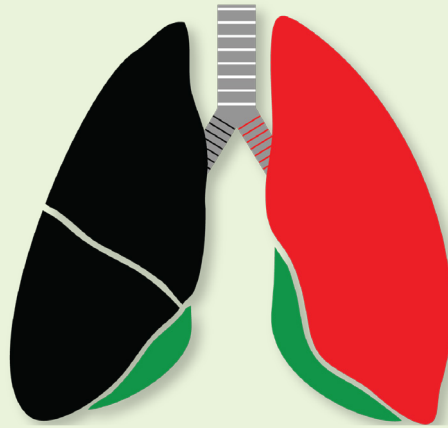




KENYA INTERNATIONAL SCIENTIFIC
LUNG HEALTH CONFERENCE

KISLHC

7TH

KENYA INTERNATIONAL SCIENTIFIC LUNG HEALTH CONFERENCE 2026

Conference Theme:

“From Detection to Recovery: Integrated Pathways & Patient-Centered Innovations in Lung Health”

DATE:

Wednesday 5th – Saturday 7th August 2026

VENUE:

Diani Reef Beach Hotel, Ukunda - Kwale County, Kenya

SPONSORS, PARTNERS AND COLLABORATORS



MINISTRY OF HEALTH



NATIONAL TUBERCULOSIS, LEPROSY
AND LUNG DISEASE PROGRAM



AstraZeneca's commitment to fighting cancer

To co-create a stronger cancer care ecosystem in Africa, together with external partners, enhancing access to diagnostics and innovative treatments.



BUILDING CAPACITY & CAPABILITIES

3000+

- MDT Specialists trained through cross-border Center of Excellence programs.

4000+

- Allied HCP trainings through virtual academies and learning programs.
- **Research** - Partnerships to support Local data generation and RWE in Lung, Breast, Prostate Cancer & Ovarian Cancers.



ENHANCING SCREENING & DIAGNOSTICS

- **First in-Country EGFRm testing** localization, for Lung Cancer in **Kenya, Nigeria, Ivory Coast & Ghana**.
- **BRCA 1 & BRCA 2 Testing localization in Kenya:** in Partnership with Aga Khan University Hospital, Nairobi. (Breast, Prostate and Ovarian cancers).
- **Upgrading Prostate Cancer Diagnosis: 7 Prostate Cancer Ultrasound Guided Biopsy Machines** placement in 7 public referral hospitals in Kenya and PSA Screening Partnership with NCI Kenya and Kenya Association of Urological Surgeons (KAUS).
- **Ethiopia Breast & Prostate Cancer Screening Program** in partnership with Ethiopian MOH, Spirit Health Foundation and Global Health Partnerships.



EMPOWERING PATIENTS

- Partnerships for advocacy & Patient support with government & non-governmental organizations to enhance disease awareness and early detection.



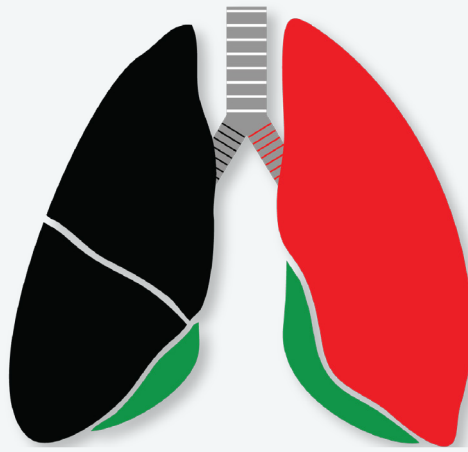
ENABLING ACCESS TO MEDICINES

- Innovative access solutions and key partnerships for sustainable health equity. (e.g NURU PAP in Kenya).



CONFERENCE PARTNERS

No	Institution
1	Ministry of Health (MOH)- Division of Tuberculosis and Other Lung Diseases (DTLD)
2	Respiratory Society of Kenya (ReSoK)
3	Centre for Health Solutions Kenya (CHS)
4	Amref Health Africa in Kenya (AMREF)
5	Kenya Medical Research Institute (KEMRI)
6	Stop TB Partnership- Kenya
7	Kenyatta National Hospital (KNH)
8	African Institute of Development Studies (AFIDEP)
9	Clinton Health Access (CHAI)
10	Population Services Kenya (PSK)
11	The Light Consortium
12	World Health Organization (WHO)
13	EPCON
14	County Government of Kwale
15	ASTRAZENECA
16	CEPHEID
17	QURE.AI
18	CIPLA
19	Glenmark Pharma
20	Ancool Technology Co. Ltd
21	Zydus Lifesciences (Kenya)
22	Ultra Lab Ea
23	Msg Media
24	Britsel International
25	Pulmonary Rehabilitation
26	Abbott (DPWorld)
27	Beximco Pharma (Madawa)
28	Cosmos Pharma
29	Cepheid
30	QURE.AI
31	Chemoquipp



**KENYA INTERNATIONAL SCIENTIFIC
LUNG HEALTH CONFERENCE**

KISLHC

Programme

KENYA INTERNATIONAL SCIENTIFIC LUNG HEALTH CONFERENCE (KISLHC)

Theme:

“From Detection to Recovery: Integrated Pathways & Patient-Centered Innovations in Lung Health”

Organized by:

Respiratory Society of Kenya (ReSoK) and other technical partners.

Conference Secretariat

Kenya International Scientific Lung Health Conference (KISLHC)

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Email: respiratorysockenya@gmail.com, info@resok.org

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MEMBERS OF THE TB AND LUNG HEALTH CONFERENCE 2025 ORGANIZING COMMITTEE

1.	Chakaya Muhwa	-	Chair, Organizing Committee – ReSoK
2.	Nkirote Mugambi-Nyaboga	-	Chair, Scientific Committee – Centre for Health Solutions Kenya
3.	Joseph Aluoch	-	Patron, ReSoK
4.	Brenda Mungai	-	African Institute for Development Policy (AFIDEP)
5.	Immaculate Kathure, OGW	-	NLTD-P
6.	Aiban Ronoh	-	National TB Program
7.	Adano Godana	-	National TB Program
8.	Drusillah Nyaboke	-	National TB Program
9.	Felix Mbetera	-	National TB Program
10.	Edel Sakwa	-	African Institute for Development Policy (AFIDEP)
11.	Wanjiku Kagima	-	KNH/ReSoK
12.	Andrew Owuor	-	KNH
13.	Evaline Kibuchi	-	Stop TB Partnership
14.	Jane Ong'ang'o	-	CRDR-KEMRI
15.	Chrispine Okoth	-	ReSoK
16.	Geoffrey Okallo	-	KISLHC
17.	Rhoda Pola	-	ReSoK
18.	Asiko Ongaya	-	CRDR-KEMRI
19.	Evans Amukoye	-	CRDR-KEMRI
20.	Felix Mbetera	-	NLTD-P
21.	Alfred Itunga	-	Centre for Health Solutions Kenya (CHS)
22.	Joshua Limo	-	PSK Kenya
23.	Grace Kwamboka	-	Centre for Health Solutions Kenya (CHS)
24.	Wandia Rose	-	Centre for Health Solutions Kenya (CHS)
25.	Boaz Ouma	-	Centre for Health Solutions Kenya (CHS)
26.	Salim Masoud	-	KU
27.	Claire Kamau	-	Avenue /ReSoK
28.	Joan Kagema	-	KNH /ReSoK
29.	Justus Simba	-	JKUAT
30.	Everlyne Agisa	-	Respiratory Society of Kenya (ReSoK)
31.	Beatrice Agesa	-	Respiratory Society of Kenya (ReSoK)
32.	Moses Alembi	-	Respiratory Society of Kenya (ReSoK)

MEMBERS OF CONFERENCE SECRETARIAT

1. Geoffrey Okallo
2. Chrispine Okoth
3. Rhoda Pola
4. Alfred Itunga
5. Felix Mbetera
6. Moses Alembi
7. Edel Sakwa
8. Boaz Ouma
9. Antonnet Otieno
10. Beatrice Agesa
11. Esther Otwona
12. Denish Garure

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MESSAGE FROM THE CHAIR OF THE CONFERENCE ORGANIZING COMMITTEE



It is my great pleasure to extend a warm welcome to all delegates and participants to the 7th Kenya International Scientific Lung Health Conference. This year's conference takes place in Diani, Kwale County, a beautiful Kenyan coastal destination renowned for its pristine beaches and warm hospitality. It brings together Kenyan and international scholars, researchers, clinicians, nurses, laboratory scientists, public health practitioners, lung health advocates, policymakers, and other healthcare professionals to network, learn, disseminate new knowledge, share experiences, and collectively shape the future of lung health in Kenya and beyond.

There has never been a more important time to focus on lung health. Acute respiratory infections remain among the leading causes of death worldwide, particularly among children in low- and middle-income countries, including Kenya. Tuberculosis continues to pose a major public health challenge, while the threat of emerging respiratory pathogens with pandemic potential remains ever present. At the same time, non-communicable respiratory diseases such as asthma, chronic obstructive pulmonary disease (COPD), interstitial lung diseases, and lung cancer are placing an increasing health, social, and economic burden on individuals, families, and health systems.

These challenges are being driven by multiple interacting risk factors. Air pollution has emerged as one of the most significant threats to lung health, contributing to a wide spectrum of infectious and non-infectious respiratory diseases. Climate change is further amplifying these risks by worsening air quality, increasing exposure to allergens and influencing the transmission and severity of respiratory infections. The scale of these challenges is daunting, but it also presents an opportunity for innovation, collaboration, and decisive action. We have been forewarned, and therefore we must be forearmed.

The theme of this year's conference, "From Detection to Recovery: Integrated Pathways and Patient-Centered Innovations in Lung Health," reflects our commitment to looking beyond today's challenges. Throughout the conference, we will explore how advances in science, technology, policy, and clinical practice can be translated into integrated, patient-centred approaches that improve prevention, diagnosis, treatment, rehabilitation, and long-term care.

Our Scientific Committee has developed an outstanding programme featuring distinguished local and international faculty who will share the latest advances in research, clinical practice, public health, and health systems strengthening. I am confident that the conference will stimulate thoughtful discussion, foster new collaborations, inspire innovation, and ultimately contribute to better lung health for our communities.

I wish to express my sincere appreciation to our sponsors, partners, exhibitors, speakers, moderators, volunteers, and members of the Conference Organizing and Scientific Committees. Your commitment, generosity, and countless hours of hard work have made this conference possible. We are also deeply grateful to all delegates whose participation enriches the scientific discussions and strengthens our shared commitment to advancing lung health.

I sincerely hope that you will find the conference intellectually stimulating, professionally rewarding, and personally enjoyable. I also encourage you to take time to experience the unique beauty, culture, and hospitality of Diani and the Kenyan coast.

On behalf of the Conference Organizing Committee, I thank you for your participation and wish you a productive and memorable conference.

Karibu Diani!

Prof. Chakaya J. Muhwa
Chair, Conference Organizing Committee
7th Kenya International Scientific Lung Health Conference

A WARM WELCOME FROM THE SCIENTIFIC COMMITTEE



Dear Colleagues, Partners, and Friends of Lung Health,
On behalf of the Scientific Committee, it's my great pleasure to invite you all to the 7th Kenya International Scientific Lung Health Conference (KISLHC 2026), running from 5th to 8th August 2026 at the Diani Reef Beach Hotel on Kenya's Kwale coast. Whether you are joining us from a county hospital, a research institution, a community group or a partner organisation, we are truly excited to have you join us.

This year our theme is "From Detection to Recovery: Integrated Pathways and Patient-Centered Innovations in Lung Health." The idea behind this is simple. Every person who struggles to breathe deserves care throughout their journey, from the first cough, through their recovery and beyond. That

care should be integrated, evidence-informed and must be built around the patient, not the disease. From Tuberculosis, childhood pneumonia, asthma, COPD and lung cancer, respiratory illnesses still falls heaviest on the most vulnerable. This conference exists to help change that.

Over four days, we have curated a programme designed both to inspire and to equip. You can look forward to high-level plenaries, focused symposia, pre-conference skills building workshops, and vibrant oral and e-poster sessions showcasing initiatives, and the very best new science from Kenya and beyond. The topics span early detection and diagnostic innovation, integrated TB and respiratory care, digital health, sustainable financing, post-TB rehabilitation, and the powerful voices of patients and communities themselves. Alongside the science, you will find space to reconnect with old colleagues, forge new partnerships, and celebrate excellence at our awards ceremony and gala.

Great ideas rarely show up fully formed; they are sparked in conversations between people who care. So I encourage you all to arrive curious, ask the difficult questions, share your work generously, and leave with at least one collaboration you did not have before. It is our hope that the ideas, conversations and lessons learned in Diani will travel far and wide, but most importantly that these lessons will translate into practice within our clinics, our laboratories, the way we conduct research and ultimately impact the lives of the people we serve.

So, on behalf of the Scientific Committee, karibu and welcome all. Let us think boldly, learn generously, and help the world breathe a little easier, together.

Warm regards,



Dr. Nkirote Mugambi-Nyaboga
Chair, Scientific Committee

Kenya International Scientific Lung Health Conference (KISLHC) 2026



Distinguished delegates, partners and colleagues,

On behalf of the Ministry of Health, it is my honour to welcome you to the 7th Kenya International Scientific Lung Health Conference.

I begin by thanking H.E. Governor Fatuma Achari and the leadership of the County Government of Kwale, the Department of Health Services, the County Health Management Team, and the people of Kwale for hosting us so warmly in Diani. Under devolution, lung health services are delivered by counties. Convening this conference at the coast is therefore deliberate: national strategy is only as strong as county implementation, and Kwale's hospitality has made this gathering possible.

This year's theme describes precisely the shift the Ministry is asking of all of us. The person who walks into a dispensary in Kinango or Lungu Lungu arrives with a cough, not with a diagnosis. That cough may be tuberculosis, asthma, COPD, pneumonia, post-TB lung disease, or lung cancer. When our systems recognise only one of these, we fail everyone else at the door. Our Programme's own mandate of tuberculosis, leprosy and lung disease anticipated this integration and our task now is to make integration of services a reality in every facility.

Integration is also a matter of arithmetic. The evolving financial landscape means that we must do far more with what we ourselves own: one chest X-ray for multiple conditions, one oxygen system, one laboratory network, one community health promoter, one referral pathway, one data system. Integration does not dilute any response, it is how we protect hard-won TB gains while extending their reach. Sustaining this will depend on domestic financing, on the Social Health Authority, and on primary health care. I therefore urge you all to bring hard questions to the sessions on financing, policy and health systems.

We meet at a moment of unusual promise. AI-enabled chest X-ray screening is moving into counties and closer to underserved populations, near point-of-care molecular testing and shorter and safer drug-resistant TB regimens are now a reality. Increased access to spirometry and point-of-care ultrasound all stand to change what a district facility can do, and it is our hope that these innovations reach the patient furthest from us.

Above all, listen to the patient and community voices that open and close this conference. They are the measure of whether any of our interventions are working. It is our commitment as a Ministry to carry what you resolve here into policy and practice.

Karibuni Kwale.

Dr. Immaculate Kathure, OGW

Head, National Tuberculosis, Leprosy and Lung Disease Program Ministry of Health, Kenya

PROGRAM AT A GLANCE

SCIENTIFIC PROGRAM	
Theme: “From Detection to Recovery: Integrated Pathways & Patient-Centered Innovations in Lung Health”	
Day 1: Wednesday 5th Aug 2026	Pre-Conference
7.00am - 6.00pm	Registration / Exhibitions (Venue: Pre-Function Area)
8.30 - 4.00pm	Skills Building Workshops
	Workshop 1: Writing Science That Matters: From Rigorous Research to Real-World Impact (Venue: Shark 1)
	Workshop 2: Getting Spirometry Right: Quality, Technique and Interpretation (Venue: Octopus)
	Workshop 3: Pleural and Advanced Bronchoscopy (Venue: CGTRH) Monday 3rd - Wednesday 5th Aug
	Workshop 4: Are we on track to END TB: Innovations in screening and diagnosis (Venue: Shark 2)
	Workshop 5: Diagnosing the Invisible: Advancing Laboratory Capacity for Lung Health (Venue: Sake 1)
10.30 - 11.00am	Tea / Coffee Break
1.00 - 2.00pm	Lunch
4.00 - 4.30pm	Tea / Coffee Break
4.30 - 6.30pm	Plenary 1: Opening Ceremony (Venue: Shark 1)
	Opening Address and Welcome: Chair-Kenya Scientific Lung Health Conference Planning Committee and ReSoK
	Ministry of Health Remarks: Head, Division of Tuberculosis and Other Lung Diseases (DTLD)
	Speaker 1: The Patient Voice in Lung Health: Insights from Lived Experience Across the Care Continuum
	Speaker 2: Scientific Keynote address - Advancing age-and gender responsive care in Lung Health
	Speaker 3: County Government Representative: Opening Address and Official Opening of session
	Vote of Thanks to all sponsors and delegates
6.30 – 8.00pm	Cocktail
End of Day 1	

Day 2: Thursday 6th Aug 2026	Main Conference – Day 1
7.00am - 6.00pm	Registration / Exhibitions (Venue: Pre-Function Area)
7.00am - 8.00am	Breakfast Sessions
8.30 - 10.00am	Plenary 2: Invisible Exposures Across the Lifespan: Climate and Environmental Perspectives on Asthma & COPD (Venue: Shark 1)
	Topic 1: Breathing Unequally: Why Social Determinants of Health Must Be Central to Lung Disease Management
	Topic 2: Breathing a Changing Climate: Air Quality and Climate-Driven Risks to Lung Health
	Topic 3: Integration of Health into Climate policies and Actions in Africa: Examining current framings and their implications
	Topic 4: New Habits, New Harms: Vaping and Environmental Smoke Exposure in Youth
	Topic 5: Asthma Care in Practice: Why Device Matters
10.00 - 11.00am	E-Poster session – 1 (Venue: Pre-Function Area)
11.00 - 11.30am	Tea / Coffee Break

11.30 - 1.00pm	Symposium 1 - Lung Health Integration		
	<u>Track A - Community & Primary Health Care for Lung Health</u> (Venue: Shark 2)	<u>Track B - Telemedicine & Digital Health for Lung Health</u> (Venue: Octopus)	<u>Track C - Lung Health Integration with Other Diseases</u> (Venue: Shark 1)
	1. (Abstract) - Prenatal exposure to polycyclic aromatic hydrocarbons and birth outcomes in a pregnancy cohort in Nairobi, Kenya 1. Community-first approaches in PHC	1. Telemedicine models and their downside, lessons learnt from facilities	1. Integration: The intersection between mental health and lung diseases
	2. Integrating services in Primary Health Care- Snapshot of global guidance	2. AI-enabled Chest X-ray diagnostics: Kenya's progress and successes	2. HIV and Lung Health
	3. Integrating TB and chronic respiratory disease at PHC: Updates from Itara	3. (Abstract) - Chest CT findings in Kenyan children and adolescents with HIV and chronic lung disease	3. Diabetes and lung health
	4. Strengthening community health systems for Lung Health	4. Digital/ electronic patient records & virtual care (consider changing AI-enabled chest X-ray in paediatrics)	4. (Abstract) - Tuberculosis-associated hyperglycaemia: Temporal dynamics and TB treatment outcomes in individuals not previously diabetic
1.00 - 2.00pm	5. Lung health service integration into routine PHC- lessons, best practices and Kenya's wins		
	Lunch		
2.00 - 3.30pm	<u>Plenary 3: Growing Lungs, Lifelong Impact: Lung Health Across the Life Course</u> (Venue: Shark 1)		
	Topic 1: Starting Before the First Breath: Early-Life Determinants of Lung Health: Nutrition, Development, and Prematurity		
	Topic 2: Optimising Paediatric Lung Health in Asthma and Chronic Airway Diseases		
	Topic 3: When Sleep Disrupts Breathing: Recognising and Managing Paediatric Obstructive Sleep Apnoea		
3.30 - 3.40pm	Topic 4: Beyond Acute Care: Long-Term Management and Ventilatory Support in Children with Chronic Respiratory Failure		
	Health Break and Transition to Symposia		

Symposium 2 - Innovative approaches in TB and Lung health			
3.40 - 5.10pm	<u>Track A - From Data to Decisions: AI, Predictive Modelling & Digital Innovation in Lung Health (Venue: Shark 2)</u>	<u>Track B - Innovations in Lung Health care and prevention (Venue: Shark 1)</u>	<u>Track C - Laboratory Systems & Diagnostics for Lung diseases (Venue: Octopus)</u>
	1. Breaking Data Silos: Integrating and Sharing Lung Health Data for Impact	1. Utility of point-of-care ultrasound (POCUs) in lung health	1. From the Laboratory to the patients’ beside: Near Point of Care Diagnostics
	2. Digital Tools on the Frontlines: Application among Health Workers, Schools & Communities	2. Next-generation vaccines for other lung health conditions, e.g, RSV, PCV, Maternal immunization	2. Faster, Smarter, Integrated: Multiplexing and Predictive Models in Diagnostics
	3. Seeing Ahead: How AI and Predictive Modelling Are Transforming Lung Health	3. New TB Vaccine development	3. Breathing New Life into Respiratory Diagnostics with AI
	4. (Abstract) - Utilization of Digital TB Screening Tool (Tibu-Lite App) to Improve TB Case Detection: A Case of Eight Sub-Counties in Nairobi	4. (Abstract) - Diagnostic Yield of Spirometry in Clients with Respiratory Symptoms and Chest X-Ray CAD Scores <40 in Ruaraka Sub-County	4.Organization of lab systems for AMR
			5. Mycological investigations in Lung diseases
5.10 - 5.30pm	Tea / Coffee Break		
5.30 - 7.00pm			
End of Day 2			

DAY 3: FRIDAY 7 TH AUG 2026	
Main Conference – Day 2	
7.00am - 6.00pm	Registration / Exhibitions (Venue: Pre-Function Area)
7:00am - 8:00am	Breakfast Sessions
8.30 – 10.00am	<u>Plenary 4: Advances in Lung Cancer (Venue: Shark 1)</u>
	Topic 1: Case presentation - (patient identified with Lung nodule at TB clinic)
	Topic 2: Management of Lung Nodules
	Topic 3: Lung cancer: Modern Classification and evidence based interventions
	Topic 4: RESOK-AstraZeneca partnership program (Diagnostics and Navigation)
10.00 - 11.00am	E-Poster session – 2 (Venue: Pre-Function Area)
11.00 - 11.30am	Tea / Coffee Break

11.30 - 1.00pm	Symposium 3 - Comprehensive management of lung diseases: Prevention, diagnosis, treatment and rehabilitation		
	<u>Track A - Practical Management of Paediatric Respiratory Diseases</u> (Venue: Shark 2)	<u>Track B - Comprehensive Lung Disease Management in Adult</u> (Venue: Shark 1)	<u>Track C - Managing Chronic Respiratory Symptoms: Assessment and Rehabilitation</u> (Venue: Octopus)
	1. Bronchiolitis: Practical Assessment and Day-to-Day Management	1. Updates on management of pneumonia	1. Approach to Chronic Cough
	2. Childhood Pneumonia: Diagnosis, Severity Assessment, and Treatment Decisions	2. Updates in Asthma management (Gina 2026 Guidelines)	2. Breathing patterns, disorders, and breathlessness
	3. Congenital Lung Disorders: Recognition and Initial Management in Paediatric Practice	3. Updates in COPD management	3. Pulmonary Rehabilitation
	4. Challenges with diagnosis of childhood tuberculosis	4. The Role of nurses in Respiratory care	4. Cystic Fibrosis / Prevalence / Diagnostic / Management / Global impact (disease burden)
		5. (Abstract) - Determinants of Delayed Diagnosis in Kenyan Lung Cancer Patients: Health-Seeking Behaviors and Health System Barriers	5. (Abstract) - Thoraco-abdominal Point -of - care Ultrasound (POCUS)patterns in children with presumptive tuberculosis
1.00 - 2.00pm	Lunch		
2.00 - 3.30pm	<u>Plenary 5: Care That Fits: Designing Patient-Centered TB & Lung Health Pathways</u> (Venue: Shark 1)		
	Topic 1: Screening at Scale: What We Learned About Gender and Missed Populations in South Africa’s 5 million End TB Campaign		
	Topic 2: When Care Doesn’t Fit: Understanding Men’s Disengagement from TB Care Pathways		
	Topic 3: “I Need Someone Who Can Understand Me”: Centering Youth Voices in TB Care Delivery		
	Topic 4: Designing with Communities: Co-Creating a Gender-Responsive TB Interventions		
3.30 - 3.40pm	Health Break and Transition to Symposia		
3.40 - 5.10pm	Symposium 4 - Navigating Complexity in Lung Health: Systems Resilience, Rare Diseases & Advanced Care		
	<u>Track A - Under Pressure: Health System Resilience and Emerging Threats in Lung Health</u> (Venue: Shark 2)	<u>Track B - Uncommon Diagnoses, Complex Care: Advances in Rare Lung Diseases</u> (Venue: Shark 1)	<u>Track C - Advanced Paediatric Respiratory Care & Multisystem Lung Health</u> (Venue: Octopus)
	1. Innovating Under Pressure: Hospital-Based Care Models for Resilient Lung Health Systems	1. Unravelling Interstitial Lung Diseases: What’s New in Diagnosis and Management	1. Clinical Use of Non-Invasive Ventilation in Paediatric Respiratory Failure
	2. Resistant Pathogens, Fragile Systems: AMR and Lung Health in LMICs	2. Systemic Disease, Pulmonary Impact: Rheumatological Lung Involvement	2. Respiratory Morbidity and Lung Health in Children with Cerebral Palsy
	3. Misinformation as a Threat to Global Lung Health	3. Bronchiectasis Revisited: Diagnosis, Treatment, and Long-Term Management	3. Pulmonary Complications of Sickle Cell Disease in Children
	4. (Abstract) - Strengthening Health Systems for Improved Lung Health Outcomes in Healthcare Facilities	4. (Abstract) - The Prevalence and Associations of Interstitial Lung Disease in Connective Tissue Disease Patients at Kenyatta National Hospital	4. The Intersection of genetics and complex lung diseases in childrenS
5.10 - 5.30pm	Tea / Coffee Break		
End of Day 3			

