Ministry of Health
National Tuberculosis, Leprosy and Lung Disease Program

TiBa

A magazine for DNTLD-P

ISSUE 10 / April - June 2022

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There is hope! TB is treatable and curable

Personal Experiences

My Journey fighting TB

REPUBLIC OF KENYA

MINISTRY OF HEALTH

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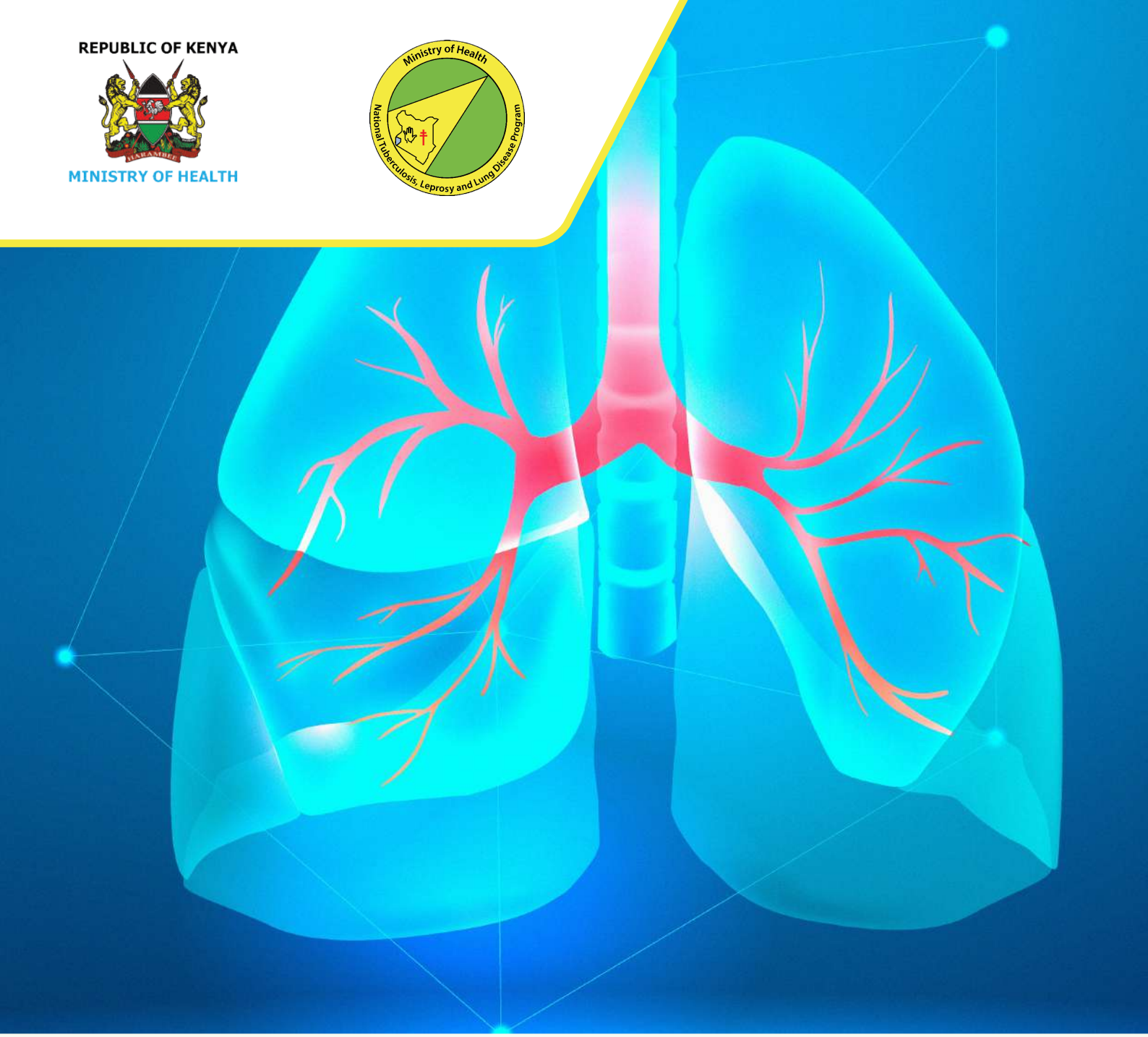
National Tuberculosis, Leprosy and Lung Disease Program



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The editor welcomes articles from readers and stakeholders

Word from...

Dr. Patrick Amoth,
Ag. Director General for Health

Dr. Jacqueline Kisia
Ag. Head, DNTLD-P

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Word from the Ag. Director General for Health

COVID-19 pandemic severely disrupted access to essential TB services, and its impact reversed gains made in Kenya and globally. The launch of the introduction of New Tuberculosis Tools Project (iNTP) came at an opportune time.

It is prudent we invest in new tools and innovations and identify tactical and impactful strategies for TB response in our country. We can only overcome the myriads of challenges in TB management if we work together and embrace context-specific progressive and innovative strategies.

Significant investments over the past two decades have yielded remarkable progress in the fight against TB. Much of that has come through domestic resource mobilization and traditional development assistance, however, the health financing landscape is shifting and there is need for more investment.

Fast and accurate diagnostic tests do exist. They are, however, not widely accessible to our clients. There is need to make rapid point-of-care diagnostic tests available, and affordable. These testing approaches will help reduce transmission, misdiagnosis, and bad outcomes including loss of life.

Without a diagnosis, or with a delayed diagnosis, TB can kill. The launch of iNTP offers us a new opportunity to expand our scope and reach the unreached. It will enhance our efforts for rapid and effective case detection and treatment of our clients, particularly in resource-constrained settings.

Together with our partners, we are advancing test-and-treat technologies that will let our clients know on the spot if they are infected with TB or Drug-resistant TB so that they can be initiated on treatment immediately.

Our model of partnership and collaboration particularly with WHO, Global Fund, USAID, and Stop TB partnership is promising. I wish to thank you for your dedication and support over the years. iNTP, without a doubt, will improve TB diagnostics and care, and strengthen active TB case detection and overall TB surveillance in our country.

Dr. Patrick Amoth, EBS
Ag. Director General for Health

Word from the Ag. Head of Division of National Tuberculosis Leprosy and Lung Disease Program

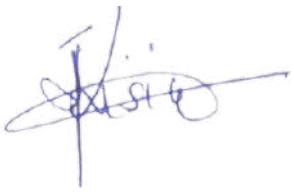
The 2018 UN High-Level Meeting on TB resulted in countries committing to ambitious targets to be reached by 2022 including treatment of **40 million** people with TB, including **3.5 million** children, treatment of **1.5 million** people with drug-resistant TB, and treatment of **30 million** people with latent TB infection. These targets can only be achieved with the rapid introduction of new innovative tools. As a Program, in partnership with other stakeholders, we are pleased to have launched innovative tools and products that will be used in the fight against TB and the eventual attainment of our commitment to ending TB in Kenya by 2030.

The implementation of the National Strategic Plan whose vision is geared toward a Kenya free from TB and Leprosy and a reduced burden of Lung Disease highlights our pledge to diagnose and cure at least **597,000** people with TB by the year 2023, including **55,000** children, **542,000** adults and **4,500** people with Multiple Drug Resistant TB in addition to providing TB Preventive Therapy to all Kenyans at risk.

The adoption of WHO rapid diagnostic intervention, GeneXpert, as the primary test and acquisition of molecular True Nat equipment in order to strengthen TB diagnosis and Drug-Resistant TB surveillance, especially for rifampicin and Isoniazid attests to our commitments.

As we roll out digital patient adherence technology and Lightweight portable Digital chest X-ray equipment in selected counties, we call upon the county governments to allocate more resources to TB control and plan for the inclusion of these tools in our annual work plans for sustainability.

As a country, we look forward to working closely with all our partners on this initiative to ensure that these products reach the communities in need and to help identify resources that would ensure continuous access to these tools.



Dr. Jacqueline Kisia

Ag. Head, National TB Program

Launch of New Tools Project : Optimizing gains towards the End TB strategy

From left, Dr Andrew Mulwa, Director for Health Services, Dr Jacqueline Kisia, Ag. Head, National TB Program, Dr Aman Rashid, Health Chief Administrative Secretary, Heidi O'bra, Director Health, Population and Nutrition, USAID Kenya and Dr. Maurice Maina, TB Team Leader, USAID Kenya and East Africa

By MOH Press Team

The Ministry of Health has declared its intention to transform its approach to ending TB.

On Thursday 7th July, 2022 Health Chief Administrative Secretary (CAS), Dr. Rashid Aman, launched New TB Tools Project (iNTP) for screening, diagnosis, and prevention to accelerate the national response to eliminate TB by 2030.

"These tools also present a great opportunity for us to undertake research as a country in optimizing gains towards the End TB strategy," Dr Aman assured.

The CAS highlighted that Covid-19 Pandemic had a negative impact on the gains that the country had started seeing in 2020 in preventing and controlling the TB scourge.

"It is against this backdrop that we came together with our development partners to fund and embrace innovative technologies and accelerate the achievement of our vision," he noted.

Under the New Tools Project funded by the United States Agency for International Development (USAID), Kenya has benefitted through the following tools for TB screening, diagnosis and prevention:

- Treatment courses for TB preventative therapy: 3RH regimen to benefit 13,000 persons
- 38 TRUENAT point-of-care nucleic acid amplification test (NAAT) equipment kits and 77,500 reagents for testing for TB and 15,500 for detecting rifampicin resistance
- 8 Lightweight portable digital chest X-ray equipment kits with accompanying software for the computer-aided detection of TB.
- 2 interferon-gamma release assay (IGRA) machines to aid in detection of TB infection.
- Medication sleeves for 5,000 patients with TB as part of digital adherence technology
- Connectivity solution for all TB diagnostic equipment.

Kenya is one of the seven countries in the world benefiting from this support, Dr. Rashid confirmed and said the support will be availed free of charge to all TB patients. The medicines supplied will also be used according to WHO and adopted by Country treatment guidelines.

He emphasised that TB case finding and laboratory diagnosis forms the backbone to quality patient care and disease surveillance and underscored the need to equip health care workers with skills and knowledge to operate, service and interpret patient results for better management of patients.

He also called on all partners to monitor and optimize the use of these tools to help accelerate the achievement of the set indicators and ensure that any TB patient is started on treatment to stop transmission of the disease.

