-day meeting to discuss TB/HIV support progress for PEPFAR implementing partners.

The quarterly meeting also provided a forum to discuss key areas of focus and cascade policy guidance and strategic interventions from national level.

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Through TB ARC II activity, CHS has been mandated by USAID to bring together and coordinate the TB/HIV implementing partners and stakeholders in order to identify key areas of focus for the TB program. This is aimed at strengthening TB/HIV implementing partners to scale up and optimize their support within the counties towards addressing the key implementation challenges at the county level.

Since January 2016, coordination efforts through TB ARC and TB ARC II activities, has seen an increase in the number of people living with HIV being initiated on Isoniazid Preventive Therapy and incidences being reported in the DHIS system. This engagement of the TB/HIV implementing partners has also seen the strengthening of the TB sample networking systems at the county level.

Additionally, there has been an improvement on the level of effort being put in place to improve the quality of care of patients. TB patients are now receiving a lot of support at the county level especially those who are co-infected with HIV.

## Capacity Building of Counties on Data Use for Decision Making

Centre for Health Solutions – Kenya through the USAID Kenya funded Tuberculosis Accelerated Response and Care II (TB ARC II) activity in collaboration with the Division of National TB Program, and in partnership with the International Union Against Tuberculosis and Lung Disease (The UNION) conducted a one week training on the *Principles of TB and Prevention: Translating Knowledge into Action* to 27 TB county and sub county coordinators from Migori, Vihiga, Narok and Trans Nzoia counties. The training took place from March 8 to March 14, 2020 at Kamel Park Hotel, Kisii County, Kenya.

The training was aimed at familiarizing the participants with TB epidemiology both globally and in Kenya, the roles and responsibilities of the county and sub county TB coordinators with focus on data driven technical assistance, strengthening recording and reporting in TB control, and how data can be used to strengthen TB patient and program performance at all levels of health services as well as learn the basics of data-driven support supervision and technical assistance.

This was the 11<sup>th</sup> training of The UNION's, Tuberculosis Care and Prevention training in Kenya. The past trainings which have involved County and Sub County Coordinators from the other counties have been sustainable and cost efficient, with the engagement of local trainers drawn from the counties.

County and sub-county TB coordinators are key in the use of subnational data for local planning and programming at the county level. They ensure quality of care for patients, act as the link between health care workers, patients and national level, visit facilities monthly, and use the TIBU surveillance system for supervision and data collection.

TB ARC II activity is assisting the National TB program reduce this burden by partnering with The Union, an international scientific organisation, and leader in the field of TB since 1920. The Union has developed a tailor-made, innovative training based on the International 'Principles in TB Care and Prevention: Translating Knowledge to Action' course which has run for over 20 years. The training targets county TB staff and was informed by evidence from the TB prevalence survey of 2017 and capacity gaps of TB staff.

## DNTLD-P Quarterly summary report

Date	Activity
8 <sup>th</sup> to 10 <sup>th</sup> , 28 <sup>th</sup> – 31 <sup>st</sup> January 2020	CMLCs TOT Training on AFB Microscopy from selected counties
9 <sup>th</sup> Jan 2020	PMDT meeting to discuss WHO rapid communication
14 <sup>th</sup> to 17 <sup>th</sup> Jan, 10 <sup>th</sup> to 14 <sup>th</sup> Feb, 2 <sup>nd</sup> – 6 <sup>th</sup> March. 2020	Workshop to develop intergraded program guideline
21 <sup>st</sup> – 25 <sup>th</sup> Jan, 28 <sup>th</sup> – 31 <sup>st</sup> Jan, 4 <sup>th</sup> to 7 <sup>th</sup> February 2020	EQA system training- Development, testing and dissemination of the EQA Information System to the SCMLT & CMLT for the various counties as well as establish and enhance online reporting for AFB EQA and GeneXpert data
21 <sup>st</sup> to 24 <sup>th</sup> 27 <sup>th</sup> to 31 <sup>st</sup> January 2020	Mentorship to TB reach Hubs and sensitization of nearly spokes; St Mary's Kiserian Mission Hospital, Shalom Community Hospital, Plains view nursing home, Algadhir medical center in Kajiado, Machakos, Kiambu and Nakuru counties.
27 <sup>th</sup> January 2020	Commodity security meeting
3 <sup>rd</sup> February 2020	IMPALA meeting on Post lung Disease Disorder
3 <sup>rd</sup> to 7 <sup>th</sup> February 2020	The National Treasury Global Fund Quarterly Review Meeting on the progress of GF funding
3 <sup>rd</sup> to 6 <sup>th</sup> February 2020	TA to selected county
3 <sup>rd</sup> – 10 <sup>th</sup> February 2020	Barriers to accessing TB services study supervision (To selected Counties)
29 <sup>th</sup> – 31 <sup>st</sup> January 2020 4 <sup>th</sup> – 7 <sup>th</sup> February 2020	TIBU phase 3B training for Embu, Kiambu and Kirinyaga counties on updated modules within the system. These modules include; Updates to the TB Register, Updates to the DR TB Register, IPT Register Review, Contact Register, Asthma Module, Active Case Finding Module, Pharmacovigilance Module, Communication Module, TIBU DHIS Integration, Community TB Module, Advocacy Module, Updates on CTLC supervision Checklist and general claims. Over 130 SCTLCs were trained on use of new modules in phase 3B
7 <sup>th</sup> February 2020	Pediatric TWG - Appropriate recommendations to increase TB pediatric cases.
10 <sup>th</sup> - 14 <sup>th</sup> February 2020	Strategic Initiatives Technical Assistant mission to counties - Mentorship of the HCWs at the sites implementing the initiatives
17 <sup>th</sup> - 21 <sup>st</sup> February 2020	Pre PRM meeting - Review of the county presentations and giving feedback to the counties
17 <sup>th</sup> to 21 <sup>st</sup> February 2020	Routine lab surveillance
24 <sup>th</sup> - 28 <sup>th</sup> February 2020	PRM meeting. Review of county performance with the county officers and agreed on targets for the year
2 <sup>nd</sup> March	TB/ HIV stakeholders meeting