DAY 4: SATURDAY 8 TH AUG 2026			
Main Conference – Day 3			
7.00am - 6.00pm	Registration / Exhibitions (Venue: Pre-Function Area)		
7.00am - 8.00am	Breakfast sessions		
8.30 – 10:00am	Plenary 6: From Progress to Promise: Kenya's Vision for TB & Lung Health (Venue: Shark 1)		
	Topic 1: Taking Stock of TB in Kenya: Where We Are and Where We're Going		
	Topic 2: Changing the Story for Children: Advances in Childhood TB Care		
	Topic 3: The role of SHA/SHIF in Lung health		
	Topic 4: TB and Drug resistance		
	Topic 5: From TB Control to Integrated Lung Health: Key considerations for Low Income Countries		
10.00 - 10.30am	Tea / Coffee Break		
10.30 - 12.30pm	Symposium 5 - Making Lung Health Work: Prevention, Financing & Systems for Impact		
-	<u>Track A - Policy, Financing & Health Economics</u> (Venue: Shark 2)	<u>Track B - TB Treatment & Prevention</u> (Venue: Shark 1)	<u>Track C - Policies shaping lung health integration</u> (Venue: Octopus)
	1. What Does Domestic Financing for health really Mean?	1. TB Preventive therapy Updates; TPT for DRTB and 3HP for children	1. Nurses' Role in Long-Term Oxygen Therapy (LTOT)
	2. Investing Wisely in Lung Health: Considerations for prioritizing Cost-Effective Interventions	2. TB vaccine pipeline: preparing countries for uptake	2. Community participation in long term oxygen therapy
	3. Policies shaping for lung health integration	3. Novel TB treatment regimens	3. The role of Nutrition in Lung Health
	4. (Abstract) - Using Bayesian latent class models to evaluate tuberculosis diagnostics in a pediatric cohort study in Kenya	4. (Abstract) - Comparative analysis of Treatment Outcomes for Different Drug-Resistant Tuberculosis regimen in Kenya, 2016 – 2022	4. Strengthening supply chain management for lung health
			5. (Abstract) - Towards Early Detection & Integrated Care: Factors Associated with Delayed Pulmonary Tuberculosis (PTB) Diagnosis Among School-Going Children and Adolescents in Makueni County, Kenya
12.30 - 1.30pm	Plenary 7: Closing Ceremony (Venue: Shark 1)		
	Opening Remarks		
	Topic 1. Patient Voice: From Dialogue to Reality: What Patients Really Need from Lung Health Systems		
	Topic 2. Community Voice: Nothing About Us Without Us: Centering Communities in Lung Health Solution		
	Topic 3. Keynote Address: AI in Lung Health: From Innovation to Impact—Opportunities, Responsibilities, and the Path Forward		
	Chair Scientific Committee: Highlights and Reflections from the Scientific Conference Proceedings		
	Chair Planning Committee: Way Forward; From Commitments to Action-Key Recommendations, and Strategic Priorities for Lung Health		
	Awards		
1.30 - 2.30pm	Lunch		
	End of Conference - Day 4		

FULL SCIENTIFIC PROGRAM

DAY 1 - WEDNESDAY 5TH AUGUST, 2026

Venue: Diani Reef Beach Hotel, Kwale County, Kenya

Scientific Duty Officer: Joshua Limo (Kenya)

7:00am-6:00pm

Registration - Diani Reef Beach Hotel, Kwale County, Kenya

Coordinators: Conference Secretariat

Exhibitions (Venue: Pre-Function Area)

8:30am-4:00pm: Pre-Conference Skills Building Workshops:

Skill Building Workshop 1

Topic: Writing Science That Matters: From Rigorous Research to Real-World Impact (Venue: Shark 1)

Time	Session	Purpose	Key Topics	Facilitators
8:30 – 8:45	Registration & Arrival	Participant onboarding	• Registration	Team Lead
			• Interactive introductions (facilitators & participants)	
9:00 – 9:15	Opening Session	Set context and expectations	• Welcome remarks • Workshop overview • Objectives and expectations	Team Lead
9:00 – 9:30	Session 1: Quantitative & Qualitative	Strengthen study design and methodological rigor	• Quantitative approaches for lung health and program data • Qualitative and participatory methods	Adano Godana
			<i>Visual & participatory tools (Photovoice, River of Life, Stepping Stones, Pizza & Spider diagrams)</i> <i>Practical session on visual tools</i>	Rhoda Pola
9.30– 10:15	Research Methods in Lung Health		• Analysis and presenting qualitative results (tables, figures, qualitative quotes)	Alice Awinja
10.15- 10:45			• Q&A	
10:45 – 11:15	Tea / Coffee Break			
11:15 – 1:00pm 12:55-01:10	Session 2: Scientific Writing – From Abstract to Manuscript	Equip participants to write clearly and strategically	• Structuring abstracts and manuscripts (IMRAD)- Writing introductions, methods, results, and discussion • Responsible use of AI in scientific writing • Publication and editorial review process • Reference management tools (Zotero, Mendeley) • Q&A	Aiban Ronoh & Godano Adano Dr. Irungu Karuga Dr. Jane Ong’ang’o Rhoda Pola
1:10 – 2:00	Lunch Break			



2:00 – 2:30	Session 3: Research Communication & Policy Impact	Extend research impact beyond journals	• Translating research into policy-relevant messages	Dr. Nurudeen Alhassan and Aiban Ronoh
2:30-2:45			• Writing policy briefs and technical summaries	
			• Conference presentations (oral & posters)	
			• Q&A	
2:45 – 3:45	Session 4: Science Communication for Wider Audiences	Build confidence in public and media engagement	• Digital science communication (social media, blogs, visual abstracts)	Edel Sakwa
			• Science storytelling to improve TB and Lung health communication (comics & visuals)	Boaz Ouma
			• Media engagement (Radio, TV, non-expert audiences)	Felix Mbetera
			• Q&A	
3:45 – 4:00	Wrap-Up & Key Takeaways	Consolidate learning	• Key messages from the day	Workshop Leads
			• Practical next steps	
			• Closing remarks	

Workshop Conveners:

- Dr. Jane Ong'ango
- Rhoda Pola
- Godana Adano

Skill Building Workshop 2

Topic: Getting Spirometry Right: Quality, Technique and Interpretation

(Venue: Octopus-Opposite Hotel reception)

Time	DESCRIPTION	Facilitators
08:00-08:30	Registration & Welcome	
08:30–08:45	Welcome & Introduction	Rose Wandia
08:45–09:00	General overview of spirometry	Joan Kagema
09:00–09:15	Quality Assurance & Quality Control	Isaac Kibet
09:15–09:30	Preparing for spirometry: Indications & contraindications	Joan Kagema
09:30–09:45	Spirometry reference equations: what to pick and why?	Moses Mureithi
09:45–10:00	The spirometry procedure	Susan Wainaina
10:00-10:30	TEA BREAK	
10:30-10:50	Understanding the Spirogram. Loops & hoops. What does it all mean?	Sammy Gitonga
10:50-11:20	Spirometry validation-acceptability, repeatability, usability. Test Grading. Best test.	Susan Wainaina
11:20–11:40	Normal vs Abnormal Results. Interpretation and Grading z-scores	Dr. Salim Masoud
11:40–12:00	Bronchodilator Responsiveness Testing	Susan Wainaina
12:00-12:45	LUNCH BREAK	All Facilitators
12:45-13:35	Practical Station 1: Calibration demonstration & practical for attendees	Joan Kagema
13:35–14:20	Practical Station 2: The procedure demonstration & practical for attendees	Sammy Gitonga
14:20–15:05	Practical Station 3: Data validation: 10 steps to checking your spirometry	Isaac Kibet
15:05–15:55	Practical Station 4: Case studies for interpretation	Moses / Isaac
15:55–16:30	Questions, final comments and close	Rose Wandia
16:30	THE END	

Workshop Conveners:

- Joan Kagema

Skill Building Workshop 3

Topic: Pleural and Advanced Bronchoscopy

Venue: Coast General Teaching and Referral Hospital (CGTRH Monday 3rd - Wednesday 5th Aug) skills lab

DAY 1: MONDAY 3RD AUGUST

Basics, Fluids, and Infection			
Focus:	<i>Mastering the Seldinger technique, ultrasound fundamentals, and managing infected spaces</i>		
Time	Session Type	Topic / Activity	Speaker
08:30 - 09:00	Registration	Welcome & Coffee	
09:00 - 09:45	Theory 1	The Infected Space: Evidence-based management of Parapneumonic Effusions and Empyema	[Eihab Bedawi]
09:45 - 10:30	Theory 2	Fibrinolytic Therapy: Who, when, and how (MIST-2 protocols)	[Najib Rahman]
10:30 - 11:00	Break	Morning Refreshments & Transition	
11:00 - 12:00	Theory 3	The Leaking Lung: Management of Pneumothorax and Persistent Air Leaks (PAL)	[Rob Hallifax]
12:00 - 13:00	Lunch	Networking & Hands-on Station Briefing	
13:00 - 14:00	Hands-On Track A/B	Station 1: Thoracic Ultrasound (TUS) – Identifying landmarks & safe zones	[Viswesvaran, Wanjiku Kagima, Abdulaziz Mahmoud, Salim Masoud]
		Station 2: Ultrasound-guided closed pleural biopsy (Abrams needle)	
14:00 - 15:30	Hands-On Track A/B	Station 1: The Seldinger Technique – Step-by-step wire-guided chest drain insertion	[Viswesvaran, Naveed Merali, Peter Waweru, Muhindi Wanjugu]
		Station 2: Indwelling Pleural Catheters (IPC) – Tunneling & long-term care	
15:30 - 16:30	Case Study	Vignette Discussion: Complications of chest drains and troubleshooting the 'stuck' wire	[Hans Lee, Viswesvaran]
16:30 - 17:00	Wrap-up	Day 1: Q&A and Feedback	[Viswesvaran, Andrew Owuor, Muhindi Wanjugu]

DAY 2: TUESDAY 4TH AUGUST

Malignancy, Advanced Access, and Surgery			
Focus:	<i>Indwelling catheters, biopsies, and knowing when to call the surgeons</i>		
Time	Session Type	Topic / Activity	Speaker
09:00- 09:40	Theory 4	The Malignant Space: Management of MPE – IPC vs. Pleurodesis	[Rakesh Pancha, Viswesvaran]
09:40- 10:40	Theory 5	Surgical Horizons: Indications for VATS, Decortication, and Pleurectomy	[Joseph Mutie]
10:40- 11:05	Break	Morning Refreshments	
11:05- 11:45	Theory 6	Pleurodesis: Chemical agents (Talc) and bedside administration	[David Arnold]
11:45- 13:00	Grand Round	Case Vignette Discussion: Complex MPE cases and multi-disciplinary decision-making	[Viswesvaran]
13:00- 14:00	Lunch	Networking	



14:00- 16:00	Medical Thoracoscopy	Concurrent Tracks:	Lead: [Viswesvaran]
		- Suite A: Semiflexible scope technique & chemical pleurodesis - Suite B: Rigid thoracoscope technique & chemical pleurodesis	Suite A: [Wanjiku Kagima, Abdulaziz Mahmoud, Salim Masoud] Suite B: [Naveed Merali, Peter Waweru, Andrew Owuor]
16:00- 17:00	Research Discussion	Bridging the Evidence Gap: Why LMIC Patients Are Missing from Global Pleural and Bronchoscopy Trials — and What We Can Do About It	[Najib Rahman, Eihab Bedawi, David Arnold, Jeffrey Thiboutot*, Viswesvaran] *Virtual (09:00 Local)
17:00+	Closing	Day 2: Review and Announcements	—

Skill Building Workshop 3

Topic: Pleural and Advanced Bronchoscopy

(Venue: Coast General Teaching and Referral Hospital (CGTRH)) Skills Lab

DAY 3: WEDNESDAY 5TH AUGUST			
	Bronchoscopy, EBUS, and Airway Interventions		
Focus:	Flexible bronchoscopy fundamentals, endobronchial ultrasound (EBUS), and therapeutic airway dilation techniques		
	Optimized Delivery Note: To support pedagogical integrity, core theory sessions are run via high-fidelity pre-recordings in the morning so theories strictly precede practical applications. Virtual faculty log on live for the interactive Q&A Panel in the afternoon when their local time is humane (07:00 AM onwards).		
Time	Session Type	Topic / Activity	Speaker
08:30 - 09:00	Registration	Welcome & Morning Coffee	
09:00- 09:40	Theory 7 (Pre-Recorded)	Flexible Bronchoscopy: Anatomy, indications, contraindications, and pre-procedure assessment	[Aline Zouk] *In-room lead: [Viswesvaran]
09:40- 10:35	Theory 8 (Pre-Recorded)	Endobronchial Ultrasound (EBUS): Principles, nodal staging, TBNA technique, and diagnostic yield	[Christine Argento] *In-room lead: [Viswesvaran]
10:35 - 11:00	Break	Morning Refreshments	
11:00- 11:45	Theory 9 (Pre-Recorded)	Airway Dilation & Stenting: Balloon dilation, rigid bronchoscopy, silicone and metal stent deployment	[Jeffrey Thiboutot] *In-room lead: [Viswesvaran]
11:45 - 12:45	Lunch	Networking & Simulation Briefing	
12:45 - 14:00	3-Way Concurrent Practical Tracks	Suite A: EBUS-TBNA Case (Nodal imaging, needle targeting, ROSE)	Suite A: [Viswesvaran, Andrew Owuor, Muhindi Wanjugu, Peter Waweru]
		Suite B: Airway Dilation Case (CRE Balloon / Rigid Mechanics)	Suite B: [Viswesvaran, Naveed Merali, Abdulaziz Mahmoud, Wanjiku Kagima]
		Station C: Flexible Bronchoscopy Simulator (Navigation, BAL, Biopsy)	Station C: [Salim Masoud]

14:00 - 15:00	Grand Round & Live Global Q&A	Case Vignette Discussion (Complex airway cases, tracheal stenosis, fistulas) trailing into a LIVE Interactive Q&A Panel with international virtual faculty.	**Panel:** [Viswesvaran, Andrew]
			Live Virtual Faculty: [Aline Zouk, Christine Argento, Jeffrey Thiboutot]
			(Virtual local time: 07:00-08:00 AM)
15:00+	Closing & Travel	Certification, Valedictory Remarks, and Departure to Diani	[Andrew Owuor]

Workshop Conveners:

- Dr. Abdulaziz Mahmoud
- Dr. Amir Faraj Tamimy
- Dr. Andrew Owuor
- Dr. Jacqueline Wanjiku Kagima

Skill Building Workshop 4

Topic: Are we on track to END TB: Innovations in screening and diagnosis

Venue: Shark 2

Time	Sessions	SPEAKER
08:00- 08:30	Arrival, Participant Registration, and networking ALL	
08:30- 08:40	Introduction- Workshop objectives and expected outcomes	Drusilla Nyaboke (NTLD-P, Kenya)
08:40 – 09:05	Session 1: Optimizing TB screening strategies in high-burden settings	Prof. Jeremiah Chakaya (RESOK Kenya)
	Are we in track to end TB? Overview of Global TB situation, and gaps in the TB screening, and landscape of innovative screening tools	
09:05- 09:30	How countries can conduct successful TB screening campaigns: Lessons from South Africa End TB Campaign to screen 5 million people	Prof. Norbert Ndjeka (South Africa)
	Session 2: Innovations in TB Diagnostics	
09:30- 09:50	Closing the Diagnostic Gap: Scaling Near-Point-of-Care TB Diagnostics	Dr. Enos Masini (Global Fund)
	Lessons Learned and Key Considerations for Country Roll-Out	
09:50- 10:10	Doing More with Less: Optimizing GeneXpert Through Pooled Sputum Testing	Dr. Steve Wadiga (START4All, Kenya)
10:10- 10:30	The Next Frontier in TB Diagnosis: Emerging Technologies Shaping the Future of Tuberculosis Detection	Asiko Ongaya (KEMRI, Kenya)
10:30- 10:45	Plenary- Reflection/Q&A	
10:40- 11:10	Health Break	All
	Session 3: AI enabled digital CXR screening in lung health	
11:10- 11:30	Introduction to the digital CXR and Computer aided detection (AI) software landscape and role in Lung Health	Dr. Brenda Mungai (AFIDEP, Kenya)
	Introduction to threshold score and outputs from the CAD software	
11:30- 11:50	Computer-Aided Detection in Paediatrics: What Does the Evidence Show So Far?	(Recorded, TBC)
11:50- 12:20	Algorithms to optimize the use of AI-enabled digital chest X-ray (CXR)	Jeremiah Okari / Drusilla Nyaboke (NTLD-P, Kenya)
12:20- 13:00	Hands on Practical sessions on interpretation of scores and CAD output	
13:00 - 14:00	Lunch Break	All



14:00- 14:20	What is the role of radiologists in the AI enabled digital Xray screening algorithms?	Radiologist
14:20- 14:40	Discussions and Q&A	
14:40- 15:40	Practical session: Digital CXRs- Understanding how they work, settings, Maintenance (Small group sessions)	Keziah Gichangi (CHS, Kenya), Radiographers
15:40- 16:00	Q&A	
16:00	End of session	

Workshop Conveners:

- Dr. Brenda Mungai
- Drusilla Nyaboke
- Asiko Ongaya

Skill Building Workshop 5

Topic: Diagnosing the Invisible: Advancing Laboratory Capacity for Lung Health

Venue: Sake 1 - Past large dining area

Time	Session	Topic and Praticals	Key Lead
8:00 – 8:15	Opening Session	Welcome remarks, objectives, housekeeping	Dr. Steve Wandiga
8:15 – 8:45	Introduction to Laboratory Systems and pre workshop questionnaire	Diagnostic pathways, integration, lab role	Zilla Wakio
PRATICAL SESSIONS HANDS ON PRATICAL SESSION			
9:00- 10:15	Microscopy (Other respiratory Bacterial and Fungal pathogens).	Gram staining, lactophenol cotton blue, Indian ink, Calcoflour staininng	Bridget Kimani, Olga Mashedi, Dr. Alice Kanyua
		Specimen handling, microscopy, culture, AST	
10:15 – 10:30	TEA BREAK		
10:30 – 1:00	Culture techniques and identification		Olga Mashedi, Dr. Alice Kanyua, Bridget Kimani
	Serology & Immunological Diagnostics		
	Lunch Break		
1:00 – 1:45	LUNCH BREAK		
2.00 – 3.15	Antimicrobial Resistance (AMR)	Resistance mechanisms, lab detection, surveillance	Olga Mashedi, Dr. Alice Kanyua, Bridget Kimani
	Antifungal drug profile	Microscopy, POC testing, QC exercises	
	Serology & Immunological Diagnostics		
	TEA BREAK		
3:15 – 3:45	Panel Discussion & Case Studies	Diagnostic challenges, collaboration, Q&A	Dr. Steve Wandiga
3:45 – 4:00	Closing Session	Key takeaways, closing	Dr. Steve Wandiga

Workshop Conveners:

- Olga Mashedi
- Dr. Steve Wandiga

10:30am-11:00am	Coffee/Tea Break
1:00pm-2:00pm	Lunch
4:30pm-6:30pm	Opening Ceremony / Plenary 1 (Venue: Shark 1) Cultural Performance - Kayamba Africa Welcome: MC. Dr. Nkirote Mugambi –Nyaboga [2 Min] Opening Address and Welcome: Chair-Kenya Scientific Lung Health Conference Planning Committee and ReSoK - Prof. Jeremiah Chakaya (Kenya) [5 min] Ministry of Health Remarks: Head, Division of Tuberculosis and Other Lung Diseases (DTLD) - Dr. Abdullahi Omar (Kenya) [10 min] Speaker 1: The Patient Voices in Lung Health: Insights from Lived Experience Across the Care Continuum - David Phoya (Kenya) [10 min] Speaker 2: Scientific Keynote address -Advancing age-and gender responsive care in Lung Health - Prof. Bertie Squire (UK) [20 min] Speaker 3: County Government Representative: Opening Address and Official Opening of session - Kwale County [10 min] Vote of Thanks to all sponsors and delegates - MC Dr. Nkirote Mugambi-Nyaboga, Chair Scientific Committee Group Photo MC: Dr. Nkirote Mugambi-Nyaboga (Kenya)
6:30pm-8:30pm	Welcome Cocktail & Networking session MC: Dr. Sam Muga

DAY 2 – THURSDAY 6 TH AUGUST, 2026	
Venue: Diani Reef Beach Hotel, Kwale County, Kenya Scientific Duty Officer: Joshua Limo (Kenya)	
7:00am-6:00pm	Registration - Diani Reef Beach Hotel, Kwale County, Kenya Coordinators: Conference Secretariat Exhibitions (Venue: Pre-Function Area)
7:00am-8:00am	Breakfast sessions
8:30am-10:00am	Plenary 2 (Venue: Shark 1) <u>Topic: Invisible Exposures Across the Lifespan: Climate and Environmental Perspectives on Asthma & COPD</u> Speaker 1: Breathing Unequally: Why Social Determinants of Health Must Be Central to Lung Disease Management (Jeremiah Chakaya, Kenya) Speaker 2: Breathing a Changing Climate: Air Quality and Climate-Driven Risks to Lung Health (Rose Ayikukwei, Kenya) Speaker 3: Integration of Health into Climate policies and Actions in Africa: Examining current framings and their implications (Nurudeen Alhassan, Ghana) Speaker 4: New Habits, New Harms: Vaping and Environmental Smoke Exposure in Youth (Njeri Karianjahi, Kenya) Speaker 5: Asthma Care in Practice: Why Device Matters (Peter Waweru Munyu, Kenya) Chair – Dr. Nkirote Mugambi-Nyaboga (Kenya) Rapporteur - Antonette Otieno (Kenya)

10:00am-11:00am	E-Poster discussions 1 (Venue: Pre-Function Area) (Abstract Posters Nos. EP-01 to EP-44) Coordinators: ??
11:00am-11:30am	Coffee/Tea Break
11:30am-01:00pm	Symposium 1 - Lung health Integration (Venue: Shark 2) <u>Track A: Community & Primary Health Care for Lung Health</u> Speaker 1: (Abstract) - Prenatal exposure to polycyclic aromatic hydrocarbons and birth outcomes in a pregnancy cohort in Nairobi, Kenya (Elizabeth Maleche-Obimbo, Kenya) Speaker 2: Integrating services in Primary Health Care-Snapshot of global guidance (Eunice Omesa, Kenya) Speaker 3: Integrating TB and chronic respiratory disease at PHC: Updates from Itara (Jamilla Meghji, UK) Speaker 4: Strengthening community health systems for Lung Health (Alois Gikunda, Kenya) Speaker 5: Lung health service integration into routine PHC-lessons, best practices and Kenya's wins (Ibrae Umro, Kenya) Chair - Dr. Clarice Ambale (Kenya) Rapporteur – Rose Wandia (Kenya)
	Symposium 1 - Lung health Integration (Venue: Octopus) <u>Track B: Telemedicine & Digital Health for Lung Health</u> Speaker 1: Telemedicine models and their downside, lessons learnt from facilities (Thomas G Ngwiri, Kenya) Speaker 2: AI-enabled Chest X-ray diagnostics: Kenya's progress and successes (Jeremiah Okari, Kenya) Speaker 3: (Abstract) - Chest CT findings in Kenyan children and adolescents with HIV and chronic lung disease (Samuel Otido, Kenya) Speaker 4: Beyond the Algorithm: What it really takes to adopt AI for lung Health screening at scale - Anusha Ravishankar (India) and Others - (QURE.AI) Chair - Dr. Stephen K Macharia (Kenya) Rapporteur - Salome Kariithi (Kenya)
	Symposium 1 - Lung health Integration (Venue: Shark 1) <u>Track C: Lung Health Integration with Other Diseases</u> Speaker 1: Integration: The intersection between mental health and lung diseases (Linet Gwengi, Kenya) Speaker 2: Every Breath Counts: Screening for TB in HIV care. Intergrated guidelines 2026 (Grace Kwamboka, Kenya) Speaker 3: Diabetes and lung health (Philip Owiti, Kenya) Speaker 4: (Abstract) - Tuberculosis-associated hyperglycaemia: Temporal dynamics and TB treatment outcomes in individuals not previously diabetic (Victor Moses Musyoki, Kenya) Chair – Dr. Grace Kaluai (Kenya) Rapporteur - Seth Kagia (Kenya)
1:00pm-2:00pm	Lunch

2:00pm-3:30pm	Plenary 3 (Venue: Shark 1) <u>Topic: Growing Lungs, Lifelong Impact: Lung Health Across the Life Course</u> Speaker 1: Starting Before the First Breath: Early-Life Determinants of Lung Health: Nutrition, Development, and Prematurity (Justus Simba, Kenya) Speaker 2: Optimising Paediatric Lung Health: Care for Asthma and Chronic Airway Diseases (Teresia Njoroge, Kenya) Speaker 3: When Sleep Disrupts Breathing: Recognising and Managing Paediatric Obstructive Sleep Apnoea (Everlyne Agisa Kegode, Kenya) Speaker 4: Beyond Acute Care: Long-Term Management and Ventilatory Support in Children with Chronic Respiratory Failure (Priscilla Ngacha, Kenya) Chair - Dr. Samuel Otido (Kenya) Rapporteur – (Roseline Kinya, Kenya)
3:30pm-3:40pm	Health Break and Transition to Symposia
	Symposium 2 - Innovative approaches in TB and Lung health (Venue: Shark 2) <u>Track A: From Data to Decisions: AI, Predictive Modelling & Digital Innovation in Lung Health</u> Speaker 1: Breaking Data Silos: Integrating and Sharing Lung Health Data for Impact (Drusilla Nyaboke, Kenya) Speaker 2: Digital Tools on the Frontlines: Application among Health Workers, Schools & Communities (Rachael Muinde, Kenya) Speaker 3: Seeing Ahead: How AI and Predictive Modelling Are Transforming Lung Health (Bernadette Nkhata (South Africa) Speaker 4: (Abstract) - Utilization of Digital TB Screening Tool (Tibu-Lite App) to Improve TB Case Detection: A Case of Eight Sub-Counties in Nairobi (Rosemary Mbacio, Kenya) Chair – Drusilla Nyaboke (Kenya) Rapporteur – (Robert Magomere, Kenya)
	Symposium 2 - Innovative approaches in TB and Lung health (Venue: Shark 1) <u>Track B: Innovations in Lung Health care and prevention</u> Speaker 1: Utility of point-of-care ultrasound (POCUs) in lung health (Wanjiku Kagima, Kenya) Speaker 2: Next-generation vaccines for other lung health conditions, e.g, RSV, PCV, Maternal immunization (Christine Chege, Kenya) Speaker 3: Speaker 3: New TB Vaccine development (Videlis Nduba, Kenya and Joy Githua, Kenya) Speaker 4: (Abstract) - Diagnostic Yield of Spirometry in Clients with Respiratory Symptoms and Chest X-Ray CAD Scores <40 in Ruaraka Sub-County (Caroline Wanjiru Macharia, Kenya) Chair - Asiko Ongaya (Kenya) Rapporteur - Maureen Ndunge (Kenya)

	Symposium 2 - Innovative approaches in TB and Lung health (Venue: Octopus) <u>Track C: Laboratory Systems & Diagnostics for Lung diseases</u> Speaker 1: From the Laboratory to the patients' beside: Near Point of Care Diagnostics (Enos Masini, Global Fund) Speaker 2: Faster, Smarter, Integrated: Multiplexing and Predictive Models in Diagnostics (Steve Wandiga, Kenya) Speaker 3: Breathing New Life into Respiratory Diagnostics with AI (Wakio Zilla, Kenya) Speaker 4: Organization of lab systems for AMR (Bridgit Kimani, Kenya) Speaker 5: Mycological investigations in Lung diseases (Olga Mashedi, Kenya) Chair - Kennedy Muimi (Kenya) Rapporteur - Lucy Wanjiku Maina (Kenya)
5:10pm-5:30pm	Coffee/Tea Break
DAY 3 – FRIDAY 7 TH AUGUST, 2026	
Venue: Diani Reef Beach Hotel, Kwale County, Kenya Scientific Duty Officer: Rhoda Pola (Kenya)	
7:00am-6:00pm	Registration - Diani Reef Beach Hotel, Kwale County, Kenya Coordinators: Conference Secretariat Exhibitions (Venue: Pre-Function Area)
8:30am-10:00am	<u>Plenary 4 (Venue: Shark 1)</u> <u>Topic: Advances in Lung Cancer</u> Speaker 1: Case presentation - (patient identified with Lung nodule at TB clinic) (Abdalla Mohamed, Kenya)) Speaker 2: Management of Lung Nodules (Naveed Merali, Kenya) Speaker 3: Lung cancer: Modern Classification and evidence based interventions (Abeid Athman, Kenya) Speaker 4: RESOK-AstraZeneca partnership program (Diagnostics and Navigation) (Wanjiku Kagima, Kenya) Chair – Dr. Andrew Owuor (Kenya) Rapporteur - Elizabeth Mueni (Kenya) (Sponsor – AstraZeneca)
10:00am-11:00am	E-Poster discussions 2 (Venue: Pre-Function Area) (Abstract Posters Nos. EP-3-45 to EP-3-89) Coordinators: Michael Ojiambo Odhiambo & Titus Kiptai
11:00am-11:30am	Coffee/Tea Break