Training of county super-users on Truenat molecular platform for TB diagnosis

Super-users being trained on rapid detection of TB bacteria using the polymerase chain reaction (PCR) technique - Truenat TB test machine.

By Mbetera Felix | DNTLD-P

The National Tuberculosis Program (NTP) in collaboration with Infectious Diseases Detection and Surveillance (IDDS) project of USAID has capacity-built County Truenat superusers and the end-users (Laboratory staff) from all the counties on Truenat molecular testing platform in support of Tuberculosis control in Kenya.

The training was part of the introducing New TB Tools Project (iNTP) which is a collaboration between the Stop TB Partnership and the United States Agency for International Development (USAID) to roll out a package of the latest innovations in diagnostics, treatments and digital health technologies.

The iNTP package of new tools includes Truenat, ultra-portable digital chest X-ray machines with Computer-aided detection software (CAD), Tuberculosis (TB) Preventive Therapy, Digital Adherence Technologies and Latent TB infection testing by using IGRA/Quontiferon tests. The tools are portable equipment that will benefit TB patients as the country strives to find missing cases and end the TB epidemic in line with the declarations made during the 2018 UN High-Level Meeting on TB.

Truenat is a chip-based rapid molecular test for TB that runs on the TrueLab platform. The country has received 38 Truenat assay instruments from USAID which have been distributed to selected health facilities after a successful site assessment.

The machine is designed to be operated in peripheral laboratories to improve access as close to the community as possible. It is battery-powered and uses room-temperature stable reagents. It can generate results for a TB test in one hour and detection of resistance to Rifampicin in one additional hour. The results are dispatched online to the clinicians in form of SMS and Emails using a locally developed electronic reporting platform- (Tibulims) system. This reduces the time taken to initiate a client on treatment.

According to Jeremiah Okari, lead iNTP coordinator at NTP, the equipment is one of the tools being implemented under iNTP, supported by the USAID in collaboration with Stop TB and GDF.

"The main objective for the iNTP is to help scale up the introduction of new WHO-approved TB molecular diagnostic tools," he says. "This will help increase access to molecular diagnostic tools and Tuberculosis Drug Resistance surveillance, and support the rollout of treatment and digital health tools to strengthen TB care in Kenya" he adds.

Dr. Grace Kahenya, the New TB Diagnostics Tools Advisor from IDDS Headquarters noted that the training was instrumental in supporting the country in its quest to further decentralize TB diagnosis. "Cutting-edge molecular innovations like Truenat have demonstrated equivalent performance among molecular TB diagnostic tools," she said.

Josiah Njeru, a diagnostic specialist with IDDS Kenya Country office also noted that the superuser training model worked before in the roll-out of GeneXpert.

"The selection and training of this level of laboratory technologists are key to supporting county diagnostic networks and ensuring strong collaboration with the National Government in the smooth implementation of diagnostic policies and guidelines," he said.

IDDS is a USAID-funded project under the Global Health Security Agenda to support developing nations to strengthen detection and surveillance of priority infectious diseases like Tuberculosis, and antimicrobial resistance as well as support the roll-out of innovative solutions to strengthen diagnostic networks.

Under iNTP, Kenya project, IDDS will be collaborating with CHS - USAID TB ARC II to provide both technical and logistical assistance to NTP in the phased approach implementation of all identified activities.

Finding missing people with TB in Kenya: Introducing New Tools Project (iNTP)

By Mbetera Felix | DNTLD-P

Kenya has launched the introducing New Tools Project (iNTP), a collaboration between the Stop TB Partnership and the United States Agency for International Development (USAID) to roll out a package of the latest innovations in diagnostics, treatments and digital health technologies. It is aimed to strengthen TB care in high-burden countries. The Project supports countries in reaching 2022 targets for the detection and treatment of TB, drug-resistant TB and TB infection set by the 2018 UN High-Level Meeting on TB.

The iNTP package of new tools includes ultra-portable digital chest X-ray machines with Computer-aided detection software (CAD), portable diagnostic machines, and adherence tools to benefit TB clients, as well as short-course medicines for TB prevention for adults and children. Kenya is one of the countries that is a beneficiary of the iNTP.

The Kenya National Tuberculosis, Leprosy and Lung Disease Program (NTLD-Program) in collaboration with USAID-funded Tuberculosis Accelerated Response and Care (TB ARC II) capacity built 80 county, sub-county and facility health workers from seven counties and prisons on the use of ultra-portable digital Chest X-ray machines and Computer-aided detection software (CAD).

The country has acquired eight new ultra-portable digital Chest X-ray machines with CAD for TB screening and triaging and 38 Truenat machines. This is in an effort to find the missing people with TB comprising of 40% in the country. Technological advancements in digital radiography have brought preventive care to a new level.

One major benefit of the machines is portability hence improving access to TB screening and diagnosis at lower-level health facilities and at the community level. Portable radiology devices are characterized with reduced

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exposure to radiation and cost-effectiveness thus being user-friendly. This patient-centered provision of free services is likely to reduce diagnosis time, reduce the number of tests needed to diagnose a TB patient as well as reduce the catastrophic cost incurred due to diagnosis.

According to Dr. Stephen Macharia, senior technical advisor to NTP, the machines will help patients access services that were hindered by the challenges of availability and cost of chest X-ray.

"The portable X-ray devices have easy mobility and the technologists will be able to move them around quickly," he observes. "The benefits will contribute to an increased quality of client care and save more lives."

The equipment will offer less processing speed and eliminate long wait times for TB clients. It is envisioned that the results will be out within 20 minutes and will be accessed in real-time and sent directly to the clients' physician. Depending on the diagnosis, the initiative will allow immediate diagnosis and the start of treatment.

The training which took place at the Ole Ken Hotel in Nakuru was supported by USAID TB ARC II and brought together County and Sub-County TB and Leprosy Coordinators, County radiographers and radiologists, facility radiographer in-charge and nurse. The seven implementing counties include Nairobi (Baraka Medical Centre and Mathare North Health Centre), Kitui (Mutomo Sub-County), Meru (Mutuati Sub-County), Turkana (Natukubenyo Health Centre), Kisumu (Pandieri Health Centre), Siaya (Madiany Sub-County hospital) and Mombasa (Jomvu Model Health Centre). The choice of facilities was to ensure TB at-risk populations for example persons living with HIV, urban slums population, beach community, prisoners and refugees are offered systematic TB screening using ultra-portable digital chest X-rays and CAD.

A radiographer interacts with the digital chest x-ray machine during the training.

Participants during a practical session of the Introducing New Tools project digital chest x-ray training at Ole Ken, Nakuru.

From left: Dr Ouma Oluga, DIrector of Health Services - NMS, Dr Andrew Mulwa, Director of Medical Services and Dr Rashid Aman, Chief Administrative Secretary -MOH

Dr Nazila Ganatra, Head of Strategic Public Health - Ministry of Health.

Dr Andrew Mulwa, Director for Health Services - Ministry of Health

Heidi O'bra, Director Health, Population and Nutrition - USAID Kenya, Dr Rashid Aman, Chief Administrative Secretary - MoH and Rhoda Pola, focal person TPT - NTP

Evaline Kibuchi, National Coordinator - StopTB Partnership-Kenya

Guests follow the proceedings during the iNTP launch

Dr Paul Wekesa, CEO, Centre for Health Solutions - Kenya

Rhoda Pola - NTP, Lydia Kamau - NTP, Dr Nazila Ganatra - MoH, Dr Abdullahi Omar, Dr Jacquline Kisia - NTP, Dr Rashid Aman - MoH, Dr Andrew Mulwa - MoH, Simion Ndemo - NTP, Catherine Kithinji - NTP and Beatrice Kenaiya - NTRL

Dr Lorraine Mugambi - Nyaboga, Chief of Party, CHS - USAID TB ARC II

Dr Rashid Aman and other guests unveil the symbolic Introducing New Tools Project dummy.

Jeremiah Okari showing Chief guests being how the Truenat machine operates.

Dr Eunice Omesa - WHO and Dr Jacquline Kisia, Ag. Head - NTP

Participants and facilitators during the Introducing New Tools Project - Truenat training at MTC Nakuru.

Participants of the Introducing New Tools Project - Truenat training in a practical session.

Jeremiah Okari - NTP guides Introducing New Tools Project - Truenat training participants through the process of mixing reagents.

Dr Brenda Mungai, Director TB and Lung Health - CHS giving during the Introducing New Tools Project - Digital Chest X-ray training.

Participants of the Introducing New Tools Project - Digital Chest X-Ray training in a practical session.

Facilitators of Introducing New Tools Project - Digital Chest X-Ray.

Ann Munene - AMREF, Dr Boru Okutu - NTP and Dennis Oira - CHS - USAID TB ARC II.

Dennis Oira and Patrick Angala - CHS - USAID TB ARC II.

Geaorge Kamau-NTRL and Aiban Rono - NTP in a dance challange.

Dr Betty Langat - Kericho County, appreciated by Dr Lorraine Mugambi - CHS-USAID TB ARC II.

George Kamau - NTRL and Duncan Barkebo - CHS - USAID TB ARC II lead guests dance.

The best dressed persons in the gala dinner, Moses Kigen, Beatrice kinaya and John Mutisya

Wandia Ikua and Ann Masese both of CHS-USAID TB ARC II.

Dr Eunice Omesa - WHO, Ann Munene - AMREF, Dr Lorraine Mugambi - Nyaboga - CHS-USAID TB ARC II, Dr Carol Asin - formerly of NTP, Dr Maurice Maina - USAID, Michael Macharia - USAID Komesha TB and Evaline Kibuchi - Stop TB Partnership - Kenya..

Lilian Kerubo and Dedan Muriuki - NTP.

Dr Betty Langat - Kericho County, Drusila Nyaboke, Adano Godana - NTP, Dr Lorraine Mugambi, Esther Wanjiru, Flora Nganga and Wandia Rose - CHS -USAID TB ARC II.

Sarah Musambaki - CHS-USAID TB ARC II, Drusila Nyaboke and Adano Godano- NTP.

Ann Masese - CHS-USAID TB ARC II, Ambrose Kimaiyo Health IT and Stella Omulo - CHS-USAID TB ARC II.

Participants engage in competition during the gala dinner.

Bi-Annual Data Review : An Impetus to TB Diagnosis and Control

Best County (Kericho) in GeneXpert performance receiving award at the bi-annual data review meeting at Ole Ken Hotel-Nakuru. From Left: Lilian Ondieki (Superuser), Johana Too (CMLC) and Kennedy Muimi (CHS).