**CaP TB project has introduced innovative models of care that show promising results towards increase in screening, diagnosis and treatment of childhood TB in Turkana County**

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PHOTO: COURTESY





# Catalyzing Pediatric TB:

## Milestones made in Turkana County in the fight against TB

By Mbetera Felix | DNTLD and  
Dr Phelix Mboya | EGPAF

Worldwide, Tuberculosis (TB) continues to be one of the leading causes of death. In 2018 alone, nearly 1.5 million individuals lost their lives to TB, 17% of whom were children (*Global TB report 2018*). Children infected with the disease are more likely to become sick and develop more severe forms of the ailment. According to the World Health Organization (WHO), diagnosing TB in children is more difficult than in adults. This is because of the paucibacillary nature of the disease in children and the challenges in obtaining adequate samples.

Elizabeth Glaser Pediatric Aids Foundation (EGPAF) in partnership with the Division of National TB and Leprosy and Lung Disease Program (DNTLD-P) and the County Governments of Turkana and Homabay, with support from Unitaid is implementing the Catalyzing Pediatric (CaP) TB Project. This is an intervention focused on reducing morbidity and mortality associated with pediatric TB. The project which is being implemented in 15 pilot sites, 12 in Homabay and three in Turkana has been in running since August 2018.

CaP TB project has introduced innovative models of care that show promising results towards increase in screening, diagnosis and treatment of childhood TB. Turkana has shown great improvements since the project was initiated. According to DNTLD-P 2018 report, it is among the 10 high burden TB counties in Kenya with a high case-load of TB in children, at 24%, and a HIV co-infection rate at 17%.

On March 5<sup>th</sup> 2020, CaP TB project implementors had a successful dissemination meeting in Turkana County at the Cradle Hotel in Lodwar. The meeting showcased the



Dr Abok - Chief Officer, Turkana, Dr Phelix Mboya - Country Implementation Manager, Cap TB, Gladys Mueni - Communications Manager EGPAF, Dr Elizabeth Onyango, Head DNTLD-P, Dr Justine Odionyi - Associate Director Programs - EGPAF, Jane Ajele - CEC Turkana, Joseph Ekuom - Lab TA Turkana, and Rhoda Igweta, Associate Director, Public Policy and Advocacy.

innovations and the overall achievements of the project in the county as at December 2019. Commitments and actions were also mobilized from all stakeholders to address the identified challenges with the aim of making the project a success. The meeting was also used as an opportunity to rally the county political leadership and policymakers' support towards scaling up the innovations. Some of the key stakeholders who attended the meeting included Dr Elizabeth Onyango, head DNTLD-P, Dr Stephen Macharia, senior Technical Advisor TB Program, County Assembly members, County Health Leadership, implementing partners and EGPAF.

The key priority areas under the project include Intensifying Case Finding, scaling up of advance sample collection for diagnosis, enhancing TB Prevention and Treatment as well as Communications and Advocacy.

### Intensified Case Finding

Screening has played a big role to the success of Active Case Finding. The county team noted that there were many missed opportunities in identifying,

preventing and treating TB in children and adults partly because TB services are often siloed. In children for example, the non-specific clinical presentation of TB makes it difficult to diagnose. As a result, healthcare workers (HCWs) were capacitated to provide TB screening, collect samples and increase their suspicion index especially outside the TB clinic.