	Symposium 3 - Comprehensive management of lung diseases: Prevention, diagnosis, treatment and rehabilitation (Venue: Shark 2) <u>Track A: Practical Management of Paediatric Respiratory Diseases</u> Speaker 1: Bronchiolitis: Practical Assessment and Day-to-Day Management (Samuel Otido, Kenya) Speaker 2: Childhood Pneumonia: Diagnosis, Severity Assessment, and Treatment Decisions (Everlyne Agisa Kegode, Kenya) Speaker 3: Congenital Lung Disorders: Recognition and Initial Management in Paediatric Practice (Justus Simba, Kenya) Speaker 4: Challenges with diagnosis of childhood tuberculosis (Valens Ngabonziza, Kenya) Chair – Joan Kagama (Kenya) Rapporteur - Morris Maina (Kenya)
11:30am-1:00pm	Symposium 3 - Comprehensive management of lung diseases: Prevention, diagnosis, treatment and rehabilitation (Venue: Shark 1) <u>Track B: Comprehensive Lung Disease Management in Adults</u> Speaker 1: Updates on management of pneumonia (Jeremiah Chakaya, Kenya) Speaker 2: Updates in Asthma management (Gina 2026 Guidelines) (Abdulaziz Mahmoud, Kenya) Speaker 3: Updates in COPD management (Amir Faraj Tamimy, Kenya) Speaker 4: The Role of nurses in Respiratory care (Claire Kamau, Kenya) Speaker 5: (Abstract) - Determinants of Delayed Diagnosis in Kenyan Lung Cancer Patients: Health-Seeking Behaviors and Health System Barriers (Ayikukwei Rose, Kenya) Chair – Dr. Wanjiku Kagima (Kenya) Rapporteur - Annfreshia Wangari (Kenya)
11:30am-1:00pm	Symposium 3 - Comprehensive management of lung diseases: Prevention, diagnosis, treatment and rehabilitation (Venue: Octopus) <u>Track C: Managing Chronic Respiratory Symptoms: Assessment and Rehabilitation</u> Speaker 1: Approach to Chronic Cough (Andrew Owuor, Kenya) Speaker 2: Breathing patterns, disorders, and breathlessness (Valentine Wangui Kei-Muriithi, Kenya) Speaker 3: Pulmonary Rehabilitation (Eric Ouma, Kenya) Speaker 4: Speaker 4. Cystic Fibrosis (CF) / Prevalence / Diagnostic / Management / Global impact (disease burden) - Dr. Salim Masoud (Kenya) Speaker 5: (Abstract) - Thoraco-abdominal Point -of- care Ultrasound (POCUS) patterns in children with presumptive tuberculosis (Nelly Ronoh, Kenya) Chair - Dr. Salim Masoud (Kenya) Rapporteur - James Njuma (Kenya)
1:00pm-2:00pm	Lunch

2:00pm-3:30pm	Plenary 5 (Venue: Shark 1) <u>Topic: Care That Fits: Designing Patient-Centered TB & Lung Health Pathways</u> Speaker 1: Screening at Scale: What We Learned About Gender and Missed Populations in South Africa's 5 million End TB Campaign (Nobert Ndjeka, South Africa) Speaker 2: When Care Doesn't Fit: Understanding Men's Disengagement from TB Care Pathways (Nkirote Mugambi-Nyaboga, Kenya) Speaker 3: "I Need Someone Who Can Understand Me": Centering Youth Voices in TB Care Delivery (Rhoda Pola, Kenya) Speaker 4: Designing with Communities: Co-Creating a Gender-Responsive TB Interventions (Brenda Mungai, Kenya) Chair - Dr. Brenda Mungai (Kenya) Rapporteur - Penina Makena (Kenya)
3:30pm-3:40pm	Health Break and Transition to Symposia
3:40pm-5:10pm	Symposium 4 - Navigating Complexity in Lung Health: Systems Resilience, Rare Diseases & Advanced Care (Venue: Shark 2) <u>Track A: Under Pressure: Health System Resilience and Emerging Threats in Lung Health</u> Speaker 1: Innovative lung health care, while Lung Health Systems are Under Pressure (Peter Waweru Munyu, Kenya) Speaker 1: Resistant Pathogens, Fragile Systems: AMR and Lung Health in LMICs (Eunice Omesa, Kenya) Speaker 3: Misinformation as a Threat to Global Lung Health (Salim Masoud, Kenya) Speaker 4: (Abstract) - Strengthening Health Systems for Improved Lung Health Outcomes in Healthcare Facilities (Mary John Kabuthu, Kenya) Chair - Olga Mashedi (Kenya) Rapporteur - Edward Abuneri (Kenya) Symposium 4 - Navigating Complexity in Lung Health: Systems Resilience, Rare Diseases & Advanced Care (Venue: Shark 1) <u>Track B: Uncommon Diagnoses, Complex Care: Advances in Rare Lung Diseases</u> Speaker 1: Unravelling Interstitial Lung Diseases: What's New in Diagnosis and Management (Abdulaziz Mahmoud, Kenya) Speaker 2: Systemic Disease, Pulmonary Impact: Rheumatological Lung Involvement (Sybil Nakitare, Kenya) Speaker 3: Bronchiectasis Revisited: Diagnosis, Treatment, and Long-Term Management (Jackson Atina, Kenya) Speaker 4: (Abstract) - The Prevalence and Associations of Interstitial Lung Disease in Connective Tissue Disease Patients at Kenyatta National Hospital (Talen Shafashike, Kenya) Chair - Dr. Irungu Karuga (Kenya) Rapporteur - Gladys Omboi (Kenya)

	Symposium 4 - Navigating Complexity in Lung Health: Systems Resilience, Rare Diseases & Advanced Care (Venue: Octopus) <u>Track C: Advanced Paediatric Respiratory Care & Multisystem Lung Health</u> Speaker 1: Clinical Use of Non-Invasive Ventilation in Paediatric Respiratory Failure (Priscilla Ngacha, Kenya) Speaker 2: Respiratory Morbidity and Lung Health in Children with Cerebral Palsy (Samson Gwer, Kenya) Speaker 3: Pulmonary Complications of Sickle Cell Disease in Children (Margaret Wainaina, Kenya) Speaker 4: The Intersection of genetics and complex lung diseases in children (Catherine Mutinda, Kenya) Chair - Dr. Everlyne Agisa (Kenya) Rapporteur - Duncan Barkebo (Kenya)
3:40pm-5:10pm	
5:10pm-5:30pm	Coffee/Tea Break
5.30pm-7:00pm	

DAY 4 – SATURDAY 8 TH AUGUST, 2026	
	Venue: Diani Reef Beach Hotel, Kwale County, Kenya Scientific Duty Officer: Asiko Ongaya (Kenya)
7:00am-6:00pm	Registration - Diani Reef Beach Hotel, Kwale County, Kenya Coordinators: Conference Secretariat Exhibitions (Venue: Pre-Function Area)
8:30am-10:00am	Plenary 6 (Venue: Shark 1) Topic: From Progress to Promise: Kenya's Vision for TB & Lung Health Speaker 1: Taking Stock of TB in Kenya: Where We Are and Where We're Going (Aiban Rono, Kenya) Speaker 2: Changing the Story for Children: Advances in Childhood TB Care (Elizabeth Maleche-Obimbo, Kenya) Speaker 3: The role of SHA/SHIF in Lung health (Daniel Mwai, Kenya) Speaker 4: TB and Drug resistance (Norbert Ndjeka, South Africa) Speaker 5: From TB Control to Integrated Lung Health: Key considerations for Low Income Countries (Paul Wekesa, Kenya) Chair - Dr. Simon Wachira (Kenya) Rapporteur - Stella Omulo (Kenya)
10:00am-10:30am	Coffee/Tea Break

10:30am-12:30pm	Symposium 5 - Making Lung Health Work: Prevention, Financing & Systems for Impact (Venue: Shark 2) <u>Track A: Policy, Financing & Health Economics</u> Speaker 1: What Does Domestic Financing for health really Mean? (Jackson Otieno, Kenya) Speaker 2: Investing Wisely in Lung Health: Considerations for prioritizing Cost-Effective Interventions (Davies Karambi, Kenya) Speaker 3: Policies shaping lung health integration (Jamilah Meghji, UK) Speaker 4: (Abstract) - Using Bayesian latent class models to evaluate tuberculosis diagnostics in a pediatric cohort study in Kenya (Jepherson Mecha, Kenya) Chair - Dr. Brenda Mungai (Kenya) Rapporteur - Claire Njoki (Kenya)
	Symposium 5 - Making Lung Health Work: Prevention, Financing & Systems for Impact (Venue: Shark 1) <u>Track B: TB Treatment & Prevention</u> Speaker 1: TB Preventive therapy Updates; TPT for DRTB and 3HP for children (Ibrae Umro, Kenya) Speaker 2: TB vaccine pipeline: preparing countries for uptake (Nobert Ndjeka, South Africa) Speaker 3: Novel TB treatment regimens (Jeremiah Chakaya, Kenya) Speaker 4: (Abstract) - Comparative analysis of Treatment Outcomes for Different Drug-Resistant Tuberculosis regimen in Kenya, 2016 – 2022 (Esther Wagunya, Kenya) Chair - Rhoda Pola (Kenya) Rapporteur - Rosemary Kiige (Kenya)
	Symposium 5 - Making Lung Health Work: Prevention, Financing & Systems for Impact (Venue: Octopus) <u>Track C: Strengthening Lung Health Systems</u> Speaker 1. Nurses' Role in Long-Term Oxygen Therapy (LTOT) (Joan Kagama, Kenya) Speaker 2. Community participation in long term oxygen therapy (Caroline Sikuku Ndombi, Kenya) Speaker 3. Nutrition and Lung Health - Dorcas Munge (Kenya) Speaker 4: Strengthening supply chain management for lung health (Ernest Mbae, Kenya) Speaker 5: (Abstract) - Towards Early Detection & Integrated Care: Factors Associated with Delayed Pulmonary Tuberculosis (PTB) Diagnosis Among School-Going Children and Adolescents in Makueni County, Kenya (Pius Mutuku, Kenya) Chair - Joshua Limo (Kenya) Rapporteur - Cecelia Wanjiru Ndungú (Kenya)

12.30pm-1:30pm	Plenary 7 (Venue: Shark 1) Closing Ceremony Opening Remarks: MC Speaker 1: Patient Voice: From Dialogue to Reality: What Patients Really Need from Lung Health Systems (Abdala Mwachilea, Kenya) [5 min] Speaker 2: Community Voice: Nothing About Us Without Us: Centering Communities in Lung Health Solutions (Video, Kenya) [5 min] Speaker 3: Keynote Address: AI in Lung Health: From Innovation to Impact—Opportunities, Responsibilities, and the Path Forward (Joseph A Aluoch, Kenya) [20 min] Chair Scientific Committee: Highlights and Reflections from the Scientific Conference Proceedings Chair Planning Committee: Way Forward; From Commitments to Action-Key Recommendations, and Strategic Priorities for Lung Health
	Awards Ceremony: 1. The James Ang'awa Award for Excellence in Advancing Public Health Gains in Lung Health in Kenya (ReSoK Award) 2. The Prof. Job Bwayo Award for Science in Lung Health in Kenya 3. The Tom Arocho Award for commitment and excellence in the coverage of lung health issues in the media 4. The Dr. Joseph Aluoch Young Scientist and Best Abstract Awards 5. The Luceta community Actor Award (Stop TB-Kenya) 6. Top Abstract Contributor Award Official Closing Remarks: Head NTP Master of Ceremony: Dr. Sam Muga (Kenya)
1:30pm-2:30pm	Lunch
	End of Conference - Day 4

LIST OF ORAL ABSTRACTS PRESENTATIONS

DAY 2 (THURSDAY, 6TH AUG 2026):

(OA-02-01 to OA-02-05):

Time	Symposium 1	Speaker
11.00am- 1.00pm	Track A – (Venue: Shark 2) Speaker 5 (OA-02-01)- Prenatal exposure to polycyclic aromatic hydrocarbons and birth outcomes in a pregnancy cohort in Nairobi, Kenya	Elizabeth Maleche-Obimbo
	Track B – (Venue: Octopus) Speaker 4 (OA-02-02)- Chest CT findings in Kenyan children and adolescents with HIV and chronic lung disease	Samuel Otido
	Track C – (Venue: Shark 1) Speaker 4 (OA-02-03)- Tuberculosis-associated hyperglycaemia: Temporal dynamics and TB treatment outcomes in individuals not previously diabetic	Victor Moses Musyoki
	Symposium 2	
3.40pm - 5.10pm	Symposium 2 - Track A – (Venue: Shark 2) Speaker 4 (OA-02-04)- Utilization of Digital TB Screening Tool (Tibu-Lite App) to Improve TB Case Detection: A Case of Eight Sub-Counties in Nairobi	Rosemary Mbacio
3.40pm - 5.10pm	Symposium 2 - Track B – (Venue: Shark 1) Speaker 4 (OA-02-05)- Diagnostic Yield of Spirometry in Clients with Respiratory Symptoms and Chest X-Ray CAD Scores <40 in Ruaraka – Nairobi County.	Caroliene Macharia

DAY 3 (FRIDAY, 7TH AUG 2026):

(OA-03-06 to OA-03-09):

Time	Symposium 3	Speaker
11.00am- 1.00pm	Track B – (Venue: Shark 1) Speaker 4 (OA-03-06)- Determinants of Delayed Diagnosis in Kenyan Lung Cancer Patients: Health-Seeking Behaviors and Health System Barriers	Ayikukwei Rose
11.00am- 1.00pm	Track C – Venue: Octopus Speaker 4 (OA-03-07)- Thoraco-abdominal Point-of-care Ultrasound (POCUS) patterns in children with presumptive tuberculosis.	Nelly Chepkurui Ronoh
Time	Symposium 3	Speaker
3.40pm- 5.10pm	Track A – Venue: Shark 2 Speaker 4 (OA-03-08)- Strengthening Health Systems for Improved Lung Health Outcomes in Health Care Facilities	Mary J. Kabuthu

3.40pm- 5.10pm	Speaker 4 (OA-03-09)- The Prevalence and Associations of Interstitial Lung Disease in Connective Tissue Disease Patients at Kenyatta National Hospital	Taleni Shafashike
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DAY 4 (SATURDAY, 7TH AUG 2026):

(OA-04-10 to OA-04-12):

Time	Symposium 5	Speaker
10.30am- 12.30pm	Track A – (Venue: Shark 2) Speaker 4 (OA-04-10)- Using Bayesian latent class models to evaluate tuberculosis diagnostics in a pediatric cohort study in Kenya.	Jerphason Mecha
	Track B – (Venue: Shark 1) Speaker 4 (OA-04-11)- Comparative analysis of Treatment Outcomes for Different Drug-Resistant Tuberculosis regimen in Kenya, 2016 – 2022	Esther wagunya
	Track C – (Venue: Octopus) Speaker 4 (OA-04-12)- Towards Early Detection & Integrated Care: Factors Associated with Delayed Pulmonary Tuberculosis (PTB) Diagnosis among School-Going Children and Adolescents in Makueni County, Kenya.	Pius. Mutuku

LIST OF E-POSTER PRESENTATIONS

Day 2

(Thursday, 6th Aug 2026): E-Poster Discussion 1 – (10:00am – 11:00am) – (Venue: Pre-Function Area)

EP-2-01 to EP-2--44

Abstract No.	Title	Author
EP-2-1	Clinical and Metabolic Predictors of Tuberculosis Treatment Outcomes: A Longitudinal Analysis in Kiambu County, Kenya	Annfreshia Wangari Maina
EP-2-2	Time to Sputum Smear Conversion in Patients with Bacteriologically Confirmed Pulmonary Tuberculosis in Kiambu County, Kenya	Annfreshia Wangari Maina
EP-2-3	Improving Treatment Outcome in Drug-Resistant Tuberculosis: Predictive Insights from Makueni County, Kenya	Benedict M. Muma
EP-2-4	Predictors of unfavorable treatment outcomes among human immune deficiency patients co-infected with tuberculosis in Bungoma	Robert Magomere
EP-2-5	Whole-Genome Sequencing of Mycobacterium tuberculosis in Western Kenya: Lineage and Phylogeny	Susan Musau
EP-2-6	Trends in Tuberculosis Detection Using GeneXpert: A Data Analysis in Gatanga Sub County-Murang'a, 2023-2025	Cecilia W Ndungu
EP-2-7	Performance of the LF-Lam and Genexpert Test against Culture in TB Diagnosis among Patients with AHD Disease In Makueni County	Rachael Mwongeli
EP-2-8	Patient Characteristics, Treatment Outcomes, and Predictors of Treatment Success in Clinically Diagnosed Versus Bacteriologically Confirmed Tuberculosis in Kenya: Analysis of National Surveillance Data, 2018–2022	Clarice Ambale
EP-2-10	TB-LAMP and Smear microscopy versus Xpert MTB/RIF for TB Diagnosis in HIV-Positive Patients in Kenya	Betty Muriithi
EP-2-11	Correlates of Tuberculosis Treatment Adherence in Igembe North, Meru County, Kenya	Duncan Barkebo
EP-2-12	Assessment of Time to Tuberculosis Diagnosis among Prisoners in Kangeta GK Prison, 2023–2024	Victor Kiruku Gitau
EP-2-13	Leveraging Unique Patient Identifier Prefixes to Enhance TB Case Management in the Kenya-Uganda Border: Lessons from the Tuberculosis Implementation Framework Agreement (TIFA) Project in Kenya	Dennis Oira
EP-2-14	Promoting Occupation health through Tuberculosis education and staff screening using Computer Aided Detection enabled Xrays at Portreitz Subcounty Hospital, 2024	Yusra Faraj
EP-2-15	Clinical Profiles and Therapeutic Outcomes of Drug-Resistant Tuberculosis (DRTB) in Kericho County: A Retrospective Analysis (2025–2026)	Winnie Rotich
EP-2-16	Factors Associated with Mortality among Drug-Resistant TB Patients in Kenya: A Retrospective Cohort Study in Ten Counties	Seth Kagia
EP-2-17	Clinical Outcomes and Diagnostic Challenges of Pediatric Tuberculosis in Kenya: 2014 Review	Maina Lewis Ahmed

EP-2-18	A Higher Mortality in HIV Positive Rifampicin Resistant TB Patients: A Retrospective Analysis from Kilifi County, Kenya	Deche Sanga
EP-2-19	Targeted community outreach integrating AI-assisted chest X-ray improves tuberculosis case detection among high-risk men in Kiambu County, Kenya	Hildah N. Njuguna
EP-2-20	Congenital Drug-Resistant Tuberculosis in a Preterm Neonate: Successful Management in a Resource-Limited Setting – A case of Mama Lucy Kibaki Hospital	Kajuju Juliet
EP-2-21	Evolution of pulmonary abnormalities following tuberculosis treatment in Kenyan children	Joy Githua
EP-2-22	Incentive Spirometry for Post TB Lung Disease: Insights from a Kenyan Cohort	Keya Emmanuel
EP-2-23	Clinical Significance of Xpert Ultra Trace-Positive Results in Community TB Screening: Insights from 2022 Nairobi Survey	Erick Nyadimo
EP-2-24	Cheap in the Beginning but Expensive at the end, Self –Diagnosis and Medication over the Counter	Joseph Orure
EP-2-25	Lung function in African children and adolescents with HIV: spirometric patterns, risk factors and clinical presentation	Elizabeth Maleche-Obimbo
EP-2-26	Monocyte-to- Lymphocyte Ratio for Paediatric Tuberculosis Diagnosis: A Comparison of Confirmed, Unconfirmed and Unlikely Cases	Maureen Ndunge
EP-2-27	Pathways to Diagnosis in Children and Adolescents with Tuberculosis in Nairobi, Kenya	Evaline Baya
EP-2-28	Hidden Burden of COPD Misdiagnosis in Coastal Kenya Across Ages: Diagnostic Gaps and Overlap	Laurine Agisa
EP-2-29	Beyond Smoking: A Hidden Burden of Occupational Related COPD in Coastal Kenya	Alexander Ndungu
EP-2-30	Enhancing Lung Health with AI-Assisted Chest X-ray Screening: Improving Tuberculosis Detection in Coastal Kenya	Elvis Sagala Kegode
EP-2-31	Hidden burden of non-tuberculous lung diseases in the prison, A case study of Kamiti prison, Kenya	Penina Makena
EP-2-32	PUMUAir: Personalized Digital Air Quality Surveillance to Strengthen Lung Health Prevention and Early Action	Angie Reid
EP-2-33	Indoor and outdoor fine particulate matter and carbon monoxide concentrations in homes of infants in Nairobi, Kenya	Priscilla Wanini Edemba
EP-2-34	Latent tuberculosis infection and SARS-CoV-2 serological responses among healthcare workers in Kiambu County	Clement Likhovole
EP-2-35	Rising Serum Tumor Marker Values for Detecting and Monitoring Pulmonary Metastases	Patrick Khaemba
EP-2-36	Molecular Testing in Lung Cancer: A Laboratory-Based Approach to Precision Medicine	Beatrice Kangogo
EP-2-37	Diagnostic accuracy of FujiLAM 11 point of care assay for detecting Tuberculosis in urine samples among HIV positive and Negative Adults:A multicenter study in Kenya	Laureen Nyongesa
EP-2-38	Face mask sampling is associated with Mycobacterium tuberculosis bacillary load but not transmission in Nairobi, Kenya	Wilfred B. Murithi
EP-2-39	Leveraging the Digital Prisoner Health Record (PF-10) Screening Tool to Enhance TB Case Finding in Nairobi Prisons: A Pre-Post Cross-Sectional Evaluation	Gloria Kawira Njue

EP-2-40	Distribution of Spirometry Outcomes Across TB and Lung Diseases control zones in Nairobi: A Cross-Sectional Analysis	Morris Maina
EP-2-41	A Case for Expanding CAD4TB AI Scope Using 4 Years Operational Data from Kenya	Ronard Muimi
EP-2-42	Overtreatment of Pulmonary TB Using Chest X-Ray Findings at Meru Teaching and Referral Hospital, 2024	Claire Chelimo Cherotich
EP-2-43	Public Transport as a Hidden Driver of Tuberculosis Transmission: Evidence from High-Traffic Matatu Routes in Mombasa	Stephen Chakaya Muweye
EP-2-44	Impact of Enhanced Person-Centered Approach on Drug Resistant Tuberculosis Care in Kenya: Comparison of Patients' Interim Treatment Outcomes	Joshua Ngetich Limo
EP-2-88	Computer Aided X-ray improves Tuberculosis Case Detection in Siaya Hospital Study, 2022-2024	Margaret Maureen Atieno

DAY 3

(Friday, 7th Aug 2026): E-Poster Discussion 2 – (10:00am – 11:00am) – (Venue: Pre-Function Area)

EP-3-45 to EP-3-87

Abstract No.	Title	Author
EP-3-45	Church-Led Integrated Disease Screening: Leveraging Faith to Enhance TB Case Finding in Akwa Ibom State, Nigeria	Christian Onyeka Ugwu
EP-3-46	Evaluating TB & Lung Health Diagnostic Advances in Case Detection in Gatanga Sub-county, Murang'a County (2023–2025)	Rosemary Kiige
EP-3-47	Tuberculosis screening along the Kenya Uganda border using artificial intelligence enabled digital chest x ray, 2025	Robert Magomere
EP-3-48	Contact screening of pulmonary tuberculosis index patients in Bungoma County, Kenya 2025	Robert Magomere
EP-3-49	Early Detection and Diagnosis of Tuberculosis Using AI-Aided Mobile Chest X-Ray in High-Risk Kenyan Communities	Steven Mwalo
EP-3-50	Impact of Short-Course Regimens for Drug-Sensitive and Drug-Resistant TB	Shiroo Gumbo
EP-3-51	Uptake of TB Preventive Therapy (TPT) Among Contacts of Bacteriologically Confirmed Patients: A Case of Twelve TB Basic Management Units in Nairobi	Onesmus Karobia
EP-3-52	Assessment of Contact Management uptake on Tuberculosis Active Case Finding and Preventive Therapy outcomes in Machakos County	Johannes Ndambuki
EP-3-53	An Unusual Cause of Heart Failure in a Toddler: Reversible Dilated Cardiomyopathy Secondary to Tuberculosis pericarditis-case report	Vic Makori
EP-3-54	Late Detection of Tuberculosis in a Young Adolescent Leading to Constrictive Pericarditis and Subsequent Pericardiectomy: A Case Report and Clinical Review	Victor Ongeri
EP-3-55	Uptake of TB Preventive Therapy (TPT) Among Contacts of Bacteriologically Confirmed Patients: A Case of Twelve TB Basic Management Units in Nairobi	Onesmus Karobia
EP-3-56	Weight Changes and Mortality Among Tuberculosis Patients by Age at Kilifi County Referral Hospital, Kenya (2024–2025)	Deche Sanga