By James Marcomic, Jeremiah Okari, Catherine Githinji – NTLD-P and Kennedy Muimi-USAID TB ARC II

Bi-annual data review workshops play an impetus role in monitoring and improving the National Program's efficiency and effectiveness, which is geared toward strengthening accountability. Regularly scheduled and structured data-driven workshops to review the performance indicators is equally the centre piece that will revitalise holistic tracking of the Program progress toward goals and objectives, planning for future needs, and set robust result-oriented priorities for the program with a mission to end TB as envisioned in the National TB strategic plan 2019-2023 and End TB Strategy 2035.

In cognizant of this fact, NTLD-P has been at the vanguard in espousing this modus operandi which has become the best practice and a paradigm shift in TB diagnosis not only at the county level but also at penumbra facilities. Without any aggrandisement, TB is a laboratory diagnosis; hence, the involvement and commitment of County Medical Laboratory (CMLCs) Coordinators and Superusers in the coordination of TB diagnostic services at the county level will go a long way in potentiating the mission of finding the 44% of missing cases as indicated in the TB annual report of 2021. The bi-annual data review workshops have created a platform where synergistically, CMLCs, County TB and Leprosy Coordinators and Superusers from across the 47 counties meet to share experiences, innovations, best practices, networking, new updates and cross-pollination of ideas in the spirit of, gather all, scatter none, all these geared toward synergising efforts to fight TB. In the same vein, in the purview of TB control, this forum has galvanised an enabling environment for sustainable development, a well-trained human resource, fostered and institutionalised positive staff culture and health system strengthening, which are the ingredients for TB quality of care continuum.

The last bi-annual data review workshop conducted in Nakuru created an atmosphere where the Counties and GeneXpert health facilities were ranked according to set indicators following a successful one-year Genexpert service implementation. In this period, USAID TB ARC II through NTLD-P leveraged the forum by sensitising CMLCs and Superusers on new diagnostic tools, including TrueNat, Genexpert Ultra cartridge, and use of stool for pediatric diagnosis of TB, LF LAM, and TB LAMB. During the workshop, in readiness to install new diagnostic platforms, counties developed TB diagnostic equipment needs assessment concept as a justification for support with additional machines. The activity was attended by 130 participants, including NTLD-P, County medical laboratory coordinators from 47 counties, and representatives of CTLCs, superusers, and partners. Based on the performance scorecard, the top three counties and health facilities were awarded trophies in appreciation for their efforts toward TB control.

TB interventions in Homa Bay County: Attaining outcomes that augment the fight against TB

Stella Omullo - Nyanza Regional Officer, CHS-USAID TB ARC II, Dr. Gerald Akeche, Chief Officer of Health - Homa Bay County and Carolly Migwambo, CTLC - Homa Bay County during the interview.

By DNTLD-P Team

Budding health care workers are committed and passionate in TB control work. I urge them to continue offering quality care that not only meets but surpassesthe expectations of the communities they serve

- *Carolly Migwambo*

Carolly Migwambo, the County TB and Leprosy Coordinator (CTLC) in Homa Bay county opines that the support that the county gets from partners geared towards prevention and treatment of TB has made Homa Bay County one of the best performing counties in Kenya in the fight against TB and ending the endemic by 2035.

The National TB Program, Homa Bay County government and the partners have rolled out collaborative measures to ensure that the outcomes of the TB mitigation program are collectively actualized.

From the collective impact action, Homa Bay County has benefitted in areas such as support supervision, capacity building, and DR TB management among others. These interventions have boosted the initiatives for fighting TB in the county.

According to Migwambo, the county has been able to conduct TB data-driven supervisions in its 186 TB control facilities. Sub-County TB Coordinators have been empowered with the skills and tools to analyze their data and prioritize facilities that need more support. "Where the need is high, that is where they go for

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Carolly Migwambo, CTLC - Homa Bay County during the interview in his office.

Cont'd from Pg. 15

supervision", says the CTLC.

Adding, "In supervision, we have also conducted TB exchange support supervision. This strategy is more of a peer-to-peer learning process where I would travel with sub-county coordinator from zone A, we travel with him or her to zone C to see the best practices in that zone so that they can also learn the best practices and roll them out in their sub-counties. I can attest that this has worked for us".

Homa Bay has gotten a lot of opportunities to train its healthcare workers. These trainings include the integrated curriculum for health care workers on TB and pediatric TB. Capacity-building activity has improved TB notification among children in the county. "On TB pediatric cases, we started with a low of about 7.8 but as of 2021, we were at 10.4 percent. We have hit the program target of between 10 – 15 percent courtesy of those trainings", says Migwambo.

In facility-based Continuous Medical Education (CMEs), active case finding, mentoring of staff to conduct TB screening, fast-tracking investigation of presumptive cases and treatment linkages of those diagnosed on time has been prioritized. CMEs are also used to promote quality of care and enhance monitoring of patients while on treatment.

Other area of support is Drug Resistant (DR) TB through activities such as sample networking especially on biochemistry and hematology tests that are done at Lancet. "This helps us to monitor our patients who are on DR TB treatment so that when they have any effects from the drugs, we are able to detect on time and manage them accordingly", says the Homa Bay CTLC.

Further noting, "we have been supported to conduct our own internal data review for TB where we involve the TB Coordinators. They meet and look at our data and figure out how we can make sense of it. Through this, they come up with action points to address the gaps experienced".

Through External Quality Assessment (EQA) activities, TB Coordinators are able to sample slides and then they take to laboratory coordinators for reviewing to gauge whether the results they are giving are meeting the set threshold in terms of standards.

"If you compare 2020 to 2021, we increased cases by 6.1 percent. If you look at our treatment success rates and treatment completion for Drug sensitive TB patients, we have actually surpassed the program target, we are actually at 93 percent treatment success rate for the 2020 cohort. We usually used to register mortality of more than 10 percent but for the 2020 cohort, we reduced it to 5 percent", says the CTLC.

Carolly advises budding health care workers to be committed and passionate in TB control work. He urges them to continue offering quality care that not only meets but surpasses the expectations of the communities they serve. He reminds both the national and county governments that in the backdrop of shrinking donor funding, the journey towards self-reliance has just begun and thus an elaborate legislative framework is required for prioritization of activities.

Status of National Tuberculosis Epidemic and Response

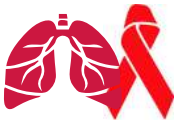
Quarter Two 2022

Drug susceptible TB

22, 677
Number of TB cases Notified

85.9%
Treatment success rate (All forms. Q2 2021)

11%
Poportions of children

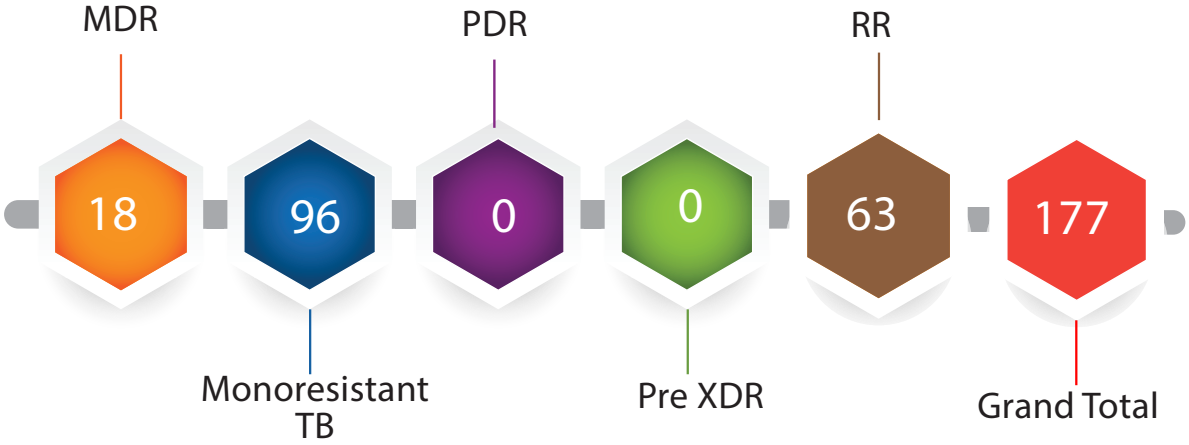


85.9%
DSTB with Known HIV status

4.9%
Lost to Follow Up

97%
Proportions on ART

Drug resistant TB



Leprosy

24

Number of Leprosy Cases reported

TB Prevention Therapy

3554

Children <5 initiated on IPT (contacts of bacterilogically confirmed cases

TB mitigation measures in Gem sub-county succeeding

By DNTLD-P Team

Due to a number of programs being implemented in Gem Sub-County concerning finding and treating Tuberculosis, the number of cases notified in the sub-county has tremendously grown. A sign that although the prevalence of this infectious disease in Gem is high, efforts of finding and treating TB are paying off.

According to Collins Omondi, the Gem Sub-County's TB and Leprosy Coordinator, notification of TB cases in the sub-county is high with a substantial increase noted in the past three years.

"In 2020, the total number of TB cases that were notified in our sub-county was 403, in 2021 there was an increment of 214 additional cases, thus raising the previous year's total cases to 617". A number of factors have contributed to this, but the main factor is the conducting of Continuous Medical Education (CMEs) in all health facilities across the sub-county.

Before the implementation of CME was started, the sub-county performance on TB management, according to the SCTLC lagged behind. To ensure that the initiative was transformative owing to the fact that Gem sub-county is expansive, a suitable strategy of executing the CME was created and put to action, covering the entire sub-county.

"The CMEs were initiated in different zones and tailored made in a way that they accommodated health care workers conveniently. The aim was to have TB diagnosis happen in all service delivery points that we targeted. We are grateful that CHS supported this initiative", says Omondi. Adding, "we divided the entire sub-county into four zones that is: Nakal, Wagia, Malanga and Yala so that people would not be inconvenienced by traveling long distances in search of TB services. Also, the support we got couldn't cater for everything, so we had to think of ways to ensure efficiency within a context of resources constraint".

The CMEs were targeted at healthcare workers who include: counselors, nurses, clinical officers, pharmacists and laboratory technicians from the four areas that were zoned. The trainings were designed in a manner that was participants-centric and solutions arrived at collaboratively.