Different entry points for systematic TB screening for children at the facilities were also integrated to improve case finding for pediatric TB. The points included HIV clinic, Out-patient department (OPD), In-patient department (IPD), Maternal Child Health (MCH) and nutrition clinic. In addition to strengthening facility-based screening activities, CaP TB also made use of opportunities to test more children for TB through targeted departmental and community screening and contact investigation. At HIV entry points and on contact investigation, TB screening activities were considered to be essential for the pediatric, a high-risk population in TB management.

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In 2019, CaP TB project managed to successfully introduce universal screening of children in all service delivery points within the health facilities, train and assign cough monitors as first screeners in every service delivery point. Presumptive cases were hence referred to clinicians for further screening and testing. In addition, screening questionnaires through the development of the Intensified Case Finding (ICF) Form were standardized. This ensured that child assessment of specific signs and symptoms was done and the presumptive tracked and followed through the diagnostic cascade. Treatment initiation of all individuals with presumptive and active TB was done through the use of CaP TB pediatric optimization form (carbonated form).

## **Diagnosis**

Under diagnosis, HCWs were trained on sample collection, "Gastric Lavage" in particular, and on how to increase their suspicion index especially outside the TB clinic. Equipment and accessories to support implementation of sample collection procedures for children under five years and those unable to produce sputum were procured with the aim of scaling up diagnostic testing through GeneXpert and increase case detection and treatment initiation.

The project established a teleradiology service where radiologists with proven expertise in paediatric TB would read and interpret Chest X-Ray remotely and send results within 2 hours. A picture archival communication (PAC) system was also installed in the X-ray machines to transmit x-rays for reading and HCWs were trained on x-ray use to increase clinical diagnosis of TB.

There was an increased impact on patients not having to go to Xpert sites due to support for sample transportation where only their specimens were submitted to the hubs. In addition, a laboratory technical advisor was contracted to coordinate the sample networking services. This was compounded with the capacity building of HCWs on advance sample collection through regular trainings and support supervision.

## **Enhance TB Prevention**

With regards to enhancing TB prevention, it is important that steps are taken to prevent children that are exposed to TB from developing active TB. Only 35% of children with TB are diagnosed and notified in Kenya leaving a significant percentage undiagnosed. Children who are in close contact with adults with active TB disease are at high risk of getting infected and developing active TB because of their low immune systems.

The CaP project trained 151 HCWs from different departments to assist with TB screening, diagnosis and treatment thus leading to effective preventative treatment. The project also rolled out the WHO recommended 3RH regimen for TB preventive treatment in pediatric population. At community level, 73 community health volunteers (CHVs) were trained on TB contact management and four Public Health Officers (PHOs) and four Community Health Extension Workers (CHEWs) were capacitated to coordinate contact tracing. This is in addition to the facilitation of Psychosocial Support Groups (PSSGs) for Index Clients and children on TB prevention therapy (TPT) with 10 preventive and 15 index case PSSG sessions conducted.

## **TB Treatment**

Deaths, malnutrition and ill health among children who develop TB can be prevented through prompt and accurate provision of treatment further preventing transmission of infection in the community. CaP TB project made available tolerable, palatable, child friendly, effective and affordable treatment options in fixed doses with greater ease of use and reduced risk of drug resistance. HCWs were supported to administer fixed-dose combination (FDC) and carryout facility-based forecasting and quantification. This helped in monitoring stocks to prevent pediatric TB FDC stock outs. Also, the project supported patient monitoring on treatment adherence to all confirmed TB positive children aimed at achieving cure at the end of treatment.

## **Communications and Advocacy**

It is prudent to sustain the catalytic gains that emerge from CaP TB project in line with national policy interventions around the 2019-2023 National Strategic Plan. This will help influence change at both the National and county levels. Participation in joint MOH-DNTLD-P performance review and county pediatric TB TWG meetings resulted in mentorship, capacity building and joint supportive supervision. Increased awareness was also as a result of increased local radio talk shows on childhood TB, health talks and screening activities that targeted the community at large. Key gaps were however noted. Some of the CaP TB project advocacy call to action to the National and county government include:

1. Incorporating CaP TB project Innovative elements into key policy and strategy documents like the national pediatric TB strategic plan, annual TB plan, policies and guidelines. This includes Contact Investigation at community level, advance sample collection for under-fives and those unable to produce sample including induced sputum, nasopharyngeal aspiration, gastric aspiration, fine needle aspiration, engagement of lay workers like cough monitors as front-line screeners and waiving X-ray cost for children under 14 years to support clinical diagnosis of TB.
2. Facilitating widespread availability of new pediatric TB medicines and diagnostics for commodity security. This should be through procuring TB Drugs particularly new dispersible single tablet – ethambutol and isoniazid, requesting for continuous supply of Gene Xpert cartridges (Xpert MTB/RIF, and Xpert Ultra once rolled out) as well as strengthening of forecasting and ordering of commodities by the County Pharmacist.
3. Increase funding and support from the DNTLD-P for priority pediatric TB interventions earmarked in the Global Fund concept.
4. Capacity building of HCWs through training to identify, diagnose and treat pediatric TB.
5. Transition and maintenance of diagnostic equipment (GeneXpert machine, Nebulizer and induction machine) donated by CaP TB to county government.
6. Strengthening of sample networking system
7. Scaling up shorter regimen (3RH and 3HP for older children able to swallow) as per the revised Kenya latent TB infection guidelines.