EP-3-57	Strategies employed to improve treatment outcomes among alcoholic TB patients in Korogocho informal settlements, Nairobi Kenya	Milcah Ombuya
EP-3-58	Unmasking the Hidden Burden of Tuberculosis in Nigeria: Evidence from Active Case Finding in Non-Traditional Settings	Ogoamaka Chukwuogo
EP-3-59	Free Chest X-Ray, More Cases: Programmatic Drivers of Increased Pediatric TB Notification in Coastal Kenya	Saumu Wayuwa
EP-3-60	Assessing Lung Function Impairment in Children & Adolescents Post-TB Treatment, Case of Mama Lucy Kibaki Hospital	Kajuju Juliet
EP-3-61	Optimizing Pediatric Tuberculosis Case Detection: Harnessing the Nutrition Department for Active Case Finding in Kiambu County, Kenya	Annfreshia Wangari Maina
EP-3-62	Integrating Community-Led TB Screening within Harm Reduction Services for PWUD in Nairobi	Susan Wambui
EP-3-63	Beyond the Clinic: Community-Powered Strategies to Find Missing Tuberculosis Cases in Kabete Sub-County, Kenya (2025–2026)	Annfreshia Wangari Maina
EP-3-64	Predictors of Tuberculosis (TB) death outcome: A survival analysis of TB patients notified in Kathiani subcounty, Machakos county, Kenya, January 2021-Dec 2023	Eunice Kiilu
EP-3-65	Tuberculosis Treatment Outcomes Among People Who Use Drugs in Changamwe Sub-County, Mombasa County, 2024	Yusra Awadh
EP-3-66	Integration of NCD service delivery into HIV/TB care at a private tertiary level facility in Nairobi	Shillah Kagali
EP-3-67	Integrated Care Models for Lung Disease Management in Sub-Saharan Countries: A Systematic Review	Jane Mathae
EP-3-68	Integrated Community-Based Screening for Tuberculosis and Other Lung Conditions in Mukuru Kwa Njenga, Nairobi County, Kenya	Morris Maina
EP-3-69	Nurse-Led Inhaler Technique Education Improves Asthma and COPD Patient Care in Clinics	John Ndung'u
EP-3-70	Routine Peak Expiratory Flow Monitoring in Asthma Management: A Systematic Review And a Suggested Monitoring Protocol for Resource-Limited Settings	Nicholas Kinoti
EP-3-71	Recurrent Pulmonary Embolism and its association with Factor II, Factor V leiden	Sanjeev Parmar
EP-3-72	Intergrating Spirometry Test into Post Tuberculosis Follow Up, Evidence from Ruaraka/Roysambu Subcounties- Nairobi County	Peris Wangechi
EP-3-73	Operationalizing the Nyandarua County Integrated Specimen Referral System (ISRS): A County Strategic Model to Transform Early TB Diagnosis	Everlyne Nyawira Macharia
EP-3-74	Strengthening Health Systems for Integrated Lung Health: From Detection to Recovery	Winfred Gitahi Mureithi
EP-3-75	From Detection to Recovery: Patient-Centered and Equitable Lung Disease Care in Nairobi County	Joseph Kilonzo
EP-3-76	Strengthening TB detection and treatment adherence through social contact invitations in Kikuyu and Kabete Sub County, Kiambu County, Kenya	Annfreshia Wangari Maina

EP-3-77	Ethical implications of the existing gender disparities in Tuberculosis care in Uganda and other low-resource, high Tuberculosis burden settings	Ranga Solomon Owino
EP-3-78	Holistic approach in managing Tuberculosis (TB) patients at Chaani CGTRH, Changamwe Sub County, June 2024 to May 2025	Yusra Awadh
EP-3-79	Baskets of Hope: Boosting TB Treatment Success rates through food supplementation	Koisok Isaac
EP-3-80	Integrated Patient-Centered Care and TB Treatment Outcomes in an Urban Informal Settlement, Kenya	Curtis Odeny
EP-3-81	Interplay Between Malnutrition and Respiratory Morbidity in Infants Along the Kenyan Coast: Implications for Integrated Child Lung Health	Ian Odhiambo
EP-3-82	From Detection to Recovery: Ward-Based TB Champions Improving Diagnosis and Patient Outcomes in Kiambu	Griffin Chege
EP-3-83	Cross-Border Mobility and Tuberculosis Treatment Interruption Among Male Migrant Workers in the Kenya–Uganda Border Region: A Program Experience from Sirisia Sub-County	Sheila Nkatha Kobia
EP-3-84	Miliary Lung Nodules and Cutaneous Lesions in an African Woman: A Case Report Highlighting Uncommon Presentation of Sarcoidosis	Subo Hassan Marsa
EP-3-85	Aptamer-based research in EML4-ALK fusion-expressing Non-small cell lung cancer	Brian Mandela Ogada
EP-3-86	Impact of Delayed TB Diagnosis on Mortality in Referral Hospitals: A Case Study of Kenyatta university teaching referral and research hospital (KUTRRH)	Penina Makena
EP-3-87	Youth Led Intergration of Air Pollution, Climate Exposure and Zoonotic TB for Lung Health in Kenya	Vivian Faith
EP-3-89	A Digital Patient Navigation Model Using TikTok to Improve Tuberculosis (TB) and Lung Health Services Uptake among Young People in Kenya	Nzamalu Mary

OA-02-01

Prenatal exposure to polycyclic aromatic hydrocarbons and birth outcomes in a pregnancy cohort in Nairobi, Kenya

Elizabeth Maleche-Obimbo³, Priscillah Wanini Edemba¹, Allison R. Sherris², Anne M. Riederer², Beatrice C Mutai³, Judy Adhiambo³, Lewis Olweywe¹, Prestone Owiti³, Catherine J. Karr^{2,4}, John Kinuthia¹, Barbra A. Richardson^{5,6}, Christopher D. Simpson², Christopher Zuidema², Sarah Benki-Nugent⁵,

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Background: Prenatal exposure to polycyclic aromatic hydrocarbons (PAHs) has been linked to lower birth weight (BW) and shorter gestational age (GA) at delivery. Most research has focused on populations in high-income countries, leaving low- and middle-income countries (LMICs) understudied. We examined associations between pregnancy urinary PAH metabolites and birth outcomes in a prospective cohort in Nairobi, Kenya.

Methods: The study population was drawn from women and their newborn babies enrolled in a pregnancy cohort in Nairobi, Kenya. Third-trimester urinary mono-hydroxylated PAH metabolites (OH-PAH) were measured and infant BW and GA were ascertained using medical record abstraction and self-report; BW-for-GA z-scores were computed. Linear and modified Poisson regression models were used to estimate the effects of five OH-PAHs on birth outcomes; Weighted Quantile Sum regression was used to explore OH-PAH mixture effects.

Results: Among 353 mother-infant pairs, the median infant BW was 3.2 kg and 7.6% were born preterm. All OH-PAH metabolites were present in urine of >99% of mothers. Individual OH-PAH concentrations were not associated with BW or BW-for-GA z-scores. One metabolite, 2-hydroxyphenanthrene, was associated with shortened gestation (RR = -1.6 day per doubling in concentration, 95% confidence interval: -3.1, -0.1). This association was attenuated after adjusting for self-reported exposure to household fuel and outdoor combustion and was strengthened among female infants, but not male infants, in sex-stratified analyses. Other metabolites and the OH-PAH mixture were not associated with birth outcomes.

Conclusions: Our findings suggest that exposure to 2-hydroxyphenanthrene may have a modest adverse effect on pregnancy duration, with potential sex-specific differences in association. No associations were observed for markers of fetal growth. These results highlight need for further studies on sex-specific vulnerabilities and the role of environmental co-exposures in impacting birth outcomes in LMICs.

Chest CT findings in Kenyan children and adolescents with HIV and chronic lung disease

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Introduction: Children and adolescents living with HIV (CAHIV) in sub-Saharan Africa remain at risk of chronic lung disease (CLD) despite antiretroviral therapy (ART), due to injury from tuberculosis, pneumonia, or other HIV-related lung pathology. We characterised the radiologic abnormalities in chest computed tomography (CT) scans in a cohort of Kenyan CAHIV with clinically diagnosed CLD.

Methods: This was a prospective cohort study (the Breathe Poa study) in which 320 CAHIV aged ≤19 years in long-term care at Kenyatta National Hospital were evaluated for chronic lung disease through history, examination, and spirometry. CAHIV diagnosed to have CLD based on chronic symptoms and signs, and/or functional impairment on spirometry were eligible for chest CT to further characterize their lung pathology to guide further medical care. CT scans were reviewed by two radiologists using a standardized structured approach.

Results: Thirty-five children and adolescents underwent chest CT; median age was 13.0 years [IQR 8.4–17.5], 60% were male, all were on antiretroviral therapy, 82% were virologically suppressed, and median CD4 count was 891 cells/ml. Radiologic abnormalities were identified in 23 (65.7%) of 35 children. By anatomical site, pathology was noted in lung parenchyma in 16 (46%), airways in 17 (49%), pleura in 4 (11%), and mediastinum/lymph nodes in 5 (14%) children, majority had pathology in >1 site. Commonest parenchymal pathology was fibrosis in 9 (26%) and interstitial patterns in 9 (26%); Airway-predominant disease was bronchiectasis in 17 (48.6%) and bronchiolitis obliterans in 6 (17.1%), with 15 (43%) showing mosaic attenuation. Extent of pathology was moderate-to-severe in 6 (17%) children.

Conclusion: Chest CT in Kenyan CAHIV with CLD demonstrates a high burden of lung pathology involving lung parenchyma as well as the bronchial tree. These findings support integrating long-term lung-health assessment and care, including imaging and spirometry testing into existing care services for CAHIV.

Tuberculosis-associated hyperglycaemia: Temporal dynamics and TB treatment outcomes in individuals not previously diabetic

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Introduction: Active tuberculosis (TB) infection can induce hyperglycaemia, increasing the risk of type 2 diabetes mellitus (DM) and worsening TB disease severity. In this study, we aimed to investigate the prevalence and temporal patterns of TB-associated hyperglycaemia and its effect on disease presentation and TB treatment outcomes among a cohort of individuals not previously diabetic.

Methods: This was a five-month prospective cohort study conducted in selected healthcare facilities in Nairobi, among non-diabetic adults aged >18 years with pulmonary TB. Glycaemic status was assessed at baseline and months two and five using HbA1c. Hyperglycaemia (HbA1c $\geq 5.7\%$) was categorized as persistent, transient, or incident. Data were analysed using SPSS and GraphPad Prism. HbA1c trends and associations with DM-related symptoms and TB treatment outcomes were assessed using Friedman test and generalized estimating equations.

Results: Eighty-seven participants were enrolled; 66 and 70 were assessed at months 2 and 5, respectively. Most were male (76%) and HIV-negative (84%), with a median age of 37 years (IQR 29–44). Hyperglycaemia prevalence declined from 75% (45% prediabetic and 30% diabetic) at baseline to 21% (14/66) at month 2 and 9% (6/70) at month 5. Hyperglycaemic participants were more likely to experience DM symptoms: frequent micturition (adjusted Relative Risk [aRR] 1.76, 95% Confidence Interval [CI] 1.12–2.77), unintentional weight loss (aRR 1.84, 95% CI 1.24–2.75), and blurred vision (aRR 1.95, 95% CI 1.20–3.18). Hyperglycaemia and glycaemic variability were associated with an increased risk of sputum positivity (aRR 4.22, 95% CI 2.09–8.52) and unfavourable TB treatment outcomes ($p < 0.001$), respectively.

Conclusions: New-onset hyperglycaemia was highly prevalent among adults newly diagnosed with TB and persisted through the fifth month of TB treatment. Hyperglycaemia is associated with classic diabetic symptoms and persisting sputum positivity, highlighting the need to integrate glycaemic monitoring and management into TB follow-up care.

Utilization of Digital TB Screening Tool (Tibu-Lite App) to Improve TB Case Detection: A Case of Eight Sub-Counties in Nairobi

Rosemary Mbacio¹, O. Karobia¹, C. Pahe¹, J. Limo¹

Affiliation:

¹Population Service Kenya (PS Kenya)

Background: Nairobi County faces a high burden of tuberculosis (TB), with a contribution of 15 % to the national burden. According to recent studies, it is estimated that 54% of cases remain undiagnosed, this is attributed to low screening rates and poor documentation. Low screening allows symptomatic individuals to go unnoticed, while poor documentation prevents timely and accurate reporting of cases. This leads to increased TB transmission in the community. The goal of the intervention was to adopt innovative digital tools to increase TB case detection and improve documentation by capacity building healthcare workers and Community health promoters to utilize digital TB screening tool (Tibu-lite App).

Intervention: The Implementation was carried out in 8 sub counties; Westlands, Ruaraka, Kasarani, Roysambu, Makadara, Embakasi East, West, and Central, between May 2025 and August 2025, targeting TB screening in health facilities and at the community level. During this period, 120 community health promoters and 48 healthcare workers were trained on the use of Tibu-lite. This included capacity building on screening procedures, digital data entry, presumptive case identification, and referral pathways. TB screening was conducted both at health facilities and through targeted community outreaches utilizing Tibu-lite to aid screening and documentation in real time, flagging presumptive TB and syncing the information with the national reporting system (TIBU).

Results: Pre-intervention, between January and April 2025, 111 contacts were screened, with 3 presumptive TB cases identified and no TB cases detected. Following intervention between May and August 2025, 879 contacts were screened, with 134 (15%) identified as presumptive TB cases. Among these, 31% (41/134) were diagnosed with TB and linked to treatment.

Conclusion: The integration of Tibu-lite screening coupled with capacity building supported structured TB screening and timely data capture, contributing to improved identification of presumptive and confirmed TB cases in high-burden community settings.

Diagnostic Yield of Spirometry in Clients with Respiratory Symptoms and Chest X-Ray CAD Scores <40 in Ruaraka – Nairobi County.

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Introduction: CAD4TB CXR is used as a screening tool for respiratory conditions. It gives scores between 0-100 whereby scores <40 are considered normal and excluded from further diagnostic evaluations. Respiratory symptoms may persist in these clients raising concerns for missed or masked respiratory conditions. Spirometry remains the golden standard test for assessing pulmonary functions and has been implemented within primary care networks.

The study aimed at evaluating diagnostic yield of spirometry among clients with respiratory symptoms and CAD <40 in Ruaraka Sub-County.

Methodology: At Ruaraka Sub- County, clients presumed for tuberculosis are first screened using computer aided detection (CAD4TB) chest x-ray before being referred for molecular testing. Those with scores <40 are further evaluated for other chronic lung diseases through spirometry. This approach enhances diagnostic accuracy and ensures that patients with non-TB respiratory conditions receive timely identification and appropriate management.

The study compared spirometry outcomes among clients between June 2025 and Feb 2026. CHI test was used to determine significance. Data was collected from lung health register. The study excluded all bacteriologically confirmed TB clients. Spirometry outcomes were either normal, obstructive or restrictive.

Results: 209 symptomatic clients underwent spirometry between June 2025 and February 2026. Of the 209, 117 (60%) had CAD scores <40 with 107 (91.5%) having either occupational risk factors or smoking. Among the 117, 83 (71%) were male and 34 (29%) were female. Spirometry outcomes were; normal 44 (38%), obstructive features 64 (55%) with 44 (69%) being COPD, restrictive features 9 (8%). 87% of abnormal spirometry findings had occupational risk factors or smoking.

Conclusion: The results indicate that a considerable proportion of clients with scores <40 demonstrated abnormal spirometry findings, predominantly obstructive patterns. These observations highlight the importance of incorporating spirometry testing for individuals with CAD <40 for early detection of chronic respiratory conditions beyond tuberculosis.

Determinants of Delayed Diagnosis in Kenyan Lung Cancer Patients: Health-Seeking Behaviors and Health System Barriers

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Introduction: In Kenya, late-stage diagnosis significantly contributes to low survival rates, with only a small proportion of cases identified at a stage amenable to curative treatment. Behavioral factors, health system limitations, and sociolect-cultural dynamics collectively influence health-seeking behaviors, thereby affecting early detection and treatment outcomes. This study examines patterns of health-seeking behavior among lung cancer patients and identifies key determinants of delayed diagnosis within a programmatic context.

Methods: This analysis draws on program data from the Moi Teaching and Referral Hospital Lung Cancer Program (MLCCP) as of March 2026, supplemented by behavioral insights and observational findings from patient care pathways from qualitative data. A descriptive exploratory approach was used to assess patient characteristics, diagnostic trajectories, and reported barriers to timely care. Particular attention was given to misdiagnosis patterns, societal and demographic factors, and systemic constraints influencing patient decision-making.

Results: From 2018-2026 AMPATH BMSF MLCCP lung cancer program in Kenya diagnosed a total of N=430 lung cancer patients at MTRH, majority at stage IV disease and many n= 365 (84%) died within six months of diagnosis, currently n=54 patients are alive and have been initiated on treatment. The high mortality rate underscores the severity of delayed presentation. Historical data, indicates that most patients had undergone multiple treatments for tuberculosis (TB) more than four times (4X) before receiving a correct diagnosis, highlighting significant diagnostic challenges. Health-seeking delays were attributed to multiple factors. At the individual level, symptoms of lung cancer were frequently misinterpreted as minor illnesses such as the common cold, leading to self-medication and delayed facility visits. Fear of cancer diagnosis, stigma, and limited awareness further compounded delays. Individuals with lower education levels demonstrated longer delays due to limited symptom recognition, while those with higher socioeconomic status often postponed care due to competing work demands. Health system barriers included inadequate diagnostic capacity at lower-level facilities, lack of essential diagnostic kits, and weak referral systems described as a “referral jungle.” Misdiagnosis with conditions such as TB, asthma, pneumonia, and chronic obstructive pulmonary disease were common. Structural challenges such as long distances to health facilities and reliance on alternative medicine further hindered timely care. Gender disparities were observed, with a higher proportion of female patients aged 50 years and above presenting late and experiencing poorer outcomes compared to males.

Discussion: The findings highlight critical interplay between behavioral, sociocultural, and systemic factors in shaping health-seeking behaviors among lung cancer patients. Delayed diagnosis is not solely a clinical issue but a multifaceted challenge requiring integrated interventions. Behavioral targets such as smoking, indoor and outdoor air pollution exposure, and stigma must be addressed alongside health system strengthening efforts. Improving early detection of lung cancer in Kenya requires a dual approach: enhancing community-level awareness and strengthening facility-based diagnostic and referral systems.

Thoraco-abdominal Point -of - care Ultrasound (POCUS) patterns in children with presumptive tuberculosis.

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Introduction: Childhood tuberculosis (TB) remains underdiagnosed due to non-specific clinical presentation and limited access to imaging in resource constrained settings. Delays in diagnosis contribute to missed pulmonary and extra pulmonary disease. Thoraco-abdominal point-of-care ultrasound (POCUS) offers a rapid bedside imaging approach capable of detecting features suggestive of disseminated TB. This study aimed to describe thoraco-abdominal POCUS patterns in children with presumptive TB and evaluate the feasibility of integrating a standardized protocol into routine TB clinic workflow.

Methods: A prospective descriptive study was conducted among 40 consecutively recruited children aged 0- 14 years presenting with presumptive TB at an urban TB clinic. A standardized thoraco-abdominal POCUS protocol was performed alongside routine clinical evaluation. Sonographic findings including pleural effusion, subpleural consolidation, abdominal lymphadenopathy, splenic lesions, ascites and pericardial effusion were recorded using a structured checklist. Feasibility measures included scan duration, child tolerance, workflow integration and influence on clinical decision making. Data were analyzed using descriptive statistics.

Results: Preliminary findings demonstrate recurring thoracic and abdominal sonographic patterns consistent with pulmonary and extra pulmonary TB involvement. Combined thoracic and abdominal findings were commonly observed and 16 children were found to have one or more parameters being evaluated. Median scan duration was under 10 minutes and the protocol was successfully integrated into routine outpatient workflow. In selected cases POCUS findings contributed to earlier clinical decision making and improved diagnostic confidence.

Conclusion: Thoraco-abdominal POCUS demonstrates reproducible sonographic patterns in children with presumptive TB and is feasible within a high burden outpatient setting. This structured protocol may serve as a scalable adjunct tool to strengthen pediatric TB evaluation and improve early case detection in resource limited settings.

Strengthening Health Systems for Improved Lung Health Outcomes in Health Care Facilities

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Background: Respiratory diseases such as asthma, chronic obstructive pulmonary disease (COPD), tuberculosis, and post-tuberculosis lung disease are major contributors to morbidity and mortality, particularly in low- and middle-income countries. Weak health systems, delayed diagnosis, and limited access to essential services worsen these outcomes. Strengthening health systems is critical to improving lung health.

Methodology: This study employed a qualitative review of existing literature, national health reports, and program data. It analyzed key health system components including service delivery, workforce capacity, diagnostic availability, referral systems, and data utilization. Case examples from Kenya were used to highlight practical interventions and system gaps.

Results: Findings indicate significant gaps in early diagnosis, limited availability of diagnostic tools, and inadequate training of healthcare workers in lung health management. Integration of lung health services into primary healthcare improved early detection and patient outcomes. Strengthened referral systems and better data use enhanced continuity of care, while community awareness initiatives increased health-seeking behavior.

Recommendations: There is a need to invest in healthcare worker training, expand access to affordable diagnostic tools, and integrate lung health services into primary care. Strengthening referral systems, improving data-driven decision-making, and enhancing community engagement are essential. Policy support and sustainable financing are critical to ensure long-term impact and improved lung health outcomes.

The Prevalence and Associations of Interstitial Lung Disease in Connective Tissue Disease Patients at Kenyatta National Hospital

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Background: Pulmonary complications are a significant cause of morbidity and mortality in patients with connective tissue diseases (CTD), and interstitial lung disease (ILD) is one of the commonest manifestations of these pulmonary complications. The disease is largely understudied in Africa and little is known about its prevalence and characteristics on the continent.

Objectives: To determine the prevalence of ILD among connective tissue disease patients at Kenyatta National Hospital; and to describe the demographic, clinical and radiological features and their associations in patients with the disease.

Methods: A cross-sectional descriptive census of CTD patients attending the rheumatology clinics at Kenyatta National Hospital in 2025. Patients with known ILD and those sent for HRCT scans for screening or diagnostic purposes were systematically sampled. Clinical and radiological data were obtained. Multidisciplinary discussion was done to determine the presence and type of ILD.

Results: 680 CTD patients were seen at the clinic. 69 ILD cases were identified, giving an overall CTD-ILD prevalence of 10.1%. ILD prevalence was $\geq 40\%$ in systemic sclerosis and mixed connective tissue disease (MCTD). Nonspecific interstitial pneumonia (NSIP) was the predominant pattern seen, followed by usual interstitial pneumonia (UIP). Three patients had associated combined pulmonary fibrosis and emphysema. The majority of ILD patients had positive antibodies, were symptomatic, had never smoked and had no known occupational exposures. 21.6% had had prior pulmonary tuberculosis. Pulmonary arterial hypertension was the most common comorbidity.

Conclusion and recommendations: The overall prevalence of CTD-ILD was 10.1%. SSc and MCTD had the highest ILD prevalence, and routine screening may be beneficial in these patients. NSIP and UIP were the commonest patterns, with UIP most associated with RA.

Using Bayesian latent class models to evaluate tuberculosis diagnostics in a pediatric cohort study in Kenya.

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Background: Pediatric tuberculosis (TB) diagnosis is complicated by poor diagnostic performance. Culture, the gold standard, has limited sensitivity in children (~40-60%), while clinical algorithms lack consistency. Bayesian latent class models (BLCMs) provide an analytic approach to assess “true” TB prevalence and diagnostic accuracy without a perfect gold standard.

Methods: We analyzed data from a cohort of 452 symptomatic children aged <15 years who underwent Chest X-ray (CXR), respiratory sample testing with GeneXpert MTB/RIF Ultra, smear microscopy and culture, tuberculin skin test (TST), and interferon-gamma release assay (IGRA) in Nairobi, Kenya, using three BLCMs estimated using Markov chain Monte Carlo methods (rjags) with weakly informative priors were fitted. Model 1 assumed conditional test independence; Model 2 incorporated random effects to account for shared biological or immunologic test dependence; Model 3 extended Model 2 adjusted for clinical covariates and NIH TB signs and symptoms. Posterior medians and 95% credible intervals (CrIs) were obtained for TB prevalence, test sensitivities, specificities, and covariate effects.

Results: Prevalence estimates under Models 1 [20.2% (15.9–24.7)] and 2 [24.5% (19.6–30.0)] were higher than under Model 3 [14.8% (11.0–19.3)], though sensitivity and specificity were broadly consistent across models. Under preferred Model 3, culture and GeneXpert MTB/RIF Ultra demonstrated moderate sensitivity (56.9% and 63.2%, respectively), while smear microscopy showed lower sensitivity (29.8%). CXR achieved high sensitivity (79.7%) but limited specificity (40.2%). IGRA and TST displayed sensitivities of 63.7% and 50.1%, and specificities of 81.5% and 65.8%. Older age was positively associated with TB (log-odds ratio 1.09; 95%CrI: 0.14–2.18).

Conclusion: BLCMs estimated TB prevalence and test accuracies without a gold standard using weakly informative priors. Radiography demonstrated high sensitivity, while culture and GeneXpert MTB/RIF Ultra high specificity with improved test performance with older age. We recommend CXR for screening, followed by GeneXpert or culture for confirmation where feasible in Kenyan settings.

Comparative analysis of Treatment Outcomes for Different Drug-Resistant Tuberculosis regimen in Kenya, 2016 – 2022

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Background: Despite changes in drug-resistant tuberculosis (DR-TB) treatment regimens, comparative evidence on outcomes across these regimens in routine programmatic settings remains limited.

Methods: We conducted a retrospective cohort study using national TB surveillance data for all DR-TB patients notified in Kenya from 2016 to 2022. Treatment outcomes were categorized as favorable or unfavorable. We summarized patient characteristics and outcomes using descriptive analyses. Logistic regression was used to assess the association between treatment regimen and unfavorable outcomes, with multivariable model adjusted for demographic, clinical, and programmatic variables. Model adequacy was assessed using variance inflation factors, the Hosmer–Lemeshow test, and receiver operating characteristic analysis.

Results: A total of 5,267 DR-TB patients were included, of whom 4,475 (85%) achieved favorable outcomes while 792 (15%) experienced unfavorable outcomes. Patients with unfavorable outcomes had higher proportions of severe malnutrition (30% vs 18%), HIV co-infection (50% vs 27%), rifampicin-resistant TB (61% vs 41%), and pre-XDR/XDR disease. Community-based care was the predominant model in both groups. In unadjusted analyses, longer injectable-free regimens, longer injectable regimens, and pre-XDR/XDR regimens were associated with higher odds of unfavorable outcomes compared with mono-resistant regimens. However, after multivariable adjustment, regimen classification was not independently associated with treatment outcome. Independent predictors of unfavorable outcomes included age ≥ 65 years (aOR 1.60; 95% CI: 1.08–2.35), severe malnutrition (aOR 2.32; 95% CI: 1.88–2.85), HIV co-infection (aOR 2.28; 95% CI: 1.92–2.70), undocumented HIV status (aOR 5.41; 95% CI: 2.51–11.3), pre-XDR TB (aOR 3.47; 95% CI: 1.02–12.1), and isolation-based care (aOR 2.74; 95% CI: 1.51–4.91).

Conclusion: Under routine programmatic conditions, no significant differences in DR-TB treatment outcomes were observed across regimens after adjustment for patient and programmatic factors. Unfavorable outcomes were driven primarily by clinical vulnerability and disease severity, including older age, malnutrition, HIV co-infection, advanced drug resistance, and isolate on-based care models.

Towards Early Detection & Integrated Care: Factors Associated with Delayed Pulmonary Tuberculosis (PTB) Diagnosis among School-Going Children and Adolescents in Makueni County, Kenya.

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Introduction: In 2024, pediatric tuberculosis represented 13.3% of TB notifications in Kenya. Schools are high-risk congregate settings for transmission; however, delayed diagnosis among school-going children & adolescents continues to sustain community spread. In Makueni County, pediatric TB constituted 6% of cases, suggesting under-detection & significant diagnostic gaps. This study aimed to identify sociodemographic, clinical & health system determinants of delayed diagnosis of pulmonary TB among school-going children & adolescents in Makueni County.

Methods: We conducted a cross-sectional study among 268 school-going children and adolescents (aged 4–20 years) diagnosed with PTB in Makueni County. Participants were identified from the TIBU surveillance system (2023–2024). Data were collected using structured, interviewer-administered electronic questionnaires; caregivers provided proxy responses for minors, while participants aged 18–20 years were interviewed directly. Diagnostic delay was defined as >28 days from symptom onset to diagnosis, aligned with WHO guidelines. Descriptive statistics and multivariable logistic regression were used to identify independent predictors at $p < 0.05$ with 95% confidence intervals (CI).