"It was important for us to build a common purpose, read from the same script and thus we started by teaching people the basics such as what is TB and its causes? What is the presentation? How is the management of TB like and the investigation techniques that are available"

With such topics covered in these trainings and the healthcare workers taken through the TB situation in the sub-county, a mutual and feasible agreement on targets was jointly settled. "We targeted a notification rate for 426/ 100,000 population in every hospital", says the sub-county TB Coordinator.

During this process, it was established that GEM sub-county, although lagging behind in matters TB management, it had some strengths that could be used as a launch pad to turn the situation around and improve TB services offered at the sub-county.

"We have a substantial number of healthcare workers to handle patients. We also have a Gene Xpert in Yala and a reliable transporting system for sample networking", says the SCTLC.

Through these CMEs, we have realized that there is an increase in TB cases that are brought to our attention.

Collins Omondi, SCTLC Gem Sub County, Siaya County

"Other times you have to do follow up visits to find out how the facilities are faring on with the agreed terms; this allows a team to enhance its strategy".

These CMEs have been beneficial to the sub-county, as the Gem Sub-County TB and Leprosy Coordinator states, "through these CMEs, we have realized that there is an increase in TB cases that are brought to our attention and it means our efforts of finding missing cases are fruitful".

The CME also established that Gem sub-county was not doing so well on pediatric Tuberculosis. "We realized that although pediatric TB cases were high, we were only doing at 2 percent while the target ought to be between 12 and 15 percent. This prompted us to start doing targeted CME and by January 2022, Gem had doubled paediatric TB cases".

One of the impact stories, from this initiative is that of Mary Auma Omollo. Healthcare workers from Nyagodo dispensary learnt about her case through support supervision and they decided to visit her home where she had been bedridden for several months and deserted by close relatives including her husband who hand inherited her after the demise of her first husband. The healthcare workers supported her through out her treatment that took over one year to the point she fully recovered. *Read more on Mary Auma fight with TB Pg 20.*

Dede Health Center: Transforming lives through patient-centered care

Nelly Okwiri, Awendo Sub-County TB and Leprosy Coordinator and a clinician during a support supervision at Dede Health Centre

By DNTLD-P Team

Dede Health Centre used to miss three-quarters of TB cases but after the training of its two clinicians on Pediatric TB and Integrated TB Management, case notification in the facility has increased.

"Before the training, Dede Health Centre identification of TB cases was at 44 percent, but after the training, the rate increased to 64 percent", Nelly Okwiri, the Awendo Sub-County TB and Leprosy Coordinator says.

Another thing that has improved due to the training is the collective handling of TB cases, says the Sub-County TB Coordinator, adding that before the responsibility was left to TB clinic. "We work with Maternal and Child Health Clinic (MCH) where if they get susceptible cases, they immediately bring them to the attention of the clinicians who do screening and further analysis. We have seen that this reduces catastrophic effects on patients as they are put on the right treatment at the right time".

TB Active Case Finding (ACF) stamp was also introduced. "This is one of the best practices adopted after the training, however at the beginning clients did not understand it, but they have come to appreciate it with time. This is one of the tools that has improved our situation".

The infection Prevention and Control (IPC) setup is also another benefit that is also highly appreciated. It was put in place with well-documented monthly meetings. "I encourage a combined IPC effort whereby TB clinics work closely and in concerted efforts with MCH".

Establishment of a coughing zone also emanated from the training. "I personally took charge of the creation of the zone. When a client goes there, they can take a cough comfortably because they are relaxed. It was an issue because it seemed awkward for clients to cough for the purpose of producing sputum anywhere outside the facility, especially during COVID-19 but this has now changed".

Treatment outcomes are impressive as data indicates that cure rate has grown from 65% to over 90%. This is because there is a good understanding of the quality of care. Regular meetings are also held to discuss performance and review how strategies are working. "TB patients' days are on Friday and clients are seen with Ministry of Health clinician. We hope to train more clinicians. When clinicians are trained, the outcomes always improve".

Another way of executing TB mitigation measures that is working in Dede Health Centre is well displayed TB patients' packs as per respective patient's dosage. "This is an initiative that arose from training. It wasn't happening before. Today, every patient has a pack. We compare the daily activity register and the drugs given. From the training, in every area of our focus, we've moved from 40% to 80%", says the Clinician.

Our initiative of involving all staff members in TB screening are highly impactful. "For example, during outreaches, where screening for TB is done. Right from the gate, the watchman is able to identify a person with a cough and channels them to us. This really helps us in triage", says the Sub- County TB Coordinator.

> **"Before the training, Dede Health Centre identification of TB cases was at 44 percent, but after the training, the rate increased to 64 percent"**
>
> *Nelly Okwiri - Awendo Sub-County TB and Leprosy Coordinator*

Equipping healthcare workers with hands-on skills in the fight against TB

Stella Omullo, Nyanza Regional Officer - CHS-USAID TB ARC II, Felix Mbetera, Head of Communications - NTP and Mary Wambura, CTLC - Siaya providing TB technical support to Faith Kioko, TB clinician, Kogelo dispensary, Siaya County.

By Mbetera Felix | DNTLD-P

Trainings targeted at TB healthcare workers have improved their capacities by changing mindsets. Clinicians are equipped with hands-on skillsets that enable them to easily identify TB cases and improve quality of care offered to clients thus stepping up the efforts of ending TB.

Faith Kioko, a twenty-nine-year-old Clinical Officer who works at Kogelo dispensary TB Clinic, says that at the beginning she had a challenge in helping clients with sputum collection. "Initially I had challenges guiding the clients to get sputum. You can identify someone who is presumptive but getting that sputum is really critical. Doing this was challenging and a problem for us".

Through the trainings, there has been an increase in the number of TB cases notified. "I was trained on how to guide clients to produce septum. That helped me a lot. We used to have around four TB clients but after the training, the number increased tremendously".

Faith Kioko, Clinical Officer in charge of TB clinic at Kogelo dispensary

She further observes that her sub-county coordinator is open for consultations through support supervision.

In view of this, she resolutely advocates for support supervisions and training on community management. It allows healthcare workers to explore options available to them, hence are in a position to make the right decision.

Faith Kioko says, "when you are handling a person whom you think has TB, it is prudent to investigate thoroughly. Also, some cases are better handled through support supervision particularly clinical diagnosis because you might presume a person is TB positive only for the sputum to turn negative. A person should not give up on testing but in the process use a combination of testing methods and consult widely".

Reflectively, she advises healthcare workers not to fear serving TB clients. She asks her colleagues to think of themselves on the other side of the table, agonizing over something they would have been able to prevent.

"I think the biggest motivation would be you can be a client one day, if you take good care of this patient then you are breaking the spread but if you become negligent then you might also become a victim of the same things that you would have prevented. That is the biggest thing clinicians should remember".

> **"I was trained on how to guide clients to produce septum. That helped me a lot. We used to have around four TB clients but after the training, the number increased tremendously".**
>
> *Faith Kioko, Clinical Officer Kogelo dispensary TB Clinic*

There is hope! TB is treatable and curable: Mary Auma

By DNTLD-P Team

At Wagai Dispensary, a facility popularly known by the local people as Nyagondo, a meeting is held every Monday morning to review TB cases at the facility targeting to establish the best intervention measures per case. Healthcare workers are encouraged to submit any concerns they have about a particular case.

At one particular time, a unique case was brought to the attention of the meeting. It was about a patient who had been confined to bed for about six months.

According to Gem Sub-County TB and Leprosy Coordinator, Collins Omondi, the diagnosis was not clear. He took the initiative and rode with a healthcare worker on his motorbike to the patient's home.

They found Mary Auma Omollo bedridden. She complained of stomach pains that had persisted for about six months, making it hard for her to walk. She also was unable to eat. After a thorough examination, she was clinically diagnosed with TB.

"Since Mary Auma wasn't able to walk, we checked her for trauma signs and found none. We took her history and upon subjecting her to a physical examination, we realized that there was a deformity on the spine. This was the answer to the question what ailed her. She had Pott disease also known as TB of the spine. With this diagnosis we were optimistic that Mary Auma would be treated and cured", says Collins.

This fifty-year-old woman, a mother of six children who lost her husband in 2005 and later re-married through a traditional wife inheritance arrangement, says before she was diagnosed with TB, she experienced untold suffering.

"My body was in a never-ending pain; I couldn't move or do anything for myself including the simplest things such as going to the toilet. To make matters even worse, my beloved ones deserted me, they left me to die", says Auma.

The disease, Mary says, began with a problem in her stomach sometime back in August 2019. Whenever she was walking, the pain became severe and thus walked with a stoop which to her mind helped in easing the pain. When she met people, at times,

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she pretended to be searching for something or dusting her feet just to evade awkward questions.

Several times she visited Nyagodo hospital but each time the treatment didn't work. The prescriptions were pain relievers. The pain would ebb away and then reoccur.

At one point, she was referred to Yala hospital for further examination which she managed with her daughter's support. She was found with a condition in her stomach that required an operation. Unfortunately, due to financial limitations, she wasn't able to go on with the procedure. She went back home and her condition aggravated.

The stigma demoralized her even more. Only a few people associated with her. Others said she was bewitched. Her solution, they advised was the traditional medicines and prayers.

"We counselled her to have faith in the treatment process and avoid using herbal medicines having gone from one facility to another without success", says the Gem STLC.

She wasn't shocked when she was found with TB, she says. It was a respite, a major break from using herbal concoctions that made no difference to drinking raw blood in an effort to increase blood count which at the end of the day yielded no results. It was like fighting an indefinable enemy. She embarked on her medication with hope that TB is treatable and curable just like she had been assured by healthcare workers.

"After taking the drugs for a while I saw significant changes, the doctors would also visit me weekly to check my progress. They encouraged me to keep on going with the treatment. I would send my children to collect my packs from the hospital. I was given a month's pack to ensure that my child who collected them for me didn't miss a lot on his syllabus coverage", she says.

Her children would come from school in the evening and clean her bed from where she would answer calls of nature as she couldn't walk, cook food and remind her to take her TB drugs. During the day when her children were in school as she had no one to take care of her, Mary Auma would eat the previous days leftovers and stay in bed.

Stella Omullo, Nyanza Regional Officer - CHS-USAID TB ARC II, and Mary Wambura, CTLC - Siaya review Mary at her home.