## Summary of Lessons Learned

Lessons Learned	Results
<b>Screening</b>	
Introduction of systematic TB screening in all child health services supports early case identification, decreasing the risk that children will only be identified with TB once the disease is in late stage and has developed into more severe form. In addition, it increases pediatric TB case identification	<ul style="list-style-type: none"> <li>Over 77,000 children have been screened the key SDP during the project period.</li> </ul> <p><b>Increase in:</b></p> <ul style="list-style-type: none"> <li>Tracking presumptive cases from 732 patients by 108% to 1,408 patients.</li> <li>Testing with Gene Xpert from 338 patients by 121% to 748 patients.</li> <li>Diagnosis of children with TB from 214 by 21% to 259 patients.</li> <li>Initiation on TB treatment from 186 patients by 28% to 258 patients.</li> </ul>
Strengthening use of presumptive TB register help in close follow on of all cases until confirmed with active TB and treatment initiation	
The use of the ICF screening tool in the outpatient and in-patient departments improves the quality of TB screening and supports the case identification process	
<b>Diagnosis</b>	
Training of HCWs on management of pediatric TB is critical to improve case detection and case management	<ul style="list-style-type: none"> <li>Of the total 217 children identified with pulmonary TB, 76% were aged 0-4 years while 24% were aged 5-14 years.</li> </ul>
Facility based training for HCWs on pediatric TB management is feasible and has a higher impact because it reaches the majority of HCWs in the facilities	<ul style="list-style-type: none"> <li>Of the total 42 children identified with extra pulmonary TB, 52% were aged 0-4 years and 48% were aged 5-14 years.</li> </ul>
Use of clinical diagnosis algorithm and chest X-ray improves TB case identification	<ul style="list-style-type: none"> <li>Increase in Gene Xpert testing from 45% at baseline to 53% during implementation.</li> <li>This has demonstrated increased ratio of patients who had their test done on Xpert</li> </ul>
Implementation of sample collection procedures and access to Xpert testing improves pediatric TB case detection	<ul style="list-style-type: none"> <li>44 difficult chest x-rays were transmitted to a radiologist with 5 confirmed with active TB and put on treatment.</li> </ul>
Alternative sputum collection methods like Gastric aspiration increase access to GeneXpert testing among the children	<ul style="list-style-type: none"> <li>102 gastric aspiration sample collected, 26(25%) confirmed with TB and 100% initiated on treatment.</li> </ul>

Lessons Learned	Results
<b>Prevention</b>	
Having fixed dose combinations helps with treatment adherence and all clients eligible for 3RH have been enrolled on 3RH and are on the journey of treatment.	<ul style="list-style-type: none"> <li>319 children under 5 years were successfully identified through contact tracing</li> <li>Of these 282, 88% children were identified through index contact tracing have been put on TPT.</li> </ul>
Use of the Child Contact Management Register is critical in identification of eligible children for TPT and prompt linkage to TB diagnostic work up for those children who are identified as symptomatic.	<ul style="list-style-type: none"> <li>40 children enrolled in 3RH as form of TPT shorter regimen</li> <li>100% (n6) of children diagnosed with TB from contact tracing were started on TB treatment.</li> </ul>
Facility-level forecasting and quantification is critical to prevent pediatric FDC stock-outs.	<ul style="list-style-type: none"> <li>280 index patients and 282 children on TPT were reached with messages towards improving pediatric TB and TPT outcomes.</li> </ul>
Use of facility-based checklist during support supervision helps in identification of challenging issues and follow up.	
Monitoring adherence to treatment during intensive and continuation phase improves treatment outcomes.	
<b>Treatment</b>	
Use of TB4 register and TB5 card for patient enrolment and monitoring enhance favorable treatment out comes	<ul style="list-style-type: none"> <li>259 children diagnosed with active TB</li> <li>257 children put on DST treatment</li> </ul>
Shorter regiment FDC for treatment increase treatment adherence with favorable outcomes	<ul style="list-style-type: none"> <li>1 started on MDR treatment</li> <li>1 Died before treatment initiation</li> </ul>





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