Results: Participants were randomly allocated into two equal groups of 134 for delayed and non-delayed diagnosis. Delayed diagnosis was associated with residing >5 km from a facility (79.1% vs. 27.6%) and with clinical versus bacteriological diagnosis (72.4% vs. 29.1%). Independent predictors included absence of known TB contact (aOR = 17.35, $p = 0.001$), self-referral (aOR = 11.9, $p = 0.001$), caregiver with no formal education (aOR=10.54, $p=0.001$), clinical diagnosis (aOR=8.75, $p=0.001$) & distance to facility >5km (aOR=7.06, $p=0.001$). BCG vaccination (aOR=2.95, $p=0.26$), residence (aOR =1.51, $p=0.391$) & caregiver occupation (aOR=2.55, $p=0.060$) were not significant.

Conclusion: Delayed pediatric PTB diagnosis is driven by access barriers, limited TB awareness, and diagnostic challenges. Strengthening integrated facility & community-based care pathways, expanding child-friendly diagnostics, and implementing school & community-centered TB literacy programs are critical for early detection, system strengthening, and end-to-end lung health.

DETAILED E-POSTER ABSTRACTS

EP-2-1

Clinical and Metabolic Predictors of Tuberculosis Treatment Outcomes: A Longitudinal Analysis in Kiambu County, Kenya

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Background: While Kenya has made strides in tuberculosis (TB) control, achieving the “End TB” targets requires addressing the clinical and metabolic complexities that drive unfavorable outcomes. This study evaluated the impact of comorbidities, nutritional status, and glycemic control on treatment success in a high-burden county setting.

Methods: A longitudinal cohort study of 310 TB patients was conducted in Kiambu County. We tracked weight, Body Mass Index (BMI), random blood sugar (RBS), hemoglobin levels, and bacillary load at baseline, Week 4, Week 8, and Week 24. Cox proportional hazards regression was used to identify independent predictors of unfavorable outcomes (death, loss to follow-up, or treatment failure), while Kaplan-Meier curves assessed time to sputum smear conversion.

Results: The treatment success rate was 90.6% (n = 281). Unfavorable outcomes were significantly associated with Diabetes Mellitus (HR 7.83; 95% CI: 1.44–42.50; p = 0.017), HIV-positive status (HR 4.04; 95% CI: 1.10–14.80; p = 0.035), and previous TB treatment history (HR 3.27; 95% CI: 1.23–8.71; p = 0.018). Anemia was the most common comorbidity (78%) and was linked to delayed sputum conversion. Patients with high baseline bacillary load (3+) had longer median conversion times (7 weeks) than those with scanty loads (3 weeks), contributing to poorer treatment outcomes. Severe Acute Malnutrition declined from 15.8% to 0.7% by Week 24. Moreover, elevated baseline random blood sugar was significantly associated with poor outcomes (p = 0.045), highlighting the impact of early metabolic stress on recovery.

Conclusion: To further improve TB success rates, programs must move beyond a “one-size-fits-all” approach. We recommend the institutionalization of routine screening for diabetes, anemia, and alcohol use at diagnosis, alongside intensified monitoring for patients with a history of prior TB or high initial bacillary loads.

Time to Sputum Smear Conversion in Patients with Bacteriologically Confirmed Pulmonary Tuberculosis in Kiambu County, Kenya.

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Introduction: Tuberculosis (TB) remains a significant global health burden, with 10.7 million new cases and 1.23 million deaths reported in 2024. Africa accounted for 19% of these cases, with Kenya ranking among the top 30 high-burden countries, reporting 97,126 TB cases in 2024. With a case notification rate of 189 per 100,000, Kiambu County is among Kenya's top 12 high-burden counties.

Objectives: This study aimed to assess the time to sputum smear conversion and identify demographic, clinical, and social, demographic and economic factors associated with delayed conversion among TB patients in Kiambu County.

Methods: We conducted a prospective longitudinal study between December 2023 and June 2024 involving 316 newly diagnosed TB patients. Participants were followed from treatment initiation, with weekly sputum smear examinations and monthly blood sugar and weight measurements until smear conversion (primary outcome), and thereafter until treatment completion or assignment of a final treatment outcome. We also assessed the time between symptom onset and diagnosis (diagnostic delay), as well as social, demographic, and economic factors. Data were analyzed using R version 4.3.4 through descriptive statistics, Cox proportional hazards models, and survival analysis.

Results: Delayed sputum conversion was significantly associated with a high initial bacillary load (hazard ratio, HR = 1.52, $p < 0.001$), diabetes (HR = 1.20, $p = 0.036$), and poor socioeconomic status (HR = 1.16, $p = 0.007$). Conversely, older age groups 35–44 years (HR = 0.61, $p = 0.037$) and 55+ years (HR = 0.73, $p = 0.032$) demonstrated faster conversion rates.

Conclusion: This study underscores the importance of addressing clinical factors, such as baseline bacillary load, diagnosis delays, and diabetes, to optimize sputum smear conversion. The findings highlight the need for targeted interventions and tailored strategies to enhance treatment success across diverse populations.

Improving Treatment Outcome in Drug-Resistant Tuberculosis: Predictive Insights from Makueni County, Kenya

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Background: Drug-resistant tuberculosis (DR-TB) remains a major global health challenge, contributing to 13% of antimicrobial resistance deaths. Kenya, with a DR-TB prevalence of 1.5%, is among the 30 high-burden countries. In Makueni County, 132 DR-TB cases were reported between 2015 and 2024, with undiagnosed cases suggesting ongoing silent transmission. This study developed and validated transmission dynamics and predictive models to identify patients at risk of poor outcomes. The study addressed the questions: which sociodemographic and clinical factors predict treatment success, and how can advanced analytics improve early risk stratification?

Methods: A retrospective review of 132 DR-TB cases from the TIBU register (2015–2024) in Makueni County was conducted. Sociodemographic and clinical data were extracted and analyzed using R. A SEIR-P model simulated transmission over 24 months, while machine learning models predicted treatment success. Model performance was evaluated using sensitivity, specificity, PPV, NPV, Cohen's Kappa, and AUC.

Results: Most patients were male (73.5%) and aged 35–44 years (35.6%). Undernutrition (60.6%), HIV co-infection (34.1%), and rifampicin resistance (63.6%) were common. Treatment success was 76.5%. SEIR-P models projected epidemic peaks within 2–4 months. The tuned logistic regression model showed moderate performance (AUC = 0.80; sensitivity = 0.76; specificity = 0.56; PPV = 0.86; NPV = 0.40; Kappa = 0.29). Low BMI ($\beta = 0.1016$), age >35 years ($\beta = 0.0767$), and HIV positivity ($\beta = 0.0722$) were strongest predictors of poor outcomes, while male sex ($\beta = 0.0142$), GeneXpert not performed ($\beta = 0.0102$), monoresistance ($\beta = 0.0053$), and rifampicin resistance ($\beta = 0.0001$) had minimal effects.

Conclusion: Low BMI, age >35 years, and HIV positivity strongly influenced poor outcomes, while sex, diagnostic and resistance variables contributed marginally. Findings support strengthening nutritional care, optimizing HIV/TB co-management, enhancing surveillance, and integrating predictive models into clinical workflows to improve data-driven decision-making, resource allocation, and patient outcomes.

Predictors of unfavorable treatment outcomes among human immune deficiency patients co-infected with tuberculosis in Bungoma

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Background: Tuberculosis (TB) is one of the commonest opportunist infection among people living with human immune-deficiency virus (HIV). There is scarce information on predictors of unfavorable treatment outcome among HIV-TB co-infected in our setting. We aim to assess treatment outcome among TB /HIV co-infected patients and assess predictors associated with unfavorable treatment outcome in Bungoma County, 2012-2024.

Methods: Retrospective descriptive study using routinely collected data. Descriptive summary statistics was done and frequencies with proportions for categorical data and continuous data. Univariate and multivariate analysis was used to assess for associations.

Results: A total of 18593 patients were started on TB treatment during the period, 97.40% (18116/18593) were tested for HIV and 28.80 % (5225/18116) were HIV/TB co-infected. The mean age was 35.90 (standard deviation (18.91). Total of 79.12% (4104/5167) of coinfectd patients were successfully treated, 15.65% (812/5167) died while 4.84% (251/5167) were lost to follow up (LTFU) as shown in figure 1. Gender (adjusted odds ratio (aOR) 0.83, 95% confidence interval (CI): 0.70-0.98), body mass index (BMI) (aOR 1.60, 95% CI: 1.31-1.94), antiretroviral therapy (ART) initiation (aOR 2.70, 95% CI: 1.77-4.11) were significantly associated with unfavorable treatment outcome. Females were 17% less likely to have unfavorable treatment outcome, those patients with low BMI (<18.5) were 60% more likely to have unfavorable treatment outcome and those TB patients who were not on ART were 2 times more likely to have unfavorable treatment outcome.

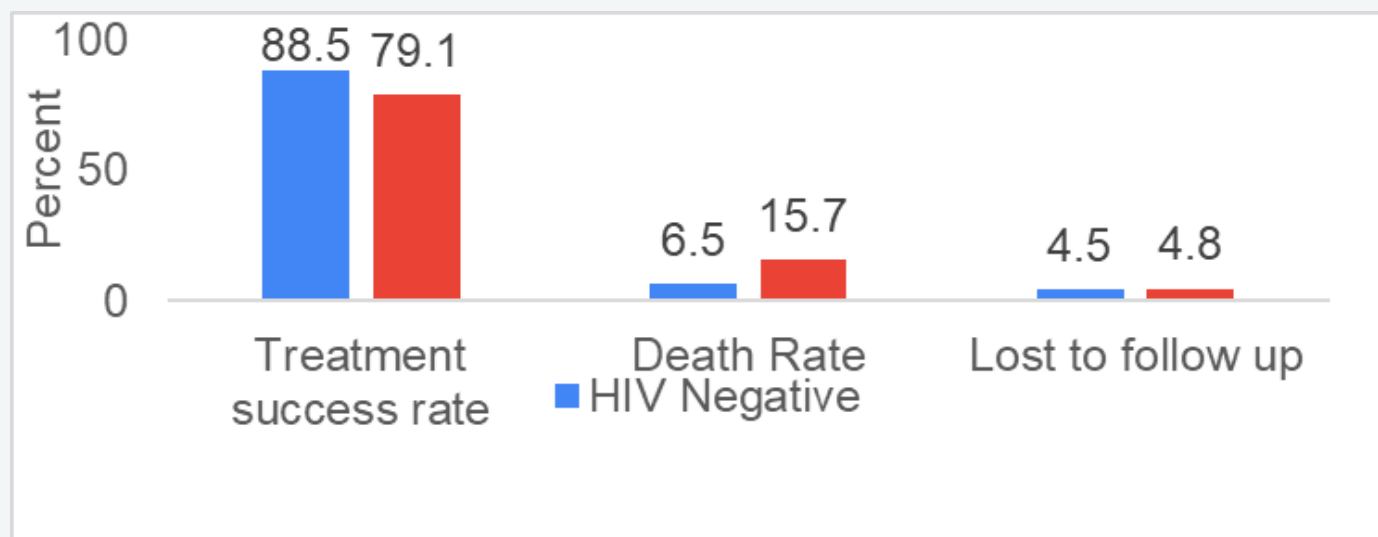


Figure 1: Tuberculosis treatment outcome among HIV coinfectd and HIV negative patient, Bungoma 2012-2024

Recommendation: Treatment outcome for TB/HIV co-infected patients was low compared to HIV negative patient's. Death rate was high among the coinfectd patients. Thorough screening of men gender for both HIV and TB and early initiation of ART among the TB co-infected patients is recommended.

Whole-Genome Sequencing of *Mycobacterium tuberculosis* in Western Kenya: Lineage and Phylogeny

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Background: Western Kenya remains a high-burden tuberculosis (TB) region, yet genomic data describing the diversity and phylogenetic relationships of *Mycobacterium tuberculosis* complex (MTBC) strains are limited. Understanding sub-lineage patterns and the transmission dynamics inferred from phylogenetic analysis is essential for effective TB surveillance and control strategies. This study aimed to characterize MTBC lineage diversity and phylogenetic structure in Western Kenya using whole genome sequencing (WGS).

Methods: This was a cross-sectional WGS study using archived MTBC isolates from 12 counties in Western Kenya. Genomic DNA was extracted using a modified CTAB protocol and sequenced using the Element AVITI platform. Reads were processed using DuffyNGS/DuffyTools pipeline and aligned to the H37Rv reference genome. Lineages were assigned using TBProfiler v4.3.0 based on single nucleotide polymorphisms (SNP). Phylogenetic relationships were reconstructed using Nextstrain and interpreted using tree topology.

Results: Of 316 MTBC isolates processed, 290 met quality criteria for WGS. Lineage 4 (L4) (42%) and Lineage 3 (L3) (38%) predominated, with significant county-level heterogeneity observed in Kisii and Homa Bay (L4), and Siaya and Migori (L3) ($p < 0.001$). Sub-lineage analysis revealed widespread circulation of Modern Beijing (L2.2.1) and Central-Asian (CAS) (L3.1.1) strains, alongside substantial L4 diversity. Rare sub-lineages showed limited geographic distribution, and the identification of an *M. bovis* isolate highlights potential zoonotic risks requiring local reservoir monitoring. Phylogenetic analysis revealed geographically structured relatedness, with a localized persistence in Kisii, broader regional distribution in Homa Bay, and additional clades showing intermediate regional patterns.

Conclusion: This study reveals a diverse MTBC population in Western Kenya, dominated by Lineages 4 and 3. Phylogenetic analysis shows distinct transmission dynamics: localized, stable community spread in Kisii and widespread dissemination through Homa Bay's regional network. To effectively interrupt these distinct transmission chains, targeted control strategies should prioritize localized contact tracing in Kisii and multi-county monitoring in Homa Bay.

Trends in Tuberculosis Detection Using GeneXpert: A Data Analysis in Gatanga Sub County-Murang'a, 2023-2025

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Background: Tuberculosis (TB) is a chronic infectious disease caused by *Mycobacterium tuberculosis*. GeneXpert enables same- day diagnosis and rapid initiation of treatment thus reducing transmission. Despite use of molecular as the primary diagnostic test, majority of TB cases remain undetected or delayed in diagnosis in rural settings. This study seeks to assess molecular diagnosis, case detection and rifampicin resistance (RR) screening in Gatanga.

Objective: To analyze trends in tuberculosis detection using Genexpert ultra in Gatanga Sub County from 2023 to 2025

Methodology: A retrospective review of TibuLims data from 2023 to 2025 in Gatanga Sub County for all tested samples was done. All samples tested using Genexpert were included while non- molecular were excluded. Variables were analyzed using descriptive statistics and presented in percentage.

Results: Total tests were 215, 274 and 316 in 2023, 2024 and 2025 respectively. Positivity rate was 40.5% (87/215), 59.1% (162/274) and 53.2% (168/316) in respective years. Males constituted 76.3% (164/215), 76.2% (209/274) and 75.3% (238/316) while among the MTB cases, males comprised of 87.8% (72/87), 84% (136/162) and 84.5% (142/168) in 2023, 2024 and 2025 respectively. There were three RR in 2023 and two in 2025. Contribution of MTB cases by age groups (years) was 0-< 15 was 1.1% (1/87), 1.2% (2/162) and 3.0 % (5/168), 15-24 was 12.7% (11/87), 9.9% (16/162) and 13.0% (22/168), 25-34 was 21.8% (19/87), 22.8% (37/162) and 20.2% (34/168), 35-44 was 33.3% (29/87), 37% (60/162) and 29.2 (49/168), 44-54 were 33.3% (16/87), 37.0% (32/162) and 29.2% (32/168) while for ≥55 was 12.7% (11/87), 9.3% (15/162) and 15.5% (26/168) in 2023, 2024 and respectively. Contribution of cases in public sector was 98.9%, 100% and 99.4% in respective years.

Conclusion: There was an upward trend in TB cases. Molecular diagnostic method will improve early detection, prompt initiation on treatment and control transmission.

Performance of the LF-Lam and Genexpert Test against Culture in TB Diagnosis among Patients with AHD Disease In Makueni County

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Background: Tuberculosis (TB) continues to pose a significant public health challenge, especially for individuals living with HIV, who are at greater risk for atypical forms such as paucibacillary and extrapulmonary TB. Point-of-care tests like LF-LAM are recommended for quick diagnosis; however, discrepancies with GeneXpert results have been noted, and there is limited data comparing both methods to culture, the gold standard. This study assessed the diagnostic performance of LF-LAM and GeneXpert against TB culture in patients with advanced HIV disease (AHD) in Makueni County.

Objective: A cross-sectional design was employed, enrolling 255 HIV-positive patients with AHD from four healthcare facilities. Socio-demographic and clinical data were collected using standardized questionnaires. Urine samples were tested with LF-LAM, while sputum samples underwent GeneXpert and culture testing. Data were analyzed using SPSS to determine sensitivity, specificity, predictive values, and overall diagnostic accuracy, with culture serving as the reference.

Results: The results indicated that LF-LAM and GeneXpert were concordant in 78% of cases, demonstrating moderate agreement (Kappa = 0.47, $p < 0.001$). GeneXpert exhibited superior diagnostic performance, achieving 100% sensitivity and 96.2% specificity, along with a NPV of 100%. It also showed a strong statistical association with culture results ($\chi^2 = 222.8$, $p < 0.001$). In contrast, LF-LAM displayed moderate sensitivity (65.2%) and specificity (84.4%), with a PPV of 60.8% and an NPV of 86.7%, along with a significant correlation with culture ($\chi^2 = 60.2$, $p < 0.001$).

Conclusion: In conclusion, GeneXpert proves to be highly accurate for diagnosing TB in patients with AHD, while LF-LAM, despite its lower sensitivity, remains a valuable tool for rapid screening, particularly for severely immunocompromised patients or those unable to produce sputum. By integrating LF-LAM for initial screening with GeneXpert and culture for confirmation, TB detection can be enhanced, missed cases can be reduced, and timely treatment can be supported in resource-limited settings.

Patient Characteristics, Treatment Outcomes, and Predictors of Treatment Success in Clinically Diagnosed Versus Bacteriologically Confirmed Tuberculosis in Kenya: Analysis of National Surveillance Data, 2018–2022

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Background: Tuberculosis (TB) is a major cause of morbidity and mortality worldwide. In 2024, 10.7 million people fell ill from TB, with 8.3 million of them being newly diagnosed. Diagnosis of TB is made either clinically (based on symptoms and/or chest X-ray) or by microbiological confirmation. Microbiological detection of TB enables accurate diagnosis and drug susceptibility testing, ensuring that the most effective treatment is initiated promptly. We evaluated differences in patient characteristics and TB treatment outcomes between clinically diagnosed and microbiologically confirmed TB patients and investigated predictors of treatment success in a Kenyan population.

Methods: We obtained and analyzed retrospective, case-based data from the Kenya national surveillance system, including patient demographics, clinical characteristics, and clinical outcomes. The data covered a 5-year period between 2018 and 2022. We performed log-binomial regression models with robust standard errors to predict treatment success.

Results: Over the five-year period, 413,431 patients with TB were registered in the national surveillance system and formed the dataset for our analysis. Microbiological confirmation accounted for a higher proportion of TB diagnosis across the study period, peaking at 59.5% in 2020 ($p < 0.001$). It was more common among males than females (59.4% vs. 48.5%, $p < 0.001$), increased with age ($p < 0.001$), and was less common among people living with HIV (PWH) (47.2% vs 52.8%, $p < 0.001$). Clinical diagnosis was associated with a lower likelihood of treatment success than microbiological confirmation (aRR 0.984; 95% confidence interval [CI] 0.981–0.986). Higher treatment success was observed among females (aRR 1.020, CI 1.018–1.022), younger patients (0–9 years: aRR 1.076, CI 1.071–1.080; 10–24 years: aRR 1.073, 1.069–1.076; 25–44 years: aRR 1.040, 1.036–1.043), those with normal or higher BMI (normal BMI: aRR 1.032; overweight: aRR 1.048), and HIV-negative patients (aRR = 1.076, CI 1.073–1.079). Previously treated patients (aRR = 0.946, 95% CI: 0.941–0.951) had poorer outcomes.

Conclusions: Our findings highlight the importance of expanding access to microbiological confirmation and strengthening integrated care approaches that address comorbidities and incorporate age- and sex-specific interventions.

Keywords: Clinical TB diagnosis, bacteriological TB confirmation, microbiological TB confirmation, TB treatment outcomes

Mortality and Clinical Outcomes of Extrapulmonary Tuberculosis in an Urban African Setting: A Cohort Study in Nairobi, Kenya

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Background: Extrapulmonary tuberculosis (EPTB) remains a significant under-recognized contributor to TB-related morbidity and mortality. Unlike pulmonary TB, EPTB often presents with non-specific symptoms, leading to diagnostic delays and poor clinical outcomes. In Kenya, where TB remains endemic, data on the burden and outcomes of EPTB are limited. This study described the clinical characteristics, complications and mortality associated with EPTB among patients managed in Nairobi.

Methods: We conducted a prospective cohort study involving 98 participants diagnosed with EPTB enrolled in Nairobi. Diagnosis was based on a combination of clinical assessment, radiological findings, histopathology and microbiological confirmation where available. Participants were followed from diagnosis through the course of treatment to document clinical progression and outcomes. Demographic and clinical data were collected using case report forms. Mortality was defined as death attributable to EPTB-related complications during the study period.

Results: Among the 98 participants, the median age was 39.5 years; 56% were female and 37.8% were HIV-coinfected. Overall, 33.7% (n = 33) died due to EPTB-related complications. The most frequently affected EPTB sites were pleural (48.5%) and meningeal (46.4%). The one-month mortality rate was 23.4% (n = 23) with the highest mortality observed among patients with meningeal EPTB.

Conclusion: This study reveals a high mortality rate among EPTB patients in Nairobi, driven by specific severe disease forms. Advanced disease at presentation and co-existing comorbidities like HIV were frequently observed among those who died. The high case fatality rate highlights the severity of EPTB in this population and underscores gaps in early detection and comprehensive management. The findings emphasize the urgent need for improved diagnostic capacity, heightened clinical suspicion and strengthened referral systems for EPTB. Targeted interventions aimed at early diagnosis and timely initiation of appropriate therapy may significantly reduce preventable deaths due to EPTB in high-burden urban settings.

TB-LAMP and Smear microscopy versus Xpert MTB/RIF for TB Diagnosis in HIV-Positive Patients in Kenya

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Background: Loop-mediated isothermal amplification for TB (TB-LAMP) is a nucleic acid amplification test that utilizes the LAMP technology for detection of *Mycobacterium tuberculosis*. TB-LAMP is less expensive than Xpert MTB/RIF, has a shorter turnaround time and higher diagnostic accuracy than sputum smear microscopy. Cost effectiveness of TB-LAMP offers greater opportunities for its application in different settings, but its performance among HIV-positive patients is not well established. This study sought to examine diagnostic performance of TB-LAMP among persons living with HIV.

Methods: A hospital-based cross-sectional study was conducted. Persons presenting with symptoms suggestive of TB were consecutively enrolled into the study. Along with regular TB diagnostics using the Xpert MTB/RIF assay and smear test, additional TB-LAMP tests were conducted to evaluate discrepancies in results and associated factors.

Results: A total of 903 patients were enrolled. The positive agreement percentages for the smear test and TB-LAMP, compared with the Xpert MTB/RIF assay, were 54.3% (95% CI: 46.6-61.8%) and 76.6% (95% CI: 69.9-82.6%), respectively. The negative agreement percentages for the smear test and TB-LAMP, compared with the Xpert MTB/RIF assay, were 90.1% (95% CI: 87.8-92.1%) and 94.7% (95% CI: 95.9-99.9%), respectively. Among HIV positive cases (n=646), positive agreement percentages for the smear test and TB-LAMP, compared with the Xpert MTB/RIF assay, were 42.5% (95% CI: 32.9-52.4%) and 68.9% (95% CI: 59.1-77.5%), and 70.8% (95% CI: 32.9-52.4%) and 87.5% (95% CI: 74.7-95.2%) among HIV negative persons respectively. Factors such as being over 60 years of age (adjusted OR: 7.6, 95% CI: 0.72-80.57), loss of appetite (aOR: 0.3, 95% CI: 0.14-0.78), and HIV status (aOR: 3.1, 95% CI: 1.06-9.34) were associated with discrepancies in TB-LAMP and the Xpert MTB/RIF results.

Conclusion: TB-LAMP was shown to be less sensitive than the Xpert MTB/RIF assay, but more sensitive than sputum smear microscopy in both HIV positive and negative populations. It can replace smear microscopy in detecting TB, especially in peripheral clinics. Overall comparability with Xpert MTB/RIF is modest under various clinical and operational conditions.

Correlates of Tuberculosis Treatment Adherence in Igembe North, Meru County, Kenya

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Background: Tuberculosis (TB) remains a major global public health concern due to its high morbidity and mortality. According to the World Health Organization Global Tuberculosis Report (2022), only 86% of TB patients successfully completed treatment, while approximately 6% of new and relapse cases defaulted treatment in 2020. Default rates ranged from 1% to 13% across high-burden countries. In Kenya, the treatment success rate stood at 85% in 2021, with a loss to follow-up rate of 5.4%. Adherence to TB treatment is critical for improving treatment outcomes, reducing morbidity and mortality, preventing drug-resistant TB, and limiting community transmission. This study aimed to determine factors associated with adherence to TB treatment in Igembe North Sub-County, Meru County.

Methods: An analytical cross-sectional study design was employed. Data were collected from 10 purposively selected health facilities among patients aged 18 years and above undergoing TB treatment. A sample size of 253 participants was determined using Fisher et al.'s formula. Proportional allocation and systematic random sampling were applied to select participants. Data was collected using interviewer-administered structured questionnaires. Analysis was conducted using Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics, chi-square tests, and logistic regression analyses were performed, with statistical significance set at $p < 0.05$.

Results: Adherence to TB treatment varied among participants, with 47% demonstrating moderate adherence, 37% poor adherence, and 17% good adherence. Significant associations were observed between adherence and marital status ($\chi^2=20.421$, $p=0.002$), as well as knowledge of TB transmission ($\chi^2=40.395$, $p=0.002$). Health service delivery factors, particularly provider attitude, showed strong association with adherence ($\chi^2=27.777$, $p<0.001$). However, medicine-related factors were not significantly associated ($\chi^2=10.247$, $p=0.365$).

Conclusion: Adherence to TB treatment is influenced by multidimensional factors, including socio-demographic characteristics, patient knowledge, perceptions, and health system factors. Interventions targeting these domains are essential to improve treatment outcomes.