> **"We thank God Auma is cured; we also thank the National TB program for supporting activities that help ease the burden of treatment on needy people. Were it not for the provision of drugs and the training they have given us, this wouldn't have been possible".**
>
> *Collins Omondi - Gem Sub-County TB and Leprosy Coordinator*

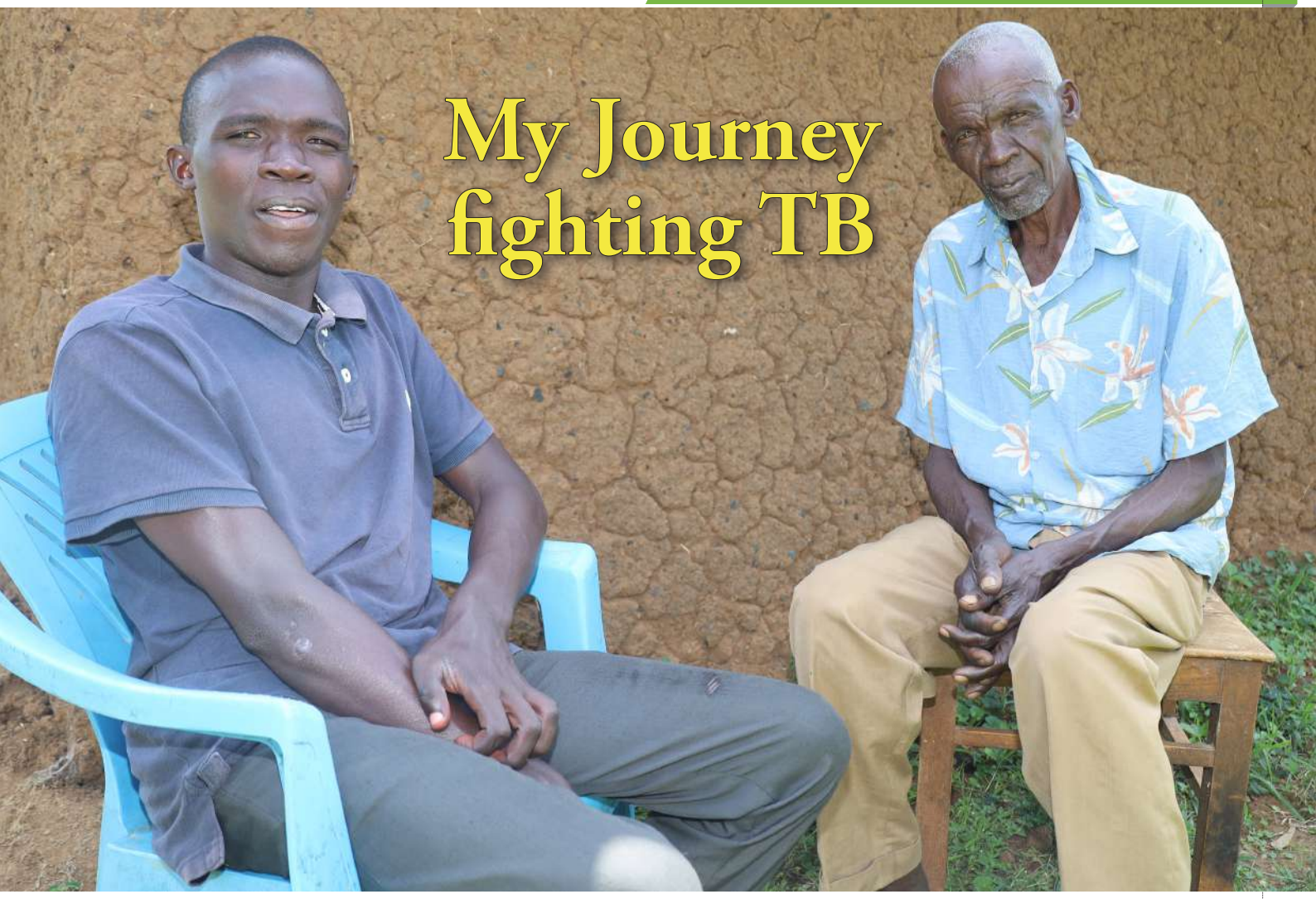
The TB drugs had no side effects on her but she faced a challenge with an insufficient supply of food. Auma mainly depended on ready-to-use therapeutic food and fortified blended flour, treatment supplements, which she refers to as "porridge flour", that she got from the facility. She was also given monthly stipend. After taking the drugs for one year, she was declared TB free. Although her back is still swollen, she is able to walk.

Mary Auma is grateful for the support accorded to her by healthcare workers, especially for committing themselves to treat her from home. She appreciates government for providing TB treatment for free. She resiliently fought TB and implores people not to be judgmental and discriminatory of TB clients. She opines that being supportive helps one get better quickly.

The healthcare workers at Nyagondo dispensary are happy that the support they are getting from government and partners in finding and treating TB is paying off.

"We thank God Auma is cured; we also thank the National TB program for supporting activities that help ease the burden of treatment on needy people. Were it not for the provision of drugs and the training they have given us, this wouldn't have been possible. We also thank the staff who are very passionate about their work. Mary Auma can be one but there are a quite a number in the village(s) and we must find and treat them", says the Gem STLC.

My Journey fighting TB



Michael Ouma, a spinal TB client with his father, Jacob Ouma the primary care giver

The KES 6,000 I get from the Ministry of health would help me get the necessary food requirements to facilitate my son's healing. I am forever grateful.

By Kelly Mwangi and Rodah Nisa | DNTLD-P

Michael Omondi, a 24-year-old young man from Siaya county believed he is not susceptible to any major disease from a mere wound, and assumed a swelling for a regular boil in 2019.

He, at some point, took anti-biotics to ease the pain. However, the extreme fever was noticeable. His friend advised him to sort help. He was put on injectable antibiotics but he still got worse.

The pain got more severe and the wound began to impede his walking. On testing the pus from the wound, Dr. Odhiambo, a clinician at the facility identified a rare form of Tuberculosis.

"When it comes to TB, you have to do everything you can about testing, even after the antibiotics." He firmly spoke on the need for thorough screening and testing of TB clients.

In Michael's case, the resistant part of TB was identified through genexpert. Michael on the other hand did not understand the magnitude of having and living with TB. To him, it is as normal as it gets and it does not warrant discrimination of any kind.

"I do not understand why anyone should discriminate against me," he says.

Michael lives with his 75-year-old father, Mzee Jacob who noted that young people require attention from their parents, especially since his son is ailing from a disease most people in the village dread.

He takes care of him fully, from cooking his meals to ensuring he takes his medicine. Mzee Jacob expressed his gratitude for the help from the

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Pamela Kerubo a former TB client at her vegetable and fruit business in Miruka market Nyamira County

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government to aid in his son's medical expenses. "The KES 6,000 I get from the Ministry of Health would help me get the necessary food requirements to facilitate my son's healing. I am forever grateful."

Michael describes Dr. Odhiambo as extremely caring and resilient in his services. "He brings my medications daily in the evening and follows up without judgment. Doctors like Peter Odhiambo are good people."

He acknowledges that recovery is not easy and for the one and half years he still holds onto taking his medicine. "I am not fully recovered, but I am glad that the pain is much less now. I can do physical things, and I have been feeling better since week two of my prescription program."

Dr. Odhiambo defines Michael as a motivation, "It motivates me a lot to see a patient recover. I feel more encouraged to follow up." Michael hopes to get better and enroll back to school to pursue his dream of becoming a building and construction engineer.

Like Michael, Pamela Kerubo, a 48-year-old mother of one (1) daughter tells her story of her remarkable battle against Tuberculosis. It all began with a persistent cough. For weeks, she lost her appetite and was very weak. In pain and vomiting, she lost a lot of weight.

After much over-the-counter treatment, she visited Nyangena Hospital where she was diagnosed with TB and HIV. Besides the shock, she was glad for the diagnosis. She lived in a household of five (5) adults and four (4) children under five (5) years, characterized by segregation and stigma even by her mother.

Unlike Michael from Siaya who was getting full attention and care from his father, Pamela was struggling to cope with her family. "They even separated the utensils I used. They avoided me for fear of contracting the disease. Neighbors spoke ill of me since I lost so much weight." She narrates.

According to her, only her brother came to her. "He carried me on his back to and from the hospital for the first month."

Through contact tracing, the doctor screened the other members of the household and of the five (5) adults, one (1) was confirmed positive with TB.

"I felt better after one week into the medication, although I was worried when I saw unusual matter in my urine. However, the doctor assured me that everything was okay and that that was my blood being cleaned."

With a positive attitude, she took her medication faithfully. Due to her new high spirits, her family warmed up to her and began supporting her. "My mother began washing me and cooking my meals. Initially, I was weighing 48kg and added 10kg more. I am glad and way better now," she says.

Pamela has now fully recuperated and progressing well. She has gone back into self-employment in the grocery business and joined a women's support group. She sensitizes her fellow women on the need to take charge of their health and advocates for frequent routine check-ups in case of relatable symptoms.

"I greatly appreciate the doctors working with the government and fighting TB. The services they offer are priceless and free. My doctor was the motivation behind my success. She would counsel me and encourage me to take medicine," she remarks. Pamela is encouraging others to own their health, get tested and take their medication as advised. She is confident that civic education among the people will help lower cases of TB in the region. ■

> **"I greatly appreciate the doctors working with the government and fighting TB. The services they offer are priceless and free. My doctor was the motivation behind my success. She would counsel me and encourage me to take medicine,"**
>
> *- Pamela Kerubo*

Supporting TB clients from the market stalls

Elija displays the patients pack on his stall in the market from where he supports clients to take their treatment

By Evaline Kibuchi | StopTB Partnership Kenya

Elija, 48, strolls towards his market stall in Embu town where he sells peas. His day starts as early as five a.m. He supplies peas to the retail vegetable market in Embu town. He buys his stock from the wholesale market to supply to other small-scale businesspeople in Embu market.

After buying his stock, he retreats to his stall where he has another task awaiting him. That of supporting TB clients to take their daily medication. Elijah doubles up as Community Health Volunteer at the market. He ensures that his colleagues on TB treatment take their TB medication adherently. He currently has five TB clients under his care, all men aged between 37 to 50.

Peter* (not his real name) arrives first. This is his 44th day on TB treatment. Elijah has his routine set. He starts by cleaning his hands from a 10-liter jerrican placed next to the stall, after which he places a few drops of sanitizer on his hands before vigorously rubbing them together in readiness to dispense the drugs to his client. He opens the huge carton-box where he stores the patients' packs of TB drugs. He pulls out one packet which he carefully reads the name on the pack to confirm its Peter's.

> **"Seeing my friends' health restored is payment enough for my sacrifice".**
>
> *Elija - Community Health Volunteer*

He removes three pills from the blister packs and places them on Peter's hand, who is now holding a glass of warm water. Peter tosses the pills one by one to the mouth and follows with a gulp of the warm water. All the while, Elija is keenly watching as peter does this. When he is done, he thanks Elija. They exchange some pleasantries about the previous day in the market after which he waves Peter bye and wishes him a good day. He also reminds him to eat lunch. *"Na ukumbuke lunch ni muhimu sawa?"* (and remember lunch is important okay?) Peter nods and leaves in a rush. Elijah will repeat the same for his other four clients.

Elijah has never had TB himself. His interest in TB all started when his friend in the market fell ill with TB. Due to the demands at his place of work, he could not make time for the frequent drug refill as instructed at the hospital. He therefore defaulted on his treatment not once, not twice but three times! He was warned he could develop drug resistant TB or at the worst die if he failed on his treatment one more time! Elijah became alarmed that he could lose his friend. He also knew he was at risk himself. He therefore decided to support him take his treatment and even escort him for the frequent checkups. This would not only ensure his own safety but also ensure he his friend was cured. His friend finally completed treatment and got cured.

Elija vowed to support other TB patients in the market. He therefore picks the patients packs from the community Health volunteers (CHVs) and ensures the patients religiously take their doses.

Four of his patients are currently on the second month of treatment while one, a contact to one of the first four is on the first month of treatment. He also monitors six others most of whom are beba beba (potters of luggage in the market) who are on treatment but are struggling with alcohol and smoking. He ensures they do not fall back to drinking or smoking while on treatment through constant counseling. Several of them are homeless. Elija is also the chairman of the market. He has been trained on TB including the follow up sputum to ensure his clients do not miss any clinic visits.

He is currently on TB Prevention Therapy (TPT). The county TB coordinator explained that he was at risk of infection as he interacted with persons who had TB. He admits stigma is high in the market which makes most TB patients shy off from seeking treatment. Though he is not paid for the services, he is happy to help, "seeing my friends' health restored is payment enough for my sacrifice", Elijah notes.

Elija works with the Global Fund-supported CHVs through Kenya Conference of Catholic Bishops (KCCB). The CHVs and the TB coordinator appreciate the role he plays in fighting stigma and supporting TB clients access services from the comfort of their workplace.

Gender and Tuberculosis: The social-economic effects of TB on women

Alice Atieno and her daughter during the interview

By Martin Wanjala | KCCB

Alice Atieno a 21-year-old woman, who was in November 2020 diagnosed with Tuberculosis was at that time a student studying Cosmetology at the East Africa Institute of Certified Studies in Mombasa. Now, she is married with one child

She initially experienced chest pain, fever, and general body weakness. However, these symptoms persisted for close to five. In those five months, she would get painkillers and over-the-counter medicines from nearby chemists to fight fever and pain.

Alice's health deteriorated so much that one day she had a conversation with her husband and they agreed that she goes to Kisii. The choice of Kisii was informed by her husband, who was also in college studying to become a teacher, thus her being ill and having a breastfeeding child Tanaya was straining their shoestring budget. In Kisii, she would stay with her mother-in-law, who would provide her with the needed care that the schooling husband could not adequately provide.

She sought medical attention at Tabaka Mission Hospital and got admitted for two weeks with pneumonia as the initial diagnosis. Alice was discharged from the hospital following treatment. Before being discharged, a clinician requested her to provide a sputum sample for TB testing following a review.

After a week, she received a call to go to the hospital. The clinician informed her that the Gene-Xpert sputum results turned positive, indicating that Alice had TB disease. "Upon receiving the results, I was scared since I knew so little about Tuberculosis," she said. "I heard that if one contracts Tuberculosis, one will die." With this in mind, Alice declined to go to the hospital for treatment. A family friend who is a doctor reached out and encouraged her to seek treatment and informed her that Tuberculosis was not fatal if diagnosed and treated early.

> **"I didn't hear anything that Daktari said. I was worried about my daughter Tanaya now that I had TB".**
>
> *- Alice Atieno*

Encouraged, Alice returned to Tabaka, where she met Dominic Onkendi, a lead clinician who took her through the treatment counseling session. "I didn't hear anything that Daktari said. I was worried about my daughter Tanaya now that I had TB". The clinician recommended that her daughter undergoes a routine chest x-ray examination to rule out TB since she was also unwell. The chest X-ray meant

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School Health Program: TB risk reduction in learning institutions

Brian Opondo sharing his experince during the seventh edition of the catholic schools principal's association conference at the Catholic University of Eastern Africa.

By Martin Wanjala | KCCB

16-year-old Brian Opondo, a form three student at St. Mary's Kibabii High School in Bungoma County, had been grappling with a persistent cough for 8 months that affected his studies and participation in extracurricular activities in school. Brian's parents had done all they could for their son, but nothing worked. Over-the-counter medication from local chemists had yielded little other than temporary relief. Eventually, Brian had to seek care at Kibabii Health Center since he was too sick; the persistent cough, weight loss, and general body weakness had taken their toll, disrupting his ability to go to school.

> **"My teachers supported me by providing permission to attend my weekly hospital appointments. My schoolmates were equally supportive during the six months of treatment."**

When his parents took him to the health center, the clinician took his history of illness, examined him, and requested him to provide a sputum sample for testing in the lab. Later, the clinician called Brian's parents to inform them of the sputum test results. The sputum results showed that Brian had TB disease. Brian and his parents were relieved to know what had been ailing him for the past eight months. He was counseled about TB treatment and the importance of taking his medication correctly and consistently. The clinician reassured Brian and his parents that TB was treatable and curable.

Brian was able to return to school while on TB treatment. In school, Brian decided to disclose being on TB treatment. He was motivated by the thought that he would be supported in his TB treatment journey. Brian says, "My teachers supported me by providing permission to attend my weekly hospital appointments. My schoolmates were equally supportive during the six months of treatment."

The Kibabi Health Center medical team, in collaboration with the sub-county TB coordinator, visited Brian's school, where they conducted TB screening for those who had come in close contact with Brian before his diagnosis. They also provided health education about TB as part of awareness creation. Brian successfully completed his TB treatment and was declared cured. Today Brian is a TB champion. He shared his experience in the just concluded seventh edition of the catholic schools principal's association conference held at the Catholic University of Eastern Africa (CUEA).

Brian's story highlights the importance of the TB Public Private Mix (TB-PPM) engagement that the National TB Program is spearheading in collaboration with counties and like-minded partners like the USAID Komesha TB Program implemented by the Kenya Conference of Catholic Bishops (KCCB). The engagement aims to improve the capacity of various stakeholders, including private health

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Gender and Tuberculosis: The social-economic effects of TB on women

money she did not have; fortunately, Dominic reassured her that the X-ray service was paid for through the USAID Komesha TB program. The program provides support for pediatric chest X-rays.

Tanaya was diagnosed with TB disease following the chest X-ray findings. "In my mind, I was staring at death following my daughter's TB diagnosis." She added, "I was encouraged with the reassurance that the disease is treatable and curable." Alice and her daughter were put on TB treatment. As this was happening, her husband was still in Mombasa and would call once in a while to find out how they were fairing.

While male patients with TB ordinarily expect their wives to care for them, women with TB, on the other hand, rarely receive the same care. Alice is grateful that she had a supportive clinical team. In her own words, she says, "I was at peace being around the hospital staff because they were friendly and supportive." Over time, the Tabaka Hospital Management employed her as part of their support staff. The employment meant she could provide for herself and her daughter without bothering her mother-in-law. Alice and her daughter responded well to treatment and completed their TB treatment.

While significantly more men than women contract TB and die from it, TB can have severe consequences for women, especially during their reproductive years and pregnancy. According to the World Health Organization, 3.3 million women were diagnosed with TB in 2020 out of 10 million people who fell ill. TB is among the top six causes of death among adult women aged 15-49 years. Like Alice, women are more vulnerable to Tuberculosis's social and economic effects caused by cultural and financial barriers to seeking care resulting in delayed presentation and more severe illness. Women are also more likely to face discrimination and stigma in their homes and, in some instances, be rejected by husbands and in-laws due to their illness, making it difficult to access medical care and treatment. On the other hand, women may have less access to TB treatment and prevention services than men due to cultural norms and inequalities. For women and girls, diagnostic delays and lower service efficiency may be due to increased stigma associated with having TB and the non-integration of TB services with other reproductive, maternal, and child health services.

> **"I was encouraged with the reassurance that the disease is treatable and curable."**
>
> *- Alice Atieno*

Understanding and addressing human rights and gender barriers that people face in accessing TB care, information and services, is critical. Activities that integrate community, rights, and gender principles are vital in removing barriers for underserved and vulnerable populations that may face and increase their access to quality TB services. A gender-based approach to TB, for example, addresses the social, legal, cultural, and biological issues that underpin gender inequality and lead to poor health outcomes. By improving people's awareness of their human rights and addressing the systemic barriers preventing them from accessing care, we will be able to find more people with TB, especially in hard-to-reach areas.

The USAID Komesha TB Program implemented by Kenya Conference of Catholic Bishops (KCCB), in collaboration with the National TB Program, will continue to ensure that access to quality TB services remains unbiased.

School Health Program: TB risk reduction in learning institutions

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providers and private chemists, to diagnose TB or refer presumptive TB cases identified for timely testing and diagnosis. Further, it highlights the importance of multisectoral involvement in the TB response. The National TB Program has been championing this critical aspect of TB response by engaging various sectors, including the education sector.

Working closely with the Ministry of Education, Teachers Service Commission, and other stakeholders, the National TB Program is developing a TB policy for learning institutions in Kenya. The policy will provide the much-needed guidance for TB response in these institutions since they are part of high-risk congregated settings where TB transmission occurs. This will help provide a safe and supportive environment free of stigma and discrimination for learners who have TB to take their TB treatment while continuing with their education uninterrupted.

"We have sensitized 1,520 school principals of faith-based sponsored schools from the 47 Counties," says Dr. Samson Muga, Program Manager.

These collaborative efforts through TB PPM and Multisectoral engagement at the national and county levels are critical to making Kenya a TB-free country.