Assessing Time to Tuberculosis Diagnosis among Prisoners in Kangeta GK Prison, 2023–2024

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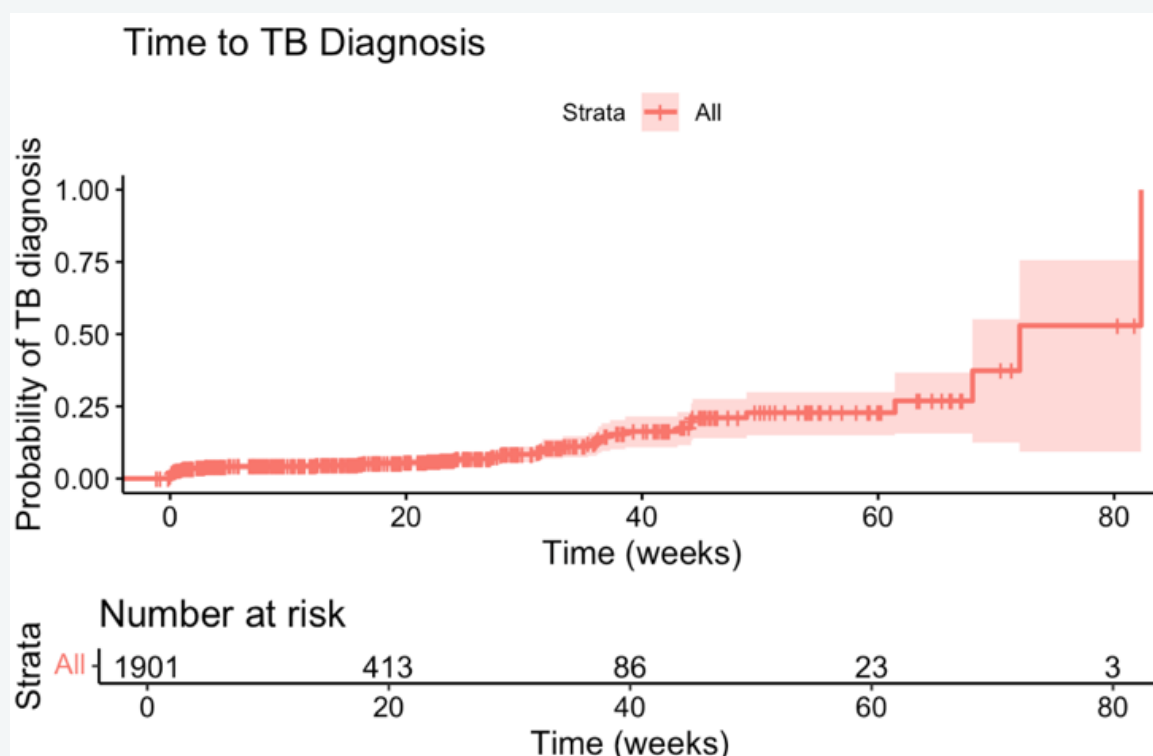
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Introduction: Tuberculosis (TB) remains a major public health challenge, particularly in prisons, where overcrowding and poor ventilation facilitate transmission. Prison populations have a substantially higher TB burden than the general population, especially in low- and middle-income countries. Delayed diagnosis increases the risk of disease transmission and poor treatment outcomes. This study assessed the time to TB diagnosis among prisoners at Kangeta GK Prison between January 2023 and December 2024 and described the timing of treatment initiation following diagnosis.

Materials and Methods: A retrospective cohort study was conducted among 81 prisoners diagnosed with TB during the study period. Data were extracted from prison health records, TB registers, and the TIBU database. The primary outcomes were the time from symptom onset to TB diagnosis and the interval between diagnosis and treatment initiation. Data were analyzed using descriptive statistics and logistic regression.

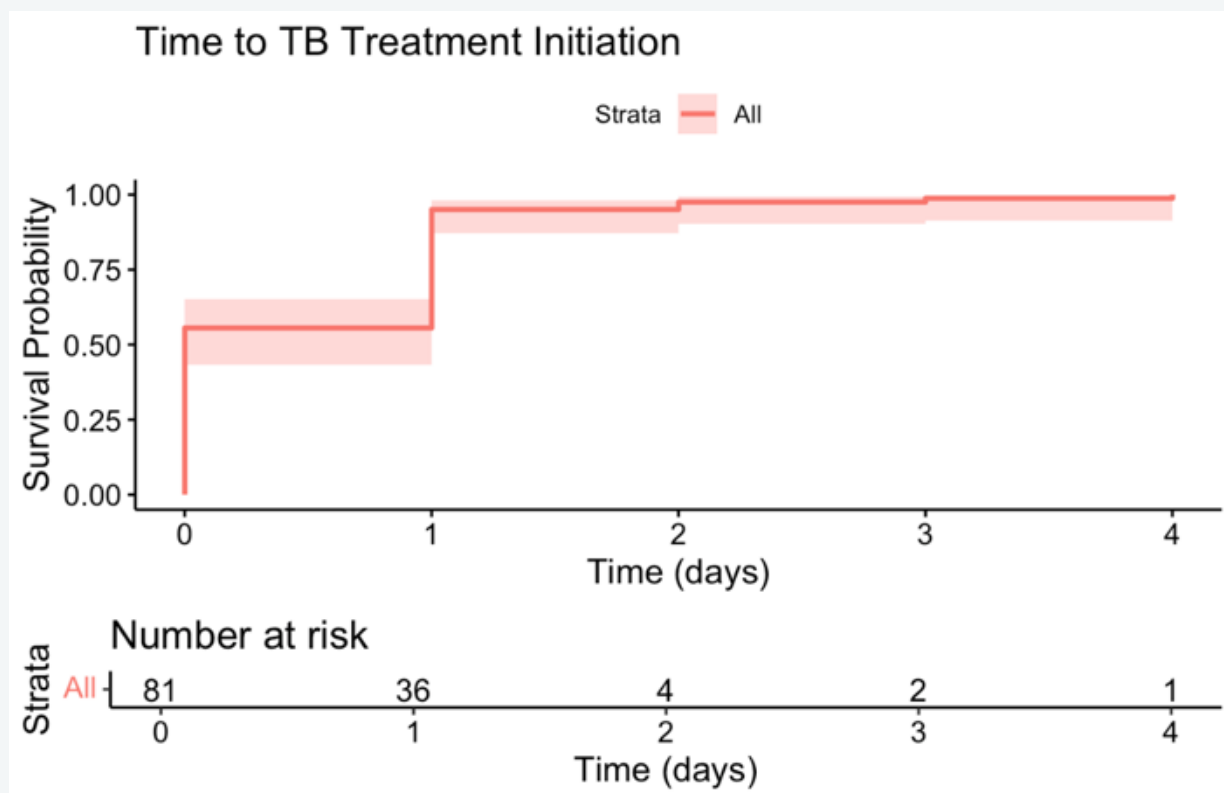
Results: The median time to TB diagnosis was 1.1 weeks (IQR: 0.1–27.9 weeks). Overall, 62% of prisoners were diagnosed within three months of symptom onset, while 11% were diagnosed after 4–6 months, 21% after 7–11 months, and 6.2% experienced delays exceeding one year.

Time to Tb diagnosis (note– red line shows the increasing probability over time)



Treatment initiation was generally prompt: 56% of patients started treatment on the day of diagnosis, 40% within one day, and fewer than 5% experienced delays of two to four days.

Time to treatment initiation (note— red line shows the increasing probability over time)



Discussion and Conclusion: Although TB treatment was initiated rapidly after diagnosis, substantial delays in diagnosis were observed among a proportion of prisoners, indicating missed opportunities for early case detection. The efficient initiation of treatment suggests strong linkage to care within the prison health system, likely supported by standardized TB management protocols and the TIBU reporting system. Strengthening routine TB screening, early case detection, and timely diagnostic services in prison settings is essential to reduce diagnostic delays, improve patient outcomes, and limit ongoing TB transmission.

Leveraging Unique Patient Identifier Prefixes to Enhance TB Case Management in the Kenya-Uganda Border: Lessons from the Tuberculosis Implementation Framework Agreement (TIFA) Project in Kenya

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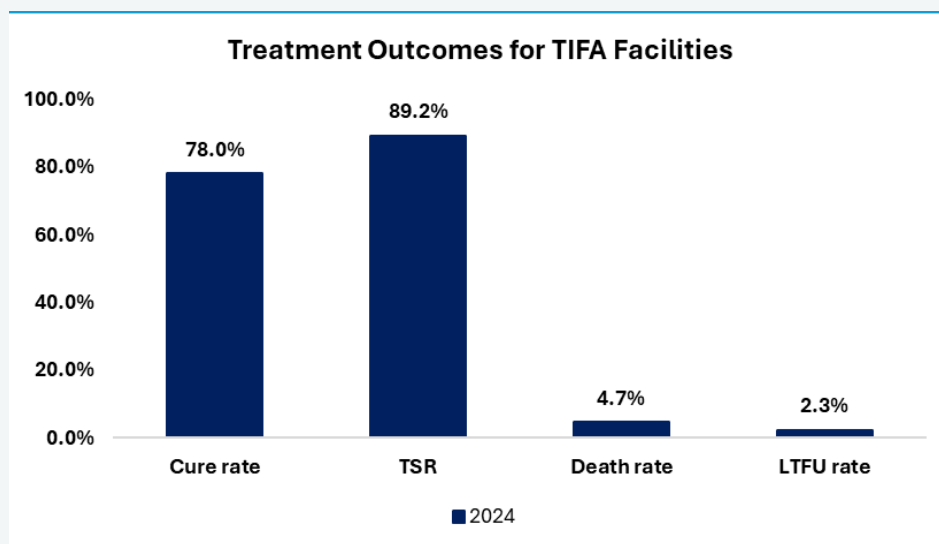
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Summary: We evaluated the implementation of unique patient identifier prefixes to enhance tuberculosis (TB) case management along the Kenya-Uganda border. The findings demonstrate significant improvements in treatment outcomes, emphasizing the importance of data tracking for mobile populations.

Background: Effective management of tuberculosis (TB) is critically impacted by migration patterns, particularly along the Kenya-Uganda border. The lack of standardized patient identifiers complicates patient tracking and continuity of care, leading to suboptimal treatment outcomes.

Intervention: We explored the implementation of unique patient identifier prefixes through the Tuberculosis Implementation Framework Agreement (TIFA) to enhance TB case management. We conducted a descriptive cross-sectional study across selected health facilities in nine counties along the border. The intervention involved registering TB patients with a TIFA prefix in the Kenyan National TB Surveillance System (TIBU) and training healthcare workers on its utilization for tracking and follow-up.

Results: In this study, we evaluated a total of 1,650 tuberculosis (TB) patients registered in TIBU across nine counties along the Kenya-Uganda border during the year 2024. The treatment outcomes were notably improved for patients identified with a TIFA prefix. Specifically, the overall treatment success rate for these patients was 89.2%, the death rate was 4.7%, and the lost-to-follow-up rate was significantly reduced to 2.3%, which is within the acceptable target.



Conclusion: Leveraging unique patient identifiers is essential for improving TB case management, particularly in cross-border settings. This study highlights the effectiveness of the TIFA prefix in facilitating patient tracking and continuity of care, ultimately enhancing health outcomes for vulnerable populations. The findings suggest that similar strategies could be adopted in other regions facing challenges with TB management due to mobility.

Promoting Occupation health through Tuberculosis education and staff screening using Computer Aided Detection enabled Xrays at Portreitz Subcounty Hospital, 2024.

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Background: Tuberculosis (TB) remains a major global public health concern, especially in high-risk environments such as healthcare settings where prolonged human interaction occurs. Portreitz Sub-County Hospital, a Level 4 public healthcare facility with 262 staffs has prioritized occupational health and TB prevention. In 2021, the hospital initiated biannual symptomatic TB screening among healthcare workers (HCWs), with no staff with TB detected since. In October 2024, the facility enhanced its screening approach by incorporating Computer-Aided Detection (CAD) chest X-ray technology to improve early TB identification.

Objective: To improve TB identification and prevent its transmission among healthcare workers, while promoting a safe and informed workplace.

Methods: In 2024, a total of 128 out of 262 staff members (49%) underwent symptomatic TB screening using a standardized screening tool. Of these, 68 HCWs were screened using CAD chest X-ray technology, which was borrowed from a neighboring facility for one day. Regular training sessions through CMEs and educational forums were held to increase awareness about TB symptoms, modes of transmission, prevention strategies including initiation of TPT and treatment. Staff were provided with informational materials to improve knowledge and preparedness related to TB management and infection control.

Results: Among the 68 HCWs screened using CAD chest X-ray, ten were identified as presumptive TB cases. Further investigations confirmed TB in two HCWs: one bacteriologically confirmed case and one clinically diagnosed case. Both were promptly linked to treatment. Two others were diagnosed with pneumonia and one with a cardiac condition; all were referred for appropriate care. Questionnaires and staff interviews revealed that 45% of staff reported increased awareness of TB following sensitization efforts. These initiatives led to enhanced understanding of TB prevention and management. There was also a notable increase in the uptake of TB Preventive Treatment (TPT), with more staff actively seeking preventive care and adhering to treatment protocols.

Conclusion: TB screening initiative at Port Reitz Sub County Hospital illustrates the impact of proactive innovative approach of CAD chest X-ray screening to early detection of TB and other conditions among HCWs. Expansion of such initiatives across other healthcare facilities is recommended.

Clinical Profiles and Therapeutic Outcomes of Drug-Resistant Tuberculosis (DRTB) in Kericho County: A Retrospective Analysis (2025–2026)

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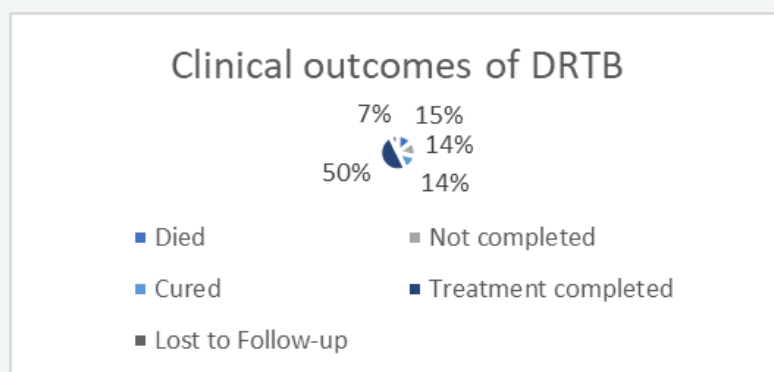
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Background: Drug-Resistant Tuberculosis (DRTB) represents a formidable challenge to Kenya’s National Strategic Plan, characterized by heightened morbidity and complex clinical management. In Kericho County, the intersection of multi-drug resistance and HIV necessitates a data-driven approach to identify localized drivers of transmission and treatment failure.

Objectives: This study delineated clinical-demographic profiles, drug-resistance phenotypes, and therapeutic outcomes among DRTB patients, identifying socio-behavioural and systemic determinants influencing resistance and care-cascade attrition.

Methodology: A retrospective analysis was conducted on 14 laboratory-confirmed DRTB cases in the TIBU system (January 2025–January 2026). Confirmation was achieved via GeneXpert MTB/RIF and Line Probe Assay (LPA). Variables analysed included BMI, resistance patterns (RR, monoresistance, polyresistance), HIV status and social determinants.

Results: The cohort exhibited a marked male preponderance (71.4%) and a broad age distribution (3–50 years). Pulmonary involvement was near-universal (92.8%). Significant nutritional and immunological vulnerability were observed: BMI values reached as low as 14.7 (severe wasting), and HIV co-infection prevalence was high at 57.1% (n=8). Rifampicin resistance (RR-TB) was the dominant phenotype (n=8), followed by monoresistance (n=4) and polyresistance (n=2). Alcoholism 35.7% (n=5). The treatment completion rate was 71.4% (n=10), with adverse outcomes including a 14.3% mortality rate (n=2) and loss to follow-up.



Conclusions: While therapeutic success exceeds 70%, mortality and attrition signify critical gaps in retention. Chronic alcoholism is a critical driver. Its likely compromised adherence to previous first-line treatments, leading to the development of Rifampicin Resistance (RR-TB) and barrier to completing the long DRTB treatment course, directly contributing to the “loss to follow-up”.

Systemic challenges in case-finding or diagnostic accessibility resulting to late diagnosis, severe wasting and high co-infection rate.

Recommendations

- Institutionalize integrated HIV/DRTB clinics.
- Strengthen active case finding / diagnostic of DRTB
- Establish peer support groups for targeting male patients
- Integrate nutritional rehabilitation and substance use counselling into the TB DOTS framework.

Factors Associated with Mortality among Drug-Resistant TB Patients in Kenya: A Retrospective Cohort Study in Ten Counties

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Background: Drug-resistant tuberculosis (DR-TB) remains a significant public health challenge in Kenya, contributing substantially to morbidity and mortality despite recent improvements in treatment and access to care. Understanding the factors associated with mortality among DR-TB patients is crucial for targeted interventions and patient centered management strategies.

Objective: To identify and analyze the clinical, demographic, and health system factors associated with mortality among DR-TB patients in ten counties in Kenya.

Methods: A retrospective cohort study was conducted using National TB surveillance data (TIBU) from January 2020 to December 2024, involving 1,641 notified DR-TB patients across ten counties. Variables such as age, HIV status, nutritional status, resistance pattern, prior treatment history, and mode of care were analyzed using survival analysis and Cox proportional hazards regression to determine predictors of mortality.

Results: Overall mortality was 6.8% (n=111). Compared with survivors, patients who died were significantly more likely to have RR-TB (68.5%), to be HIV-positive (55.0%), to be malnourished (68.5%), to receive inpatient care (6.3%), and to have a comorbidity (41.4%). Patients who died were also more likely to have been previously lost to follow-up and re-enrolled (11.8%) or to have reinfection (18.2%). No statistically significant differences were observed in age category, sex, or TB type.

Conclusions: HIV co-infection, undernutrition, previous treatment interruptions, reinfection, and comorbidities significantly influence mortality among DR-TB patients in Kenya. Targeted strategies addressing nutritional support, comorbidities management, timely ART initiation, OI screening, adherence support and strengthened community health system responses are essential to improve survival outcomes.

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Clinical Outcomes and Diagnostic Challenges of Pediatric Tuberculosis in Kenya: 2014 Review

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Background: Tuberculosis (TB) remains a major public health concern in Kenya, particularly among children who are highly vulnerable due to diagnostic challenges and rapid disease progression. In 2024, Kenya reported approximately 96,000 TB cases, with 13% occurring in children under 14 years.

Study Design / Methods: A retrospective review was conducted at Whiterose Medical Centre, Kenya. Clinical records of pediatric TB patients initiated on treatment in 2024 were analyzed. Diagnosis was based on Ministry of Health screening tools, clinical evaluation, and chest radiography. Data on demographics, clinical presentation, and treatment outcomes were reviewed.

Results: Out of 50 TB patients, 23 (46%) were children under five years. Females accounted for 61% (14/23) and males 39% (9/23). Diagnostic challenges included non-specific symptoms, low bacterial load, and difficulty obtaining sputum samples. Key diagnostic indicators included poor growth, recurrent respiratory symptoms, and developmental regression. Treatment outcomes were favorable, with an average weight gain of 2.1 kg and marked clinical improvement, including symptom resolution and improved appetite. Nutritional support, including Ready-to-Use Therapeutic Food (RUTF), significantly contributed to recovery. Case reviews highlighted delayed diagnosis due to misclassification and specimen collection challenges.

Conclusions and Recommendations: Early screening, strong clinical suspicion, and integrated nutritional support are critical in managing pediatric TB. Strengthening diagnostic capacity and timely treatment initiation, particularly in children under five, is essential to reduce morbidity and mortality.

A Higher Mortality in HIV Positive Rifampicin Resistant TB Patients: A Retrospective Analysis from Kilifi County, Kenya

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Introduction: Drug-resistant tuberculosis remains a major challenge in high-burden settings, especially with HIV co-infection. Despite improved diagnostics and treatments, outcomes for rifampicin-resistant and multidrug-resistant tuberculosis are suboptimal, with HIV increasing mortality globally, including Kilifi County. This study compares treatment outcomes by resistance pattern and HIV status among patients.

Methodology: We conducted a retrospective analysis of treatment outcomes among 106 patients diagnosed with drug-resistant TB (77 HIV-negative and 29 HIV-positive). Data were analysed using RStudio version 4.5.2. Outcomes were classified according to WHO definitions: cured, treatment completed, died, lost to follow-up. Patients were stratified by resistance pattern: MDR-TB, Monoresistant TB, RR-TB, pre-XDR-TB, and poly-drug resistant (PDR-TB).

Results: Among HIV-negative patients (n=77), treatment success was 84.5% with 9.1% mortality and 3.9% loss to follow-up. HIV-positive patients (n=29) had lower success (72.4%), higher mortality (20.7%), and 6.9% loss to follow-up. In RR-TB, success was 82.0% (HIV-negative) vs 63.7% (HIV-positive), with mortality threefold higher in HIV-positive. MDR-TB and monoresistant cases showed high success, especially among HIV-positive patients.

Discussion & Recommendations: Rifampicin resistance drove poor treatment outcomes, with HIV co-infection increasing mortality among RR-TB patients. Monoresistant and MDR-TB cases responded well, showing that tailored regimens and integrated HIV-TB care can achieve strong outcomes. Scaling up rapid diagnostics, shorter regimens, optimized ART, and targeted support for HIV-positive RR-TB patients is essential to reduce disparities and progress toward End TB targets.

Targeted community outreach integrating AI-assisted chest X-ray improves tuberculosis case detection among high-risk men in Kiambu County, Kenya

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Introduction: Tuberculosis remains a major public health challenge in Kenya. High-risk settings e.g. informal settlements, alcohol dens, and drug rehabilitation centres are characterized by overcrowding, poor ventilation, and limited access to healthcare, increasing the risk of TB transmission. Men are disproportionately affected and often delay seeking care, resulting in missed opportunities for diagnosis through conventional facility-based approaches. This intervention aimed to enhance early TB detection and prompt linkage to treatment among high-risk men in Kiambu County through targeted community-based active case-finding.

Methods: Between June and December 2025, four outreach activities targeting alcohol dens and areas with high numbers of people who use drugs were conducted across Gatundu North, Thika, and Lari Sub-Counties. Symptom screening was followed by AI-assisted digital chest X-ray and confirmatory molecular testing for eligible individuals. Integrated services included nutritional assessment, random blood sugar testing, and counselling. Data were captured using TIBU Lite, and TB diagnosis followed Ministry of Health guidelines. All confirmed cases were initiated on treatment.

Results: A total of 2891 attended the outreaches (56% men), 1,249 individuals underwent symptom screening (44% among male vs 42 % among female). Chest X-rays were performed for 816 individuals (65%), with men accounting for 56%. Molecular testing was conducted among 124 participants (15%) with high CAD scores, of whom 60% were men. Confirmatory testing identified 18 people with TB (15%), 78% being men, including one male with drug-resistant TB. All diagnosed individuals were initiated on treatment, achieving a 100% linkage-to-care. Undernutrition was higher among men (34%) than women (19%). Random blood sugar testing in one outreach identified 11% with pre diabetes and 6% with diabetes.

Conclusion: Targeted community-based TB screening reached men, improved early case detection, and achieved complete linkage to treatment. Scaling up gender-responsive outreach integrating TB screening with nutritional and metabolic assessment could strengthen early diagnosis and person-centred care in high-burden settings.

Congenital Drug-Resistant Tuberculosis in a Preterm Neonate: Successful Management in a Resource-Limited Setting – A case of Mama Lucy Kibaki Hospital

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Background: Congenital tuberculosis (TB) is a rare but life-threatening condition, especially in preterm and low birth weight infants. The challenge is greater in cases of drug-resistant tuberculosis (DRTB), compounded by limited pediatric drug formulations and maternal comorbidities such as untreated TB and HIV. Early diagnosis and comprehensive care are essential for survival.

Study Design: This was a descriptive case study documenting the clinical presentation, diagnosis, management, and outcomes of a preterm neonate with congenital DRTB in a resource-limited setting.

Results: A female neonate was born at 32 weeks gestation weighing 1.1 kg to a mother who was HIV positive not on HAART, never attended antenatal clinic and was diagnosed postpartum with rifampicin-resistant TB. Due to maternal infection and the infant's clinical condition, congenital TB was suspected and confirmed through radiological findings. The neonate required specialized neonatal care for respiratory distress, prematurity, and temperature instability. Management was complex due to the absence of pediatric DRTB formulations, necessitating reconstitution of adult drugs administered in carefully measured doses. HIV prophylaxis was given, supportive care, feeding and close monitoring. During treatment, the neonate developed severe anemia and was transfused with two units of blood, gradually improved, with steady weight gain and stabilization of clinical parameters. HIV PCR results were negative. At four months, the infant was discharged for outpatient care, successfully completed 9-month DRTB treatment with a weight of 9.2kg.

Conclusion: Successful management of congenital DRTB in high-risk neonates is achievable with early diagnosis, individualized treatment, and comprehensive care.

Recommendations: Strengthen TB screening in pregnancy, improve access to child-friendly DRTB formulations, integrate TB/HIV services, availability of Pediatric ECG machines.

Evolution of pulmonary abnormalities following tuberculosis treatment in Kenyan children

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Background: Post-tuberculosis lung disease (PTLD) is increasingly recognised as a contributor to long-term morbidity. Paediatric data describing abnormalities evolution after tuberculosis (TB) treatment remain limited. Current PTLD definitions, largely derived from adults, may underestimate disease burden in children.

Methods: We conducted a prospective cohort study of children aged ≤ 15 years treated for TB in Kenya and followed for 24 months. Analyses were restricted to 195 children with complete clinical and radiographic data at months 6, 12, and 24. Post-TB abnormalities were assessed across two domains: respiratory signs and symptoms, and chest radiography. Lung function was additionally assessed cross-sectionally at month 24 in children aged ≥ 5 years. Abnormalities were defined as present if any domain was abnormal and as multiple when ≥ 2 domains were abnormal.

Results: Among 195 children, any abnormality occurred in 103 (52.8%) at month 6, declining to 82 (42.1%) and 48 (24.6%) at months 12 and 24. (Table 1). Respiratory signs/symptoms were most frequent: 79 (40.5%), 66 (33.8%), and 38 (19.5%) at months 6, 12, and 24 while radiographic abnormalities declined from 42 (21.5%) to 24 (12.3%) and 15 (7.7%). At month 12, most abnormalities were confined to a single domain (74/195, 37.9%), with few involving both domains (8/195, 4.1%).

Among 48 children with spirometry at month 24, 17/48 (35.4%) had abnormal lung function, predominantly restrictive. Among 45 with complete multi-domain assessment, abnormalities were mainly single-domain (23/45, 51.1%), with few involving two (4/45, 8.9%) or three domains (1/45, 2.2%).

Conclusions: Respiratory abnormalities following TB in children are common and decline over time, with most occurring within a single domain and limited overlap between clinical and radiographic findings. Despite this, over one-third had abnormal lung function at month 24, indicating persistent impairment. These findings highlight the need for child-specific PTLD definitions and routine post-TB follow-up, including lung function assessment.

Table 1. Distribution of abnormalities across domains over time

Outcome	Month 6 (n=195)(%)	Month 12 (n=195)(%)	Month 24 (n=195)(%)	Month 24 multi-domain subset (n=45)(%)
Any abnormality (≥ 1 domain)	103 (52.8)	82 (42.1)	48 (24.6)	23 (51.1)*
Respiratory signs/symptoms	79 (40.5)	66 (33.8)	38 (19.5)	22 (48.9)*
Radiographic abnormalities	42 (21.5)	24 (12.3)	15 (7.7)	5 (11.1)*
Lung function abnormality[†]	—	—	—	17 (35.4) [†]
2 domains abnormal	18 (9.2)	8 (4.1)	5 (2.6)	4 (8.9)*
3 domains abnormal	—	—	—	1 (2.2)*

** Percentages in the Month 24 multi-domain subset are based on n=45 children with complete clinical, radiographic, and lung function assessment. Among these, abnormalities were present in one domain in 22 (48.9%), two domains in 4 (8.9%), and all three domains in 1 (2.2%).*

† Lung function was assessed in 48 children; percentages reflect those tested.