Reaching key populations with targeted behavior change TB messages

By Diana Kagwiria - TB ARC II

35-year-old Mohamed Karanja was watching TV at Kitengela GK Prison, Kajiado County where he is serving a jail term when he got attracted to a TB infomercial running on the TV.

"Unlike the other information that had aired before, this caught my attention as it spoke of something that had been disturbing me for some time. I had been experiencing fatigue, night sweats, and loss of appetite," Karanja shares.

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He continues "The infomercial described this together with a cough of any duration as the cardinal signs and symptoms of TB and called out anyone having either or all to seek treatment in the nearest health facility. The infomercial was more convincing as one of its characters was my fellow prisoner. There and then I made up my mind and left for the health center located inside here."

Upon explaining to the health worker at the health center what he was feeling, he was requested to take a TB test.

"The health worker gave me a sputum collection container and requested I go to the coughing booth where she showed me how to obtain the required sputum for testing. This involved taking a deep breath, holding the air for a few seconds, breathing out slowly, taking another deep breath, and coughing hard until the sputum came up in the mouth and spitting it into the collection container," Karanja recalls.

Immediately after the sputum collection, it was examined in the laboratory using a GeneXpert machine. The machine was placed in the facility by the Ministry of Health National TB Program and is supported by Centre for Health Solutions – Kenya, USAID-funded Tuberculosis Accelerated Response and Care II (TB ARC II) activity to provide real-time results through bundling and up-to-date maintenance.

"Within a few hours, the results were out. The health worker interpreted them to me that the confirmation was that I had TB. She went further to explain that I would be put under a six-month treatment period as I had drug-susceptible TB. This would involve taking drugs daily to be completely cured," Karanja says.

> **I would encourage more messaging on TB, it will benefit the patients and everyone in general. Knowledge is power. Were it not for that infomercial I watched, I would not have gone to the facility and gotten treated what was ailing me,"**
>
> *- Mohamed Karanja*

Karanja was immediately initiated into treatment. He was also isolated to avoid infecting his fellow inmates. As days went by, his health kept on improving. By the second week, he was no-infectious as his smear had converted (i.e., three consecutive AFB smear-negative results from sputum specimens collected more than eight hours apart), and went back to stay with the rest.

"By the second week of being on treatment, all the symptoms were gone. It was encouraging to see the improvement in my health, and this kept me going."

He continued to adhere to the treatment and is now fully recovered. " I have since regained back my health. My weight has improved from 50 to 63 kilograms. I am now proactively engaged in various productive activities here assigned by the prison wardens as opposed to spending most of the time sleeping or seated which was the case when I was sick,".

Karanja's fellow inmates were also screened for TB. Those found to have the disease were also initiated on treatment.

At the prison, Karanja is on the lookout for anyone exhibiting any signs and symptoms of TB.

" I normally encourage them to go for TB screening as the disease is treatable and curable. If you don't go early enough the disease may progress and end up killing you. Those on treatment, I encourage them to complete treatment and get cured as I did," he says.

He is thankful to the health workers for supporting him in his treatment and recovery journey as well as the Ministry of Health National TB Program and its partners like Centre for Health Solutions – Kenya USAID funded Tuberculosis Accelerated Response and Care II (TB ARC II) for supporting free TB diagnosis, treatment and treatment follow up in the country.

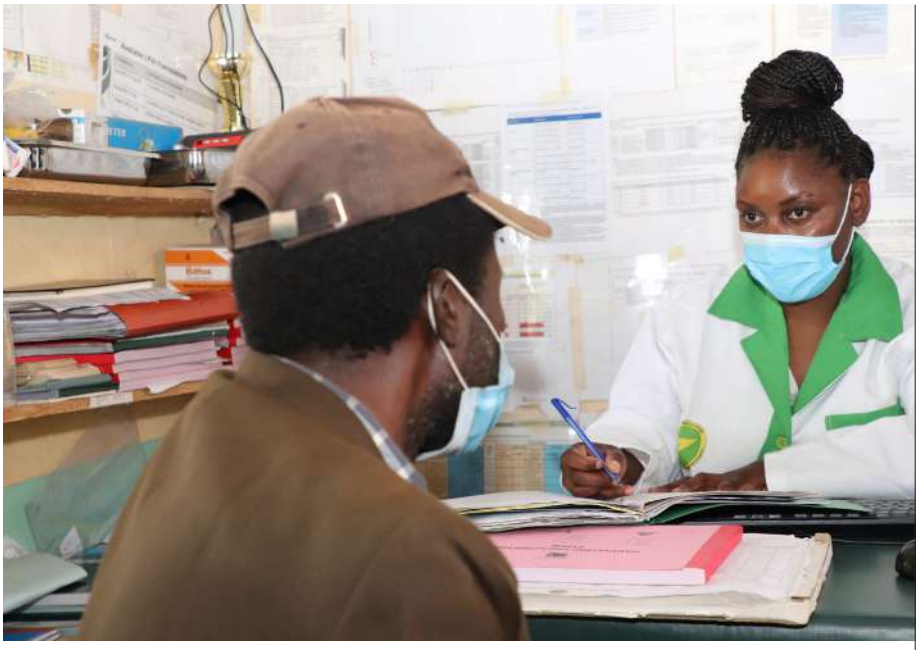
Karanja calls for more targeted TB awareness creation to enlighten people.

"I would encourage more messaging on TB, it will benefit the patients and everyone in general. Knowledge is power. Were it not for that infomercial I watched, I would not have gone to the facility and gotten treated what was ailing me," he concludes.

Prisoners like Karanja are among the key population most affected by TB due to poor living conditions; congestion and poor ventilation. The Ministry of Health National TB Program in collaboration with Centre for Health Solutions – Kenya USAID funded Tuberculosis Accelerated Response and Care II have been reaching this population plus millions of Kenyans with co-created and targeted TB campaigns disseminated through various platforms, including posters, radios, television, digital media platforms, and wall branding. The campaigns are aimed at raising TB awareness, demand creation for TB services, and treat¬ment completion.

I normally encourage them to go for TB screening as the disease is treatable and curable. If you don't go early enough the disease may progress and end up killing you. Those on treatment, I encourage them to complete treatment and get cured as I did

Integrating TB Disease Surveillance Data into KHIS2: Processes and Lessons Learned



A clinician recording clients' data before capturing in TIBU system

By Wandia Ikua, Monitoring and Evaluation Specilaist, CHS - USAID TB ARC II

Kenya's National eHealth Strategy 2011-2017, anchored on the Kenya Vision 2030, prioritized the roll out of the District Health Information System Software (DHIS2 now KHIS2) to provide efficient and effective health services delivery to Kenya Citizens. The strategy also strived to re-engineer the accessibility and sharing of information across the health systems (Kenya National eHealth Strategy 2011-2017). The eHealth Policy 2016-2030 acknowledges that eHealth is one of the vehicles «which service providers will use to provide the highest standards of health » and integration into the existing system as one of its six guiding principles (Kenya National eHealth Policy 2016-2030).

District Health Information Software 2 (DHIS2 now KHIS2) is an open source and web-based health management data platform which enables governments and organizations to collect, collate, analyze and visualize health data. It (DHIS2) is also designed with a platform that allows receiving and sharing data from other health and reporting systems. In 2010, Kenya became the first country in Sub-Saharan Africa among the seventy-three low and middle-income countries to adopt the District Health Information System Software (DHIS2 now KHIS2) for healthcare information management.

It is estimated that Tuberculosis (TB) is the second leading infectious cause of death after COVID-19 with approximately 1.5 million deaths globally (WHO 2021). Kenya is a high Tuberculosis burden county and the national TB prevalence survey of 2016 indicated that the actual burden of TB in Kenya was 426 cases per 100,000 population with an estimated annual incidence of 169,000 persons *(The Kenya Tuberculosis Prevalence Survey, 2016)*.

Public Health agency define Public health surveillance *'as the continuous process of collection, analysis, and interpretation of data, and the subsequent dissemination of this information to policymakers, healthcare and other professionals'*. Information Communication and Technology (ICT), Digital innovations, m-Health, and e-Health have been associated with efficient and effective data collection.

Kenya's TB disease surveillance system was traditionally paper-based, with the collection, collation, and aggregation reliant on manual processes from the primary data sources such as patient registers and cards. This system was time-consuming, and laborious case-based data abstraction during reporting periods resulting in delayed case notification for disease surveillance to the National Tuberculosis Program (NTP). To address these terrestrial challenges, in 2009, the NTP piloted an electronic TB reporting system using a Personal Digital Assistant device (PDA), despite its potential of providing case-based data, the system had limited capability in transmitting real-time data at the national level, subsequently, a web-based TIBU surveillance system was rolled out in late 2011. The integration of the TIBU system and

Process 1: Development of the TIBU surveillance system: in 2012, through the support of USAID, Tuberculosis Accelerated Response and Care(TB ARC), in collaboration with the NTP and other stakeholders, commenced the development of the system which was planned in three phases. Kenya was the first East African Country to implement a national case-based electronic surveillance system for TB *(Sharma et al, 2015)*.