All other percentages are based on the total cohort (n=195) at each timepoint. “2 domains” at Months 6, 12, and 24 refers to concurrent abnormalities in respiratory signs/symptoms and chest radiography.

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Incentive Spirometry for PostTB Lung Disease: Insights from a Kenyan Cohort

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Background: Posttuberculosis lung disease (PTLD) is a major contributor to chronic respiratory morbidity in Kenya, yet rehabilitative interventions such as incentive spirometry (IS) remain largely underutilized within routine postTB care pathways. Although emerging evidence suggests that IS may improve lung function and overall quality of life for individuals experiencing persistent respiratory symptoms after TB treatment, little is known about its uptake, feasibility, and patient experiences in low-resource community settings.

Study design/Methodology: This study examined PTLD prevalence, symptom burden, and use and perceptions of IS among adults and children previously treated for TB in Githogoro, Kenya. A crosssectional survey was conducted between December 2024 and February 2025 among 83 respondents. Data collected was on respiratory symptoms, PTLD diagnosis, activity limitations, and IS use. Comparisons between symptomatic and asymptomatic PTLD participants were conducted using statistical analysis.

Results: PTLD prevalence was 27.7% (23/83), with 52.2% of diagnosed individuals reporting persistent symptoms such as cough, chest discomfort, and functional limitation. Symptomatic participants experienced significantly more attacks (0.83 vs 0; $p \approx 0.03$) and fewer good days (4.2 vs 5.0; $p \approx 0.02$) than asymptomatic peers. Despite the high symptom burden, none of the PTLDdiagnosed respondents had ever used IS. Overall IS uptake was low (2.4%), limited to two pediatric users, both of whom reported reduced shortness of breath and improved physical activity. Qualitative responses highlighted lack of provider recommendation, low awareness, and limited access to devices.

Conclusion: The Study established gap between PTLD symptom burden and access to rehabilitative care. Integrating IS into TB followup, strengthening provider training, and improving patient education may enhance recovery and support patientcentered care. A targeted randomized controlled trial among symptomatic PTLD patients is warranted to guide policy and practice.

Clinical Significance of Xpert Ultra Trace-Positive Results in Community TB Screening: Insights from 2022 Nairobi Survey

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Background: The deployment of Xpert MTB/RIF Ultra has improved TB detection with higher sensitivity (~91%) compared to earlier tests (~85%). However, the significance of 'trace' positive results, the lowest semi-quantitative level, remains unclear, especially in community screening where subclinical or previous TB cases may be present. Misinterpreting these can lead to unnecessary treatment or missed diagnoses. Thus, the study aimed to examine the microbiological and clinical features of Xpert Ultra trace-positive, culture-negative results from a community TB survey in Nairobi and assess culture positivity on repeat testing.

Methods: This study was part of a TB prevalence survey in nine Nairobi clusters (May-Nov 2022). Participants aged 15 and above with cough and abnormal chest X-ray provided sputum for smear, Xpert Ultra, and MGIT culture. Those with trace-positive Xpert Ultra and negative culture were identified; some underwent follow-up with additional samples for repeat testing.

Results: Out of 1,582 participants, 31 (2.0%) had trace-positive, culture-negative results. Among these (n=31), 55% males, 55% aged 25-44, 48% were HIV-negative (39% unknown), 94% reported diabetes, 90% were non-smokers, and none consumed alcohol. Most reported cough (68%), chest pain (42%), and some had a TB history (7%). Chest X-rays were TB-suggestive in 67%. Seventeen underwent repeat testing; all remained trace-positive, however, about 24% (4/17) of these were culture-positive for TB.

Conclusion: Trace-positive Xpert Ultra results in community settings are sometimes true positives- about 25% showed bacteriological confirmation on retesting. Diabetes was commonly reported among those with Xpert trace positivity. These results suggest that trace-positive results should prompt further clinical assessment, including repeat testing, rather than dismissing them as false positives. For TB programs and clinicians in Kenya, implementing a standardized protocol for trace-positive results is essential to improve case detection and prevent missed diagnoses. Finally, the high prevalence of the reported diabetes (94%) among trace-positive individuals highlights the need for further research on the burden of diabetes and TB coinfection in community-based settings.

Cheap in the Beginning but Expensive at the end, Self –Diagnosis and Medication over the Counter.

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Introduction: Over the counter drugs are drugs or product which is used by the patient with or without prescription of a physician or registered medical practitioner. Antibiotics are powerful, lifesaving medications that treat bacterial infections like Amoxicillin and Fluoroquinolones for example, ciprofloxacin that are associated with TB treatment, but not for every sickness, some medicines are not right with certain medical conditions for example, people with high blood pressure should not take certain decongestant, some people also are allergic to certain medicine. Our objective therefore was to compare the prescribed drugs over the counter verses self-diagnosis medication and its effectiveness to the user.

Methods: This study was Qualitative interview conducted in Kisumu-Nyamasaria western Kenya, whereby 6 community pharmacies (retail) owned by pharmacist information up to 150 from each pharmacy, through interviews like, if they have prescription, type of drugs they need, nature of complain and a period in which the problems has been there and how many similar cases have been repeated by same customer.

Results: Between the month of January and February 2026, a total of 900 clients purchased drugs over the counter in 6 different pharmacies whereby 150 clients in each pharmacy having different complains, after self-medication, the following observation were met: Those who bought drugs with prescription were as follows, 30 (20%), 10 (6.6%), 20 (13.3%), 0 (0%) 15 (10%) and 0 (0%). Those without prescription were, 120 (80%), 140 (93%), 130 (86.6%), 150 (100%), 135 (90%), and 150 (100%). In our finding, we also noted the repeated cases as follows, 12 (8%), 24 (16%), 17 (11.3%), 11 (7.3%), 8 (5.3%) and 15 (10%). We also observed that the cases of men were few that is 194 out of 900 (21.55%) compared to that of female 706 (78.4%).

Conclusions/ Recommendations: The ability to purchase antibiotics without Laboratory investigations and doctor's prescription results to widespread misuse, under dosing, and inappropriate treatment of infections, promoting Antimicrobial resistant (AMR), which at the end is very expensive to manage particularly in low- and middle-income countries (LMICs), It is also important to encourage our patient on the importance of investigation and doctor's prescription before taking any medication that is cheaper compared to OTC which is more expensive and hard to manage.

Lung function in African children and adolescents with HIV: spirometric patterns, risk factors and clinical presentation.

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Introduction: Children and adolescents with HIV (CAHIV) may experience recurrent and severe lung infections, and are at risk of subsequent residual lung sequelae which may manifest as impaired lung function. We sought to characterize lung function and risk factors for impaired lung function in a cohort of CAHIV on ART in Kenya.

Methods: CAHIV aged ≤ 19 years in care at a public hospital in Kenya were enrolled into a longitudinal cohort study. They underwent clinical evaluation and spirometry at enrolment. Impaired lung function was defined as spirometer parameter below lower-limit of normal ($<LLN$) of international reference norms. Forced expiratory volume (FEV1), forced vital capacity (FVC), forced expiratory flow between 25th to 75th (FEF2575) were measured.

Results: The 248 children were of median age 13.0 (IQR 11.2-16.2) years, 45% were female, 60% lived in one-two roomed houses, 45% of families used pollutant cooking fuel. All were on ART, 17% had prior TB, 34% prior pneumonia, 82% were virologically suppressed, 80% had normal CD4 counts, 8% had low BMI, and 14% were stunted. Impaired lung function was present in 64 (26%) of the children, 32 (13%) had obstruction, 27 (11%) had restriction, 5 (2%) had mixed impairment (both obstruction and restriction) and 35 (14.1%) had small airway flow limitation (FEF2575 $<LLN$). Impaired lung function was associated with previous TB (OR 3.1), hospitalization at TB diagnosis (OR 5.0), exercise intolerance (OR 5.5), severe respiratory symptoms (OR 3.1), and poor quality of life (OR 3.1), $p < 0.05$ for all factors.

Conclusion: One-quarter of this cohort of CAHIV are living with impaired lung function manifesting both obstructive or restrictive types of impairment and previous TB was a risk factor. Clinical indicators of impaired lung function include severe symptoms and low exercise tolerance. Structured interventions are needed to provide optimal care specific to their needs.

Table: Characteristics of Children with HIV, Spirometric Abnormalities and Associated Factors

Characteristic	Detail	Number (N)	Freq	Percent
Age in Years	Median age [IQR]	248	13	[16.2,11.2]
Sex	Male	248	137	55.2%
Prior TB	Yes	232	39	16.8%
Hospitalised with TB	Yes	39	20	51.3%
Current Body Mass Index	BMI-Z score < -2	248	20	8.1%
Spirometric Lung Function Parameter				
Obstruction	FEV1/FVC $< LLN$ and FVC $> LLN$	248	32	13%
Restriction	FVC $< LLN$ and FEV1/FVC $> LLN$	248	27	11%
Obstruction and Restriction	FVC $< LLN$ and FEV1/FVC $< LLN$	248	5	2%

Medium to small airway flow limitation	FEF2575<LLN	248	35	14%
Any abnormality of lung function	Any parameter <LLN	248	64	26%
Factor associated with low FEV1	Normal FEV1 (N=204)	Low FEV1 (N=44)	Odds Ratio	95% CI
	Freq (%)	Freq (%)		
<i>Previous TB</i>				
Prior TB	26 (67%)	13 (33%)	ref	
No prior TB	166 (86%)	27 (14%)	3.1*	1.4, 6.7
<i>TB hospitalisation status</i>				
TB and hospitalised	11 (55%)	9 (45%)	5.0*	1.9, 13.3
TB not hospitalised	14 (78%)	4 (22%)	1.8	0.5, 5.7
No prior TB	166 (86%)	27 (14%)	ref	
<i>Exercise Intolerance**</i>				
Normal distance for age (80%+)	101 (89%)	13 (11%)	Ref	
Mild intolerance (70-79%)	79 (85%)	14 (15%)	1.4	0.6, 3.1
Moderate to severe intolerance (<70%)	24 (58%)	17 (42%)	5.5*	2.4, 12.9
<i>Current CD4 percent</i>				
CD4% <15%	3 (43%)	4 (57%)	6.4*	1.4, 29.9
CD4% 15- 24%	33 (83%)	7 (17%)	1.0	0.4, 2.5
CD4% 25%+	158 (83%)	33 (17%)	ref	ref
<i>Chronic Respiratory Symptoms</i>				
No symptoms	143 (87%)	22 (13%)	ref	
Moderate symptoms	38 (78%)	11 (22%)	1.9	0.8, 4.2
Severe symptoms	23(68%)	11 (32%)	3.1*	1.3, 7.3
<i>Quality of Life</i>				
CAT score 0 – 4 (Good)	168 (85%)	30 (15%)	ref	ref
CAT score 5 – 9 (Fair)	18 (81%)	4 (18%)	1.2	0.4, 3.9
CAT score 10+ (Poor)	18 (64%)	10 (36%)	3.1*	1.3, 7.4
IQR = inter-quartile range. CI = confidence interval. *P value < 0.05				
**Exercise tolerance from 6-minute walk test. Percent of predicted distance walked for age and sex.				

Monocyte -to- Lymphocyte Ratio for Paediatric Tuberculosis Diagnosis: A Comparison of Confirmed, Unconfirmed and Unlikely Cases

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Introduction: Bacteriological confirmation of tuberculosis (TB) in children remains challenging due to the paucibacillary nature of the disease and difficulties in obtaining appropriate specimens. Consequently, diagnosis often relies on clinical assessment, chest radiography, and limited microbiological tools. There is growing interest in host-derived biomarkers, such as the lymphocyte-to-monocyte ratio (LMR). The study aimed to evaluate the diagnostic utility of LMR in paediatric TB by comparing bacteriologically confirmed and unconfirmed cases.

Methods: A retrospective analysis was conducted among children aged (0-14 years) investigated for TB in a longitudinal cohort paediatric study. Cases were classified as confirmed TB based on GeneXpert MTB/RIF and culture positivity, while children with negative microbiological results were categorized as unconfirmed TB. Absolute lymphocyte and monocyte counts were extracted from complete blood counts performed at baseline visits, and LMR was calculated. Differences between groups were assessed using the Mann–Whitney U test, and receiver operating characteristic (ROC) curve analysis was used to evaluate diagnostic performance.

Results: Among the 296 participants, 42 (14.2%) had confirmed TB while 254 (85.8%) were unconfirmed. The confirmed TB group had a median LMR of 7.77 (IQR: 4.68–17.79), compared to 10.07 (IQR: 5.61–21.51) among unconfirmed cases. Mean LMR was 10.84 ± 8.12 in confirmed TB and 13.26 ± 10.47 in unconfirmed cases, reflecting greater variability in the latter group. The difference in LMR between groups was not statistically significant ($p = 0.217$). ROC analysis yielded an AUC of 0.56, indicating poor discriminatory ability.

Conclusion: LMR showed a trend toward lower values in confirmed paediatric TB but demonstrated limited performance as a standalone diagnostic marker. Given the challenges of bacteriological confirmation of TB in children, diagnosis should continue to rely on integrated approaches including clinical evaluation and chest radiography. LMR may still contribute as part of a composite TB diagnostic strategy among children, warranting further investigation.

Pathways to Diagnosis in Children and Adolescents with Tuberculosis in Nairobi, Kenya

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Background: Tuberculosis (TB) in children is a significant indicator of active TB transmission within communities. Despite global efforts, challenges in diagnosing TB among pediatric populations remain critical, particularly in low- and middle-income countries (LMICs) like Kenya.

Objective: This study aimed to describe the pathway from symptom onset to final TB diagnosis among children and adolescents in Nairobi, Kenya, focusing on healthcare visits, investigations undertaken, and time to diagnosis.

Methods: We conducted a cross-sectional study in three referral healthcare facilities in Kenya. Participants included children aged 0–19 years with confirmed or clinically diagnosed TB. Data were collected through interviews of the caregivers and medical record reviews. Key outcomes included the number of healthcare visits, investigations requested, and time from symptom onset to diagnosis.

Results: Total of 117 participants were recruited, with mean age of 4.6 years. 36% visited health facilities multiple times (3+) before diagnosis. Gene Xpert was requested in 61.5%. Extreme delay from symptom onset to diagnosis (>8 weeks) occurred with 54(46%) of the children. Median time from symptom onset to diagnosis 8 weeks (IQR 1-68). Extreme delay from visit to health facility to diagnosis (>4 weeks) occurred with 28% of children. Median time from first health facility visit to diagnosis was 3 weeks (IQR 1-32). Delays in diagnosis were significantly associated with older caregivers and been HIV Negative.

Conclusion: Delays in TB diagnosis among pediatric patients are influenced by healthcare system factors and caregiver characteristics. Interventions should target improving diagnostic processes, enhancing public awareness, and ensuring accessible and equipped healthcare services.

Hidden Burden of COPD Misdiagnosis in Coastal Kenya across Ages: Diagnostic Gaps and Overlap

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Introduction: Chronic Obstructive Pulmonary Disease (COPD) is an underrecognized cause of respiratory morbidity in Kenya and other low- and middle-income countries (LMICs). Although commonly associated with older adults, increasing evidence shows that early-life exposures-including biomass fuel smoke, environmental pollution, recurrent infections, and poorly controlled Asthma-predispose children and young people to chronic airflow limitation. In coastal Kenya, these exposures are widespread, yet COPD remains underdiagnosed. Clinical overlap with asthma, Pneumonia, and allergic conditions complicates diagnosis. Limited access to Spirometry and reliance on symptom-based assessment further contribute to misclassification across age groups.

Methods: We are conducting a descriptive cross-sectional study across eight public and private healthcare facilities in Mombasa and Kilifi. The study includes facility audits, clinician questionnaires, and retrospective medical record reviews to evaluate spirometry availability, diagnostic practices, and classification of respiratory diseases among children, adolescents, and adults. Data collection is ongoing (2025–2026).

Results: Preliminary analysis included 300 adults and 220 children and adolescents attending asthma and recurrent respiratory disease clinics. Spirometry identified airflow limitation consistent with previously unrecognized COPD in 73/300 adults (24.3%) managed under alternative respiratory diagnoses. A further 34/300 (11.3%) demonstrated airflow obstruction suggestive of asthma-COPD overlap. Only 3/8 facilities had functional spirometry services, and fewer than one-third of clinicians reported routine use of spirometry. Among children and adolescents, 168/220 (76.4%) had documented exposure to at least one COPD risk factor. Persistent respiratory symptoms were recorded in 94/220 (42.7%), while only 18/220 (8.2%) had undergone lung function assessment. Most symptomatic patients were classified as having asthma, recurrent pneumonia, or allergic respiratory disease without spirometry confirmation.

Conclusion: Substantial gaps in objective respiratory disease assessment exist across the life course in coastal Kenya. Underutilization of spirometry may contribute to COPD underdiagnosis in adults and delayed recognition of chronic respiratory impairment among children and adolescents. Strengthening spirometry capacity, clinician training and age-inclusive diagnostic pathways is critical for improving respiratory health outcomes.

Beyond Smoking: A Hidden Burden of Occupational Related COPD in Coastal Kenya

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Introduction: Chronic obstructive pulmonary disease (COPD) is an underrecognized cause of morbidity and mortality in low- and middle-income countries. In Kenya, limited access to spirometry contributes to underdiagnosis and misclassification as asthma. Beyond tobacco smoking, occupational exposures and household air pollution are increasingly recognized as major contributors to COPD in African populations. This study aimed to quantify the burden and characterize the exposure profile of spirometry-confirmed COPD in coastal Kenya, a region with substantial industrial activity.

Methods: We conducted a retrospective cross-sectional analysis of clinical records from selected healthcare facilities in Mombasa County offering spirometry services. Records of patients who underwent spirometry were reviewed. COPD was defined as post-bronchodilator airflow limitation ($FEV_1/FVC < 0.70$) in accordance with international guidelines. Extracted data included demographic characteristics, smoking history, occupational exposures across multiple industries, and exposure to biomass fuels such as firewood.

Results: Spirometry-confirmed COPD revealed a substantial, previously unrecognized burden, predominantly affecting individuals without significant smoking history. These findings highlight the central role of non-smoking risk factors, notably occupational exposures to dust, fumes, and chemical irritants, alongside widespread biomass fuel use.

Conclusion: COPD in coastal Kenya represents a substantial yet neglected, exposure-driven burden. Scaling up access to spirometry, strengthening diagnostic pathways, and reducing occupational and household air pollution are urgent priorities. Without targeted action, a largely preventable cause of respiratory morbidity will continue to be overlooked; addressing these gaps is essential to advancing equitable respiratory health in this setting.

Keywords: COPD, Spirometry, Occupational Exposure, Household Air Pollution, Non-Smoking COPD, Kenya

Enhancing Lung Health with AI-Assisted Chest X-ray Screening: Improving Tuberculosis Detection in Coastal Kenya

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Background: Tuberculosis (TB) remains a leading cause of morbidity and mortality in Kenya, with many cases undiagnosed or detected late. The 2016 Kenya TB Prevalence Survey identified major gaps in case detection, largely due to reliance on symptom-based screening and sputum diagnostics, which have limited sensitivity among asymptomatic individuals and those unable to produce sputum. Chest radiography (CXR) offers a more sensitive tool for identifying pulmonary abnormalities, including subclinical and smear-negative TB. This study evaluated the implementation and contribution of AI-assisted digital CXR screening to TB case detection in coastal Kenya.

Methods: A retrospective review of routine programme data from AI-assisted digital CXR screening activities conducted in Mombasa County between January and December 2025 was undertaken. Screening, referral and diagnostic data were extracted from programme records from both facility-based and community outreach screening activities. Digital CXRs were analyzed using computer-aided detection (CAD) software, and individuals with abnormal CAD scores were referred for GeneXpert testing. Data were summarized using descriptive statistics to describe screening outcomes, referral patterns and TB diagnoses.

Results: A total of 1,126 individuals underwent AI-assisted digital CXR screening. Of these, 187 (16.6%) had abnormal CAD scores and were referred for GeneXpert testing. GeneXpert testing was completed for 171 individuals (91.4% of referrals), resulting in 22 bacteriologically confirmed TB cases. Overall, 12.9% (22/171) of individuals who completed GeneXpert testing were bacteriologically confirmed to have TB. These findings highlight the contribution of AI-assisted CXR screening to TB case detection within routine screening programmes.

Conclusion: AI-assisted digital CXR screening identified bacteriologically confirmed TB cases and supported TB case finding in coastal Kenya. Integration of AI-assisted CXR into routine TB screening programmes should be considered to strengthen early case detection and improve linkage to confirmatory diagnosis in high-burden settings.

Keywords: AI-assisted digital CXR, computer-aided detection, GeneXpert.

Hidden burden of non-tuberculous lung diseases in the prison, A case study of Kamiti prison, Kenya

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Background: Non-tuberculous lung diseases (NTLDs), including chronic obstructive pulmonary disease (COPD), asthma, and lung cancer, contribute substantially to respiratory morbidity and mortality but remain underdiagnosed, especially in high-risk institutional settings such as prisons. Prison populations experience multiple respiratory risk factors before and during incarceration. Pre-incarceration exposures include cigarette smoking, biomass fuel use, mining dust, and occupational hazards, while incarceration-related exposures include woodwork activities, biomass fuel use, floor dust, leather work, overcrowding, and poor ventilation. In this setting, 45% of inmates screened reported pre-incarceration respiratory risk exposures, while 55% reported respiratory risk exposures during incarceration. This suggests a potential burden of undetected NTLDs where screening services are mainly focused on tuberculosis (TB). Integrating NTLD screening with routine TB screening may improve early detection and management.

Methods: A cross-sectional study was conducted among 2,500 inmates at Kamiti Prison between 2025 and 2026. All participants underwent symptom screening. Of these, 1,731 (69.2%) received AI-assisted computer-aided detection (CAD) chest X-ray screening for TB, and 1,605 (92.7%) had CAD scores <40 and were classified as non-presumptive for TB. Among symptomatic participants with risk factors, 130 underwent peak flow testing, and 102 (78.5%) with abnormal results proceeded to spirometry. Participants with obstructive patterns underwent bronchodilator testing to differentiate asthma from COPD.

Results: Among 102 participants who underwent spirometry, 74 (72.5%) had obstructive patterns and 3 (2.9%) had restrictive patterns. Repeat spirometry was not completed in 17 (16.7%) participants. Among those retested, 17 (16.7%) had reversible obstruction consistent with asthma, while 33 (32.4%) had persistent obstruction consistent with COPD. Seven (6.9%) participants with obstructive patterns and nodular chest X-ray findings were referred for CT scans to assess possible lung cancer.

Conclusion: A substantial burden of undiagnosed NTLDs exists among prison populations, demonstrating limitations of TB-focused screening alone. Incorporating AI-assisted chest X-ray, spirometry, and peak flow testing into routine prison health screening could enhance early detection, appropriate management, and prevention of complications.

EP-2-32

PUMUAir: Personalized Digital Air Quality Surveillance to Strengthen Lung Health Prevention and Early Action

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Introduction: Air pollution is a major and under-recognised driver of chronic respiratory symptoms, asthma exacerbations, post-TB lung disease, and delayed care seeking in low-resource settings. PumuAir aims to bridge the gap between environmental exposure monitoring and timely preventive lung health action. This programme evaluates the feasibility and early impact of a digital air quality and health advisory platform.

Methods: We implemented a mixed-methods pilot using low-cost sensors linked to the PUMUAir mobile platform in modelled and actual community, institutional settings. Real-time particulate matter (PM_{2.5}) and other pollutants data were integrated with symptom check-ins and personalised risk alerts. Descriptive analytics were used to assess exposure trends, alert frequency, user engagement, and behaviour change responses. Qualitative feedback from users informed usability and pathway integration.

Results: Early implementation demonstrated high user engagement with exposure alerts and strong acceptability among participants. Peak PM2.5 levels were consistently identified in cooking and traffic-adjacent settings, triggering targeted mitigation advice such as ventilation, fuel-use modification, and symptom escalation prompts. Users reported increased awareness of pollution hotspots, earlier symptom recognition, and improved self-protective behaviours. The platform also generated actionable data that individuals, clinicians, policy makers and governments could use to guide environmental risk reduction strategies.

Conclusion: PumuAir demonstrates the potential of digital air quality/pollution surveillance at an individualized level could support integrated lung health, strengthen prevention pathways, and complement TB and chronic respiratory care. Scalable environmental intelligence can empower communities, clinicians, and health systems to reduce harmful exposures and improve respiratory outcomes.

PUMUAir demonstrates how digital innovation can convert climate and air quality signals into actionable public health intelligence, improving preparedness and strengthens moves toward anticipatory environmental hazard response. By embedding a equity lens, the model supports proportionate prevention, reduces avoidable exacerbations, and informs cross-sector action spanning health, housing, and local government.

Indoor and outdoor fine particulate matter and carbon monoxide concentrations in homes of infants in Nairobi, Kenya

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Background: Early life exposure to air pollution is associated with adverse health outcomes in children however few studies have investigated children's air pollution exposures in urban settings in sub-Saharan Africa (SSA). We measured fine particulate matter (PM_{2.5}) and carbon monoxide (CO) in homes of infants in Nairobi, Kenya and conducted exploratory analysis of exposure factors.

Methods: The Air Pollution Exposures in Early Life and Brain Development in Children (ABC) Study is a prospective pregnancy cohort study which aims to test the association between prenatal exposure to air pollution and neurodevelopmental outcomes in Nairobi, Kenya. A convenience subset of 48 ABC participants was invited to participate in an air sampling home visit. Questionnaires captured household characteristics and self-reported air pollution exposures. Indoor and outdoor 24-hour (24 h) concentrations were measured inside and 1 m outside the house. PM_{2.5} was sampled using standard gravimetric procedures; CO was measured with direct-reading electrochemical sensors.

Results: Forty-eight homes were sampled at median infant age 11.5 months (range 0.8-26.2 months). During sampling, 66.7%, 18.8%, 10.4% and 10.4% of mothers, respectively, reported using liquefied petroleum gas (LPG), ethanol, electricity, and kerosene for cooking. Median indoor and outdoor 24 h PM_{2.5} concentrations (n = 39) were 39.9 ug/m³ (range, 12.8-519.6 ug/m³) and 23.3 ug/m³ (range, 2.6-68.2 ug/m³), respectively.

Most PM_{2.5} concentrations (97% of indoor; 79% of outdoor) exceeded the World Health Organization (WHO) 24 h air quality guideline (AQG) of 15 ug/m³. Median indoor (n = 47) and outdoor (n = 41) 24 h mean CO concentrations were 0.7 ppm (range, 0-33.9 ppm) and 0.0 ppm (range, 0-1.0 ppm), respectively. Mean indoor CO concentrations exceeded the WHO 24 h AQG of 6.2 ppm in 9% of homes.

Conclusions: Despite frequent use of cooking fuels considered to be clean such as LPG and ethanol, PM_{2.5} and CO levels in infant homes in urban SSA often exceeded the WHO AQGs. Expanded studies of children's air pollution exposures in urban SSA are needed to build awareness and inform policy.

Latent tuberculosis infection and SARS-CoV-2 serological responses among healthcare workers in Kiambu County

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Introduction: Mycobacterium tuberculosis (MTB) infection may result in active tuberculosis (TB), or latent TB infection (LTBI). In 2020, at the height of the COVID-19 pandemic, MTB and SARS-CoV-2 (the causative agent of COVID-19) co-infections were reported mostly in high TB burden countries. Surveillance of antibody responses generated from SARS-CoV-2 vaccinated HCWs with latent TB is critical for accurate serological interpretations, which can benefit vaccine booster research. The aim of this study was to estimate the prevalence of LTBI and evaluate the main risk-factors associated with this condition in a cohort of HCWs in Kiambu County.

Methods: We conducted a cross-sectional pilot study among 10 adult participants from the Mary Help Mission Hospital in Kiambu County, Kenya. Demographic and occupational data were recorded. Whole-blood samples were collected and screened for LTBI using the QuantiFERON-TB (QFT)-Plus ELISA kit. SARS-CoV-2 sero-positivity was determined using an Immunoblot device.

Analysis: Data were analyzed using Stata 18 (StataCorp, College Station, TX). Participant characteristics were summarized using descriptive statistics, with continuous variables presented as means and standard deviations and categorical variables as frequencies and percentages. SARS-CoV-2 IgM and IgG antibody responses were analyzed as binary outcomes (positive vs negative).

Results: The mean age was 35.5 years (SD 4.6), and the majority of enrolled participants were female (80%). Overall, 40% (4/10) of HCWs tested positive for latent tuberculosis infection (LTBI) by QFT. Fisher's exact test showed no statistically significant association between vaccination status and IgM seropositivity (two-sided $p = 0.444$).

Conclusions and recommendations: Even with the small sample size, a 40% LTBI prevalence is epidemiologically important and consistent with occupational exposure risks among HCWs in TB-endemic settings. Following COVID-19 infection, fully vaccinated HCWs had higher and more stable levels of IgG. IgG can be used as a serological marker to identify individuals who have received SARS-CoV-2 vaccines.

Rising Serum Tumor Markers in Detecting and Monitoring Pulmonary Metastases

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Background: Pulmonary metastases are common in advanced malignancies and significantly affect patient prognosis. Early detection and continuous monitoring are essential for timely clinical decision-making. This study evaluates whether serial measurements of serum tumor markers (CEA, AFP, CA19-9, CA-125, and PSA) can aid in detecting and monitoring pulmonary metastases.

Design/Study Methodology: This retrospective descriptive study reviewed patients with histologically confirmed malignancies and radiologically confirmed pulmonary metastases. Serial serum tumor marker levels, radiological findings, and clinical records were analyzed. Trends in tumor marker levels were correlated with imaging and clinical progression to assess their diagnostic and monitoring value.

Results: A significant proportion of patients demonstrated rising serum tumor marker levels prior to or concurrent with radiological confirmation of pulmonary metastases. Serial monitoring of tumor markers provided insight into disease progression and treatment response. However, variability in marker levels was observed depending on cancer type and individual patient factors.

Conclusions and Recommendations: Rising serum tumor marker levels have important clinical value in the detection and monitoring of pulmonary metastases. When used alongside imaging and clinical evaluation, these markers can support earlier diagnosis and guide treatment decisions. It is recommended that serial tumor marker monitoring be integrated into routine follow-up for patients at risk of metastatic disease, while considering cancer-specific and patient-specific variations.

Molecular Testing in Lung Cancer: A Laboratory-Based Approach to Precision Medicine

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Background: Lung cancer remains a leading cause of cancer-related mortality worldwide due to late-stage diagnosis and tumor heterogeneity. Advances in molecular diagnostics have transformed lung cancer management by enabling precision medicine through the identification of actionable genetic alterations. This study aimed to describe laboratory-based molecular testing practices in lung cancer and highlight their role in guiding personalized treatment.

Methodology: A retrospective descriptive study was conducted from January 2025 to January 2026 involving the review of 100 medical records of patients diagnosed with lung cancer. Laboratory reports were reviewed to confirm molecular testing performed using next-generation sequencing (NGS) panels. Data collected included patient demographics, histopathological diagnosis, specimen type, molecular alterations identified, and clinical indications for testing.

Results: Among 100 patients reviewed, actionable molecular alterations were identified in 42% of cases. EGFR mutations were the most common, occurring in 24% of patients, followed by KRAS mutations (10%), ALK rearrangements (5%), and ROS1 fusions (3%). Forty-two patients were eligible for targeted therapy based on molecular profiling results. NGS successfully analyzed all specimens, enabling comprehensive assessment of multiple biomarkers from limited tissue samples. Standardized laboratory workflows enhanced the reliability and clinical utility of results, supporting informed treatment decisions and reducing the need for sequential testing.

Conclusions and Recommendations: Molecular testing is a critical component of precision medicine in lung cancer and supports personalized patient care through accurate and timely biomarker identification. The substantial proportion of patients with actionable alterations highlights the value of routine molecular profiling. Strengthening laboratory capacity, expanding access to NGS technologies, and promoting multidisciplinary collaboration are recommended to improve patient outcomes and advance precision oncology in clinical practice.

Diagnostic accuracy of FujiLAM 11 point of care assay for detecting Tuberculosis in urine samples among Adults living with and without HIV: A multicenter study in Kenya

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Background: Accurate diagnosis of TB, especially in people living with HIV, is hindered by low sputum bacterial loads. Fujifilm SILVAMP TB LAM II (FujiLAM) is a rapid, urine-based assay detecting lipoarabinomannan (LAM) to enhance TB diagnosis. We evaluated the third generation FujiLAM assay's diagnostic accuracy in HIV-positive and HIV-negative adults in Kenya under Start4All study.

Design/Methods: A cross-sectional, multi centre study was conducted from Aug 2024 to Feb 2025 at JOOTRH and Rabuor sub county hospital. FujiLAM was performed on fresh urine samples. Genexpert MTB/RIF ultra assay was the microbiological reference standard with positive results outcome as MTB Trace, very low, Low, medium and High semi quantitative results. Sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and 95% confidence intervals (CI) were calculated. We assessed the inter-assay agreement using Cohen's Kappa.

Results: Among 785 participants (359 HIV-positive; 426 HIV-negative), FujiLAM sensitivity was 43.3% (95% CI: 25.6–61.0%) in HIV-positive individuals and 26.1% (95% CI: 13.4–38.8%) in HIV-negative individuals against Genexpert MTB/RIF ultra assay. Specificity was 98.5% (95% CI: 97.2–99.8%) among people with HIV and 99.2% (95% CI: 98.3–100%) in HIV-negative individuals. In HIV positive cases, PPV was 72.2% (95% CI: 51.5–92.9%) and NPV was 95% (95% CI: 92.7–97.3%). Overall sensitivity was 32.9% (95% CI: 22.4–43.4%), and specificity of 98.9% (95% CI: 98.2–99.6%). Agreement with Genexpert MTB/RIF ultra assay was moderate (Cohen's Kappa = 0.43 $p < 0.001$).

Conclusions: FujiLAM showed high specificity (98.5%) and moderate sensitivity (43.3%) in HIV-positive adults, indicating potential as an alternative to sputum based tests like Genexpert MTB/RIF ultra assay. Its lower sensitivity (26.1%) in HIV-negative individuals limits broader use. FujiLAM may be most useful as an adjunct test in PLHIV who cannot produce sputum in line with patient centered diagnostic pathways.

Face mask sampling is associated with *Mycobacterium tuberculosis* bacillary load but not transmission in Nairobi, Kenya.

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Background: Tuberculosis (TB) transmission occurs primarily via airborne aerosols, yet conventional diagnostics rely on sputum, which has limited association with infectiousness. Cough aerosol sampling systems (CASS) measure aerosolized Mtb, and cough aerosol culture positivity (CAC+) is highly associated with household transmission. Face mask sampling (FMS) detects exhaled *Mycobacterium tuberculosis* (Mtb) and previous data suggests an association with infectiousness. However, it is not currently known whether CASS and FMS measure distinct Mtb particle sizes or have different associations with infectiousness. We compared FMS and CASS and their associations with sputum bacillary burden and QFT positivity in household contacts (HHC).

Methods: We conducted a nested cross-sectional study involving index TB participants and their HHC. Index participants underwent both FMS and CASS. Face mask samples were tested using Xpert Ultra, quantitative PCR targeting Mtb-specific IS6110 and human RNaseP to confirm mask fit. HHCs were evaluated for Mtb infection using QuantiFERON-TB Gold Plus (QFT-Plus). Logistic regression was used to evaluate predictors of FMS and QFT positivity.

Results: Among 183 index participants, 87 (47.5%) were FMS-positive. CAC+ was 20.7% (18/87) in FMS-positive vs 10.4% (10/96) in FMS-negative individuals ($p=0.054$). Agreement between FMS and CASS was minimal ($\kappa = 0.11$, $p = 0.065$). FMS-positive vs. FMS-negative individuals had higher Xpert grades ($p<0.001$), shorter culture time to detection (5 vs 8 days, $p<0.001$), and higher smear $\geq 2+$ (67% vs 37.9%, $p<0.001$). FMS positivity was independently associated with Xpert grade (aOR 1.68, 95% CI 1.22-2.31, $p = 0.002$). 149/174 HHCs, had QFT results, CAC+ was independently associated with QFT-plus positivity (aOR 6.42, 95% CI 1.72–23.87, $p = 0.006$), while FMS was not (aOR 1.79, 95% CI 0.77-4.20, $p = 0.177$).

Conclusion: Although face mask sampling offers a simple, non-invasive approach for diagnosing tuberculosis, it is not associated with Mtb transmission after adjustment for CASS positivity in Kenya.

Leveraging the Digital Prisoner Health Record (PF-10) Screening Tool to Enhance TB Case Finding in Nairobi Prisons: A Pre-Post Cross-Sectional Evaluation

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Background: Approximately 15% of notified TB patients die during treatment, and prison populations have three to four times higher TB incidence than the general population. Identification of presumptive TB cases can halt transmission, enhance prompt treatment, reduce TB-related mortality, and prevent drug resistance. However, paper-based screening often suffers from poor documentation and sub-optimal presumptive TB yield. This study compared paper versus digital PF-10 screening on TB case finding in Nairobi prisons.

Methods: A pre–post cross-sectional study was conducted using routine TB screening data from the TB Patient Management System (TIBU) among inmates in seven prisons in Nairobi. Screening outcomes from July–December 2024 (pre-digitization) were compared with July–December 2025 (post-digitization) following training of prison heads and documentation officers on the use of the digital PF-10 tool. The primary outcome was presumptive TB yield—the proportion of screened inmates identified as presumptive. Comparative analysis was conducted using the chi-square test, and absolute and relative changes were calculated. Statistical significance was set at $p < 0.05$.

Results: Of the 24,549 inmates pre-digitization, 21,745 were screened; 1,047 (4.8%) were presumptive, all investigated, yielding 73 TB diagnoses (6.9%), all linked to treatment. Post-digitization, 17,065 inmates were seen, with 11,512 screened; 949 (8.2%) were presumptive, of whom 583 were investigated, yielding 45 TB diagnoses (7.7%), all linked to treatment. Despite reduced workload, screening and investigations, presumptive TB yield nearly doubled, while TB diagnostic yield slightly improved. The increase was statistically significant ($\chi^2 = 156.7$, $p < 0.001$).

Conclusion: Digitizing TB screening using PF-10 achieved a nearly twofold increase in presumptive TB yield and improved TB case identification, thereby promoting progress towards ending TB. Standardized digital symptom assessment and automated risk stratification strengthened presumptive case-finding and underscore the potential of operational digital interventions in high-burden congregate settings and other clinical settings.

Distribution of abnormal Spirometry patterns Across TB and Lung Diseases control zones in Nairobi: A Cross-Sectional Analysis

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Background: Chronic respiratory diseases (CRDs), including asthma, chronic obstructive pulmonary disease (COPD), and post-TB lung disease, remain a major global health burden, with millions affected and high mortality driven by tobacco use, air pollution, and occupational exposures. In Kenya, respiratory illnesses are the leading cause of morbidity, reflecting environmental risks and limited diagnostic capacity. To address this, Nairobi County rolled out integrated lung health services in 2025, introducing digital chest X-ray and lung function diagnostics. Spirometry, a simple, non-invasive test of lung function, was a key tool introduced, though uptake remains limited in low-resource settings.

Methods: In 2025, Nairobi County introduced integrated lung health services, deploying six spirometers through a hub-and-spoke model to expand access. Spirometry outcomes were categorized as normal, obstructive, restrictive, mixed pattern, or not done. Descriptive statistics summarized distributions, disease burden, and testing gaps across sub-counties.

Results: A total of 1,951, 941(48%) being females and 1010(52%) were males were screened for lung conditions. 1,249 (64.0%) did not undergo spirometry, indicating a substantial gap in diagnostic evaluation. Among those tested, 391 (20.0%) had obstructive patterns, 108 (5.5%) restrictive patterns, 176 (9.0%) normal results, and 27 (1.4%) mixed patterns. The total obstructive finding was 391 distributed: Ruaraka Zone B 170(43%), Starehe Zone A 103 (26%), and Kibra Zone A 46(12%). Restrictive patterns were most prevalent in Ruaraka Zone B 35(32%), Starehe Zone A 32(30%), and Kibra Zone A 14(13%). Variability in testing uptake and disease distribution was evident across sub-counties.

Conclusion: A substantial diagnostic gap was observed, with 64% of screened individuals not undergoing spirometry. Among those tested, 26.9% demonstrated abnormal lung function, predominantly obstructive patterns (20.0%). Ruaraka Zone B carried the highest distribution, followed by Starehe and Kibra. These findings reveal missed diagnostic opportunities and geographic disparities, emphasizing the urgent need to expand spirometry access and prioritize high-burden areas to strengthen respiratory health services.

A Case for Expanding CAD4TB AI Scope Using Nearly Four Years of Operational Data from Kenya

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Background: CAD4TB has demonstrated measurable impact in tuberculosis (TB) detection across sub-Saharan Africa. However, chest radiographs inherently capture a broad spectrum of pathology beyond TB including chronic obstructive pulmonary disease (COPD), pleural effusions, lung malignancies, and consolidations, conditions that overlap radiologically with TB and remain significantly underdiagnosed in low-resource settings. A single-disease AI system therefore carries an inherent sensitivity ceiling: pulmonary abnormalities flagged by the algorithm may represent non-TB pathology that goes unclassified and untreated. This study presents nearly four years of CAD4TB operational data and aims to: (1) document TB detection success and treatment linkage rates across facility and community settings; (2) determine the proportion of AI-flagged high-probability cases that underwent TB investigation but remained unconfirmed; and (3) use these findings to argue for expanding AI-assisted chest X-ray analysis to broader pulmonary pathology in resource-limited settings.

We hypothesized that a significant proportion of chest radiographs scoring CAD >60 despite undergoing full TB diagnostic investigation would remain unconfirmed for TB, indicating that the AI was detecting genuine pulmonary abnormality attributable to non-TB pathology that the current single-disease system is unable to classify or act upon.

Study Design / Methods: A retrospective analysis of CAD4TB program data from Mutuati Sub-County, Meru County, Kenya was conducted covering July 2022 to March 2026 across facility-based and mobile community outreach screening platforms. Variables included total chest X-ray workload, CAD4TB score distribution (high: >60, intermediate: 40–59, low: <40), bacteriological and clinical TB diagnoses, and treatment linkage rates. CAD4TB operated as the sole AI triage tool without radiologist confirmation, reflecting real-world conditions in a resource-limited setting.

TB diagnostic investigation followed a structured tiered protocol based on CAD4TB score: all patients scoring >60 were referred for full TB workup including sputum bacteriology regardless of symptoms; patients scoring 40–59 were selectively investigated based on clinical suspicion; and patients scoring <40 were investigated only if identified as TB contacts. This protocol ensured that every high-probability AI flag received systematic diagnostic follow-up, making TB confirmation rates within the CAD >60 band a reliable measure of the system's classification accuracy.

Results: A total of 18,581 chest X-rays were processed 4,212 facility-based and 14,369 during community outreach.

Objective 1: TB detection and treatment linkage: CAD4TB demonstrated strong operational value with 729 patients linked to TB treatment, representing a 99.2% treatment linkage rate among diagnosed cases, affirming AI-guided triage viability in a radiologist-absent setting. TB yield was 9.8% (facility) and 2.2% (outreach).

Objective 2: TB confirmation among fully investigated high-probability cases: All 1,732 patients scoring CAD >60 underwent full TB diagnostic workup per protocol. TB was confirmed in only 37.0% of facility and 24.3% of outreach cases. This means 1,207 of 1,732 patients (69.7%) all of whom were fully investigated returned a negative TB result despite the AI flagging significant radiological abnormality. These are not cases of missed follow-up; these are genuinely unresolved pulmonary findings.

Objective 3: Diagnostic gap: Across both settings, 17,852 radiographs (96.1%) yielded no actionable diagnosis beyond TB exclusion. The 1,207 fully-investigated, TB-negative, high-CAD cases represent the clearest evidence of a systematic diagnostic gap real abnormality detected, TB excluded, but no further classification possible within the current AI framework.

Discussion: These findings carry important interpretive weight. The 69.7% of CAD >60 cases that were fully investigated yet returned no TB confirmation cannot be dismissed as screening noise they represent patients in whom the AI detected radiological abnormality significant enough to trigger the highest score band, yet whose chest X-rays ultimately revealed pathology outside the system's diagnostic vocabulary. Conditions such as COPD, lung malignancy, pleural effusion, and consolidation are well-documented to produce chest X-ray appearances that overlap with TB, particularly in high-burden, low-resource settings where clinical differentiation without specialist support is challenging. The current TB-only AI design therefore creates a paradox: the better CAD4TB becomes at detecting pulmonary abnormality, the larger the pool of unclassified non-TB findings it generates. Furthermore, the stark difference in TB yield between facility (9.8%) and outreach (2.2%) settings suggests that community screening platforms — which accounted for 77.3% of total workload are operating in populations with lower TB prevalence but potentially high burden of other lung conditions, amplifying the cost of diagnostic inaction. The absence of radiologist oversight in this setting, while reflecting real-world resource constraints, further underscores the urgency of expanding AI capability to compensate for the specialist gap.

Conclusions and Recommendations: CAD4TB is a proven, effective TB triage tool capable of operating without radiologist support in resource-limited settings. However, its single-disease design creates a systematic and measurable diagnostic gap one that grows larger as screening reaches broader community populations with lower TB prevalence but likely higher burden of other lung conditions. Expanding AI diagnostic scope beyond TB is not an incremental improvement; it is a necessary evolution to match what chest X-rays actually reveal.

We make three targeted recommendations:

1. CAD4TB developers and global implementing partners should prioritize integration of multi-disease AI detection modules covering at minimum COPD, pleural disease, lung malignancy, and consolidation.
2. Kenya's Ministry of Health should establish policy frameworks that recognize AI chest X-ray tools as comprehensive lung health screening platforms rather than single-disease filters.
3. Prospective research should be commissioned to formally quantify and classify the non-TB pulmonary pathology burden among populations currently screened through TB-only AI programs, to provide the evidence base for expanded AI tool development.

Keywords: CAD4TB, artificial intelligence, chest radiography, tuberculosis, lung health, diagnostic sensitivity, non-TB pulmonary disease, low-resource settings, Kenya

Overtreatment of Pulmonary TB Using Chest X-Ray Findings at Meru Teaching and Referral Hospital, 2024

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Background: Clinical diagnosis of pulmonary tuberculosis (PTB) is often made under conditions of diagnostic uncertainty where clinicians rely on chest X-ray findings when bacteriological confirmation is unavailable/delayed. While this approach may support early treatment initiation, it may also result in overtreatment of patients who do not have TB, delayed identification of alternative diagnoses, and potentially preventable morbidity and mortality.

Objective: To determine the rate of overtreatment of pulmonary tuberculosis based on chest X-ray findings at Meru Teaching and Referral Hospital (MeTRH) between January and December 2024.

Methods: A retrospective cohort study was conducted among 100 patients clinically diagnosed with PTB based on chest X-ray findings using data extracted from the 2024 MeTRH TB 4 registers. Patients were grouped into Gene Xpert-negative (n=38) and no Gene Xpert testing (n=62) categories. Data on risk factors and treatment outcomes were extracted and descriptive statistics were used to summarise patient characteristics, while Chi-square tests compared risk-factor distributions and treatment outcomes between groups. The analysis aimed to assess potential overtreatment of Gene Xpert-negative patients and determine whether their clinical outcomes differed significantly from those without Gene Xpert testing.

Results: Among 100 patients, 38 were Gene Xpert-negative and 62 had no Gene Xpert testing. Risk-factor distributions were comparable between groups, with no significant difference observed ($X^2 = 5.34$, $df=6$, $p=0.50$). However, treatment outcomes differed significantly ($X^2 = 6.12$, $df=2$, $p=0.047$). Gene Xpert-negative patients had lower treatment completion rates, higher mortality and diagnostic uncertainty, suggesting poorer clinical outcomes despite similar baseline risk-factor profiles.

Conclusion: There remains significant diagnostic uncertainty when pulmonary TB is diagnosed without bacteriological confirmation. Reliance on chest X-ray findings alone may contribute to overtreatment and missed alternative diagnoses. Strengthening access to bacteriological testing, integration of AI in radiological tests and adherence to recommended TB diagnostic algorithms is essential to improve diagnostic accuracy and patient outcomes.

Public Transport as a Hidden Driver of Tuberculosis Transmission: Evidence from High-Traffic Matatu Routes in Mombasa

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Introduction: Tuberculosis (TB) remains a major global public health concern, with an estimated 10 million cases reported annually worldwide. In Mombasa County, TB incidence is estimated at 0.4% ($\approx 4,326$ cases), driven by dense populations, informal settlements, high mobility, Human Immunodeficiency Virus (HIV) infection, poverty, and overcrowding. While household and healthcare-associated TB transmission are well documented, the contribution of public transport remains unclear, as it often operates under overcrowded and poorly ventilated conditions that may facilitate airborne TB transmission.

Methods: A cross-sectional study was conducted among passengers and public transport operators across five high-traffic routes linking the Mombasa central business district (CBD) to surrounding residential areas. Data were collected using structured questionnaires and direct observations assessing travel duration, passenger density, ventilation, and TB awareness. Exposure risk profiles were generated through descriptive and comparative analyses of transmission-related factors and preventive practices. Public transport operators presenting with TB-related symptoms underwent sputum testing using standard diagnostic procedures.

Results: Among 1,000 public transport operators screened, 176 (17.6%; 95% CI: 15.4%–20.1%) exhibited symptoms suggestive of tuberculosis and underwent diagnostic evaluation. Of these, 74 (42.2%; 95% CI: 35.0%–49.4%) were culture-positive for *Mycobacterium tuberculosis*. High-risk routes were characterized by overcrowding, prolonged travel duration, poor ventilation, and low uptake of preventive measures. Inferential analysis demonstrated a significant association between TB positivity and overcrowded, poorly ventilated transport environments ($p < 0.05$).

Conclusion: High-traffic public transport routes may facilitate TB transmission, with risk driven primarily by modifiable factors such as overcrowding, poor ventilation, and limited TB awareness. Targeted interventions addressing these factors could reduce transmission risk and contribute to lowering the TB burden in urban transit settings.

Keywords: Tuberculosis; Public Transport; Airborne Transmission; Urban Health; Overcrowding; Mobility

Impact of Enhanced Person-Centered Approach on Drug Resistant Tuberculosis Care in Kenya: Comparison of Patients' Interim Treatment Outcomes

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Background: Drug-resistant tuberculosis (DR-TB) remains a major public health challenge in Kenya, characterized by prolonged treatment regimens, frequent adverse drug reactions, and socio-economic barriers that hinder adherence. Patients often face stigma, financial hardship, and mental health challenges, contributing to poor outcomes and ongoing transmission. In response, Population Services Kenya implemented a structured person-centered care model in Nairobi and Mombasa to address both clinical and non-clinical drivers of treatment success and improve adherence and interim outcomes.

Methods: A quasi-experimental study compared interim treatment outcomes among DR-TB patients (six months) initiated on treatment in 2022 between an evaluation population (EP) and control population (CP). The study targeted all active DR-TB patients in EP. The patients received a comprehensive intervention package including individualized care planning, psychosocial and mental health screening using PHQ-9, adherence risk stratification, home visits, patient support groups, financial incentives, and income-generating activities. The CP received standard care per national guidelines. The primary outcome was six-month culture conversion. Differences in categorical variables were assessed using chi-square tests, with statistical significance set at $p < 0.05$.

Results: A total of 261 participants were included (EP: 135; CP: 126), with males being the majority in both groups (EP 65.8%, CP 73.8%). Long-term all-oral regimen were more in the EP (51.3%) than in the CP (23.0%). Six-month culture conversion rates were significantly higher in the EP for both short-term regimens (94.4% vs. 66.9%, $\chi^2 = 12.56$, $p = 0.0004$) and long-term regimens (70.1% vs. 51.4%, $\chi^2 = 5.57$, $p = 0.018$). Outcomes in the EP were also more balanced across sexes, suggesting reduced gender disparities.

Conclusion: A structured person-centered care approach improved interim DR-TB outcomes by enhancing adherence and accelerating bacteriological conversion. Integrating psychosocial, mental health, and socioeconomic support into routine care offers measurable benefits and supports scaling up in high-burden settings.

Computer Aided X-ray improves Tuberculosis Case Detection in Siaya Hospital Study, 2022-2024**Margaret Maureen Atieno¹, Mary Wambura¹****¹Siaya County Government**

Background: Tuberculosis is a major health challenge in developing world. To accelerate the reduction in tuberculosis (TB) incidence, optimized use of innovative tools and approaches available within a local context is necessary. Portable X-ray devices with artificial intelligence (AI) are increasingly used to screen for tuberculosis (TB). Few studies have documented their performance. We aimed to evaluate the performance of chest X-ray (CXR) and symptom screening for active case finding of TB among the rural and fisherfolk community in Siaya County using Portable X-ray and AI, 2022-2024

Methods: We organized screening camps in the beaches surrounding Madiany Sub County Hospital, all consenting individuals ≥ 15 years were screened for TB symptoms (cough, fever, night sweats, and weight loss) and received a CXR. We used Computer Aided Detection Software system CAD4TB. Collected sputum samples from individuals with a CAD 4 TB abnormality score of 60%. Samples were tested with Xpert MTB/RIF. We documented the TB screening cascade and evaluated the performance of screening with different combinations of symptoms and CXR interpreted by AI.

Results: We screened 8297 individuals during 66 camps: 4231 (51%) were males. Using cough of any duration, the number with presumptive TB was 2987(36%) and increased to 4812 (58%) if any of the four symptoms were used. Overall, 1245 (15%) had abnormality scores of 40% or higher, and 755 (9.1%) had a score of 60% or higher. We collected 2038 samples for Xpert testing and detected 138 (6.7%) individuals with BC TB. Screening for prolonged cough only identified 40% of people with TB. Other Lung abnormalities were also detected 39 (0.47%).

Conclusions: Portable CXR can