Cont'd on Pg. 32

Cont'd from Pg. 31

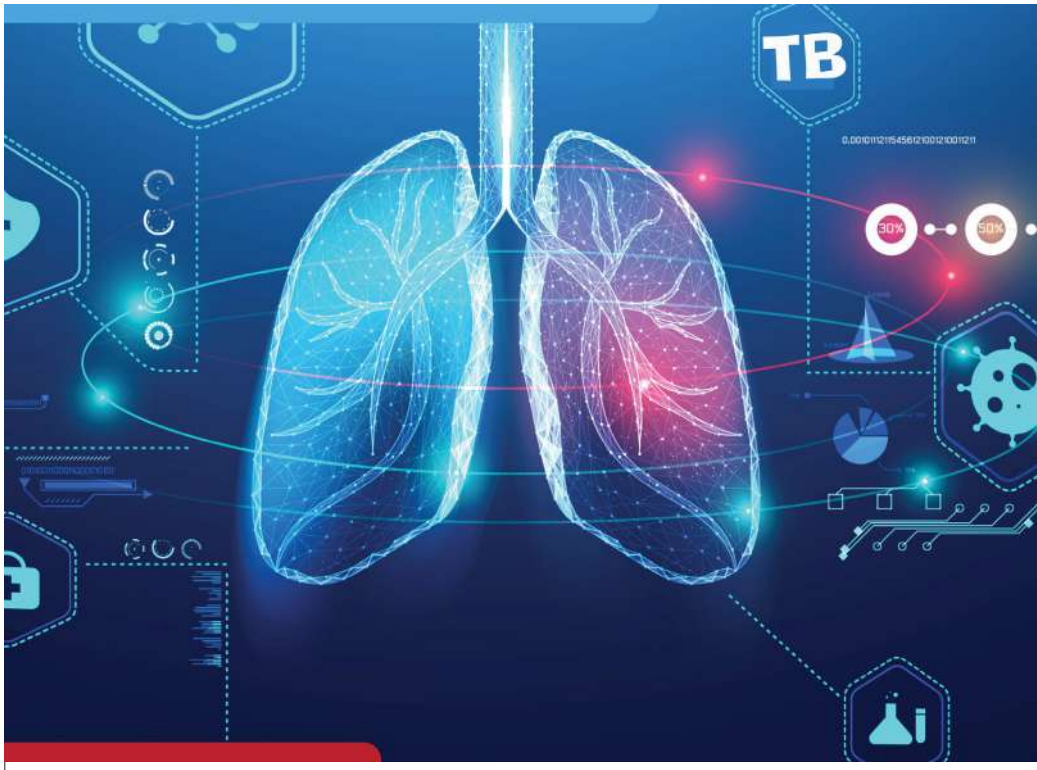
The first phase was to collect the demographics, treatment, and outcomes data for each person diagnosed with TB disease recorded in the facility register, generation both the case finding and cohort reports for DS and DR TB which is now known as the Patient Management System (PMS).

The second phase developed the supervision checklist which enabled the Sub County Coordinators to their technical visits to TB treatment and diagnostic sites across the 47 counties in Kenya and allow for transport facilitation through the system which is known as the TIBUcash. The third phase introduced the additional TB programmatic and control activities such as those for laboratory, leprosy, Community, asthma, pharmacovigilance, and other system enhancements.

Process 2: Integration of TIBU system into DHIS2 (now KHIS2) :

In 2015, through the support of USAID, TB ARC and the NTP commenced the process of integrating the TIBU surveillance system with DHIS2, whose specific objectives were :

1. To increase availability and accessibility of TB disease reports to as many users as possible via DHIS2 (KHIS2) for decision-making towards effective and efficient health services delivery
2. To ensure the availability of TB disease available in the TIBU system into DHIS2 (now KHIS2).
3. To ensure reports in the TIBU system are 'pushed' into DHIS without Health records officers re-entering the same from the facility.
4. Specific processes included:
   - Harmonizing, cleaning up, and matching facilities listed in TIBU, DHIS2 & eHealth for a harmonized list with matching MFL code.
   - Re-designing of data elements with unique Identifiers in DHIS2 for both cases finding and cohort reports for Drug-Susceptible and Drug-Resistant TB.



Consequently, after these processes, an end to end testing, aggregate TB disease case finding, and cohort reports were successfully pushed to the DHIS2 testbed (http://test.hiskenya.org/kenya/api) and ultimately moved to the DHIS live environment in 2018 and this has been the practice to date.

Process 3: Pushing data from TIBU to DHIS2 (now KHIS2)

1. TB disease surveillance data keyed into the TIBU system by the County and Sub County Tuberculosis, Leprosy, and Lung Disease coordinators (C/SCTLCs) is collated every quarter. For the timely push of TB data into DHIS2 (now KHIS2), there is a « Closure of quarter » on the fifth day of the preceding quarter done at the national level by the NTP Monitoring and Evaluation team.
2. Upon the completion of the push process of the data, there was validation of the concurrence in the reports in both systems especially in the initial stages to test the integration of the two systems, this entailed mapping of each facility in DHIS2(now KHIS2) and TIBU system.
3. A sample of the TB disease indicators available in DHIS2 (now KHIS2) include: for case finding:
   - Case Notification Rates per 100,000
   - Proportions of children (< 5 years) in contacts with bacteriologically confirmed TB
   - The proportion of registered new and relapse TB patients with documented HIV-positive status
   - The proportion of TB HIV-positive patients who started on co-trimoxazole preventive therapy(CPT) among HIV-positive TB patients
   - Proportions TB patients with the result for isoniazid and rifampicin drug susceptibility testing (DST)
   - Proportions of children (< 5 years) in contacts with bacteriologically confirmed TB patients
   - Cohort analysis for both DS and DR TB: Treatment outcomes: Treatment Success Rates, Lost to Follow Up, Death rates, Failure rates.

Kenya commemorates World No Tobacco Day

From left Concepta Wasilwa, Salome Machua, PS Susan Mochache, Lilian Mbevi, Susan Mutua and Nancy Gachoka -

By DNTLD-P Team

Health Principal Secretary Susan Mochache led the commemoration of this year (2022) 'World No Tobacco Day' at the University of Nairobi, Great court.

This yearly celebration which is held on 31st May informs the public on the dangers of using tobacco and its effect on the environment.

Every year, tobacco kills over 8 million people and harms the environments needed for health and wellbeing through cultivation, production, distribution, consumption, and post-consumer waste.

This year's World No Tobacco Day theme was "Tobacco: Threat to our environment." Through the campaign, stakeholders are called upon to raise awareness among the public about the negative environmental impacts of tobacco.

According to the Principal Secretary (PS), tobacco products contain 7,000 chemicals which include cancer-causing agents, irritants, and poison among others that are injurious to human health.

"There is no safe or less harmful form of tobacco use. The consumption of tobacco products is harmful to people living or working with tobacco users including women, children and people working in the hospitality industry," she said.

The PS who was representing the Cabinet Secretary for health, Hon. Mutahi Kagwe commended the Tobacco Control Board for the ongoing sensitization campaign all counties. She noted that the campaign gives the public a fantastic opportunity to get the true picture of the situation as regards the use of tobacco and nicotine products in the counties. Through the initiative, the board will utilise the feedback from the stakeholders to advise the Ministry on the necessary steps to take to ensure the country progressively march towards a tobacco-free nation.

The Ministry of Health conducted a rapid survey among the youth to investigate the rate of use of tobacco and nicotine products in Nakuru, Kisumu, Mombasa and Nairobi Counties

The findings show that 3 out of 10 youth are consumers of tobacco products with the majority being influenced by their friends, peers followed by social media.

Whereas there is a high level of awareness on the adverse effects of cigarette smoking among youth, the survey also shows that the mean age of starting the use of tobacco and nicotine products is 21, with some children getting introduced to the practice as early as seven years of age thus the need for more awareness campaigns.

The PS called for more campaigns to expose the tobacco industries' effort to greenwash their reputation and to make their products more appealing by marketing them.

"As a country, we must work on reducing tobacco consumption as one of the measures of achieving Universal Health Coverage and all the Sustainable Development Goals," she said.

Sensitization campaign on the dangers of tobacco and associated products launched

Tobacco Control Sensitization Forum with key stakeholders in Tobacco Control, held in Mombasa County

By Mbetera Felix | DNTLD-P

The Ministry of Health in collaboration with the Tobacco Control Board has launched a nationwide sensitization campaign on the dangers of tobacco and associated products.

The nationwide awareness sensitization exercise was a prelude to World No Tobacco Day which is commemorated on 31st of May every year. The day, which was created by member states of the World Health Organization in 1987 to draw global attention to the tobacco epidemic and preventable death and disease it causes, seeks to raise awareness and enlighten the public on the dangers of tobacco use.

Phase one of the sensitization campaign covered 25 counties clustered into eight regions converging in Mombasa, Garissa, Nyeri, Nakuru, Kakamega, Machakos, Kisii, and Eldoret

Among those targeted in the campaign include County secretaries, County Executive Committee Members, Directors of Health, County Public Health Officers, County Clinical Services, County Commissioners, County Police Commanders, those in charge of County Inspectorates, County Directors of Education, Chief Magistrates, Chairs of Health Committees at the County Assemblies, County Attorneys and County Assembly Clerks.

Speaking during a sensitization workshop at Pride Inn Hotel in Mombasa, Kilifi County Chief Executive Officer, Charles Karisa said spreading awareness around anti-tobacco use remains the most effective tool to stop the use of tobacco and related products in the country. "Smoking remains the leading cause of mortality and morbidity in the developed world. There is need for increased awareness of the enormity of the problem and the benefits of smoking cessation," he observed.

The tobacco industry has developed and continues to aggressively market new and emerging products such as electronic cigarettes, tobacco pouches for sucking, snuffing, and vaporized products among others.

To respond to these threats, state parties signed and ratified the Framework Convention for Tobacco Control (FCTC) 2004. Kenya ratified the convention in May 2004; enacted the Tobacco Control Act (TCA) 2007 and the Tobacco Control Regulations in 2014 to domesticate the global convention.

One of the state obligations under the convention and the Act is to promote public awareness on health consequences, addictive nature, mortal threat posed by tobacco consumption, exposure to smoke and harmful effects of tobacco growing and handling through a comprehensive national wide education and information campaign.

According to the World Health Organization, the tobacco epidemic is one of the biggest public health threats, claiming more than 8 million lives across the globe each year. Over seven million of these deaths are as a result of direct tobacco use while around 1.2 million are the result of non-smokers being exposed to second-hand smoke.

PS Health, Susan Mochache and Tobacco Control Board Chairperson Nancy Gachoka arriving at the UoN Grounds to grace World No Tobacco Day 2022 commemoration.

Mr. Robert Mwangi, a cancer survivor addressing stakeholders during the World No Tobacco 2022.

A participant perusing through tobacco control messages in one of the leading dailies.

Farmers from Migori County showcasing their achievements of switching from tobacco farming to farming of high iron Nyota beans, a project by the Ministry of Health and Ministry of Agriculture in collaboration with WHO, FAO and WFP.

PS, Health Susan Mochache presents the WHO WNTD Award to Mr. Joel Gitali, Chairman of KETCA for their role as CSOs in tobacco control.

Mr. Douglas Kangi, Director Crops Management receives an award on behalf of the Ministry of Agriculture for the successful gains in implementation of Article 17 and 18 of the WHO FCTC.

Ms. Susan Mutua and Tobacco Control Board Members following the proceedings.

Stakeholders following the WNTD proceedings.

Ms. Dorcas Kiptui presentation on the effects of tobacco on the environment.

PS Health, Susan Mochache and Chair TCB, Nancy Gachoka during the proceedings.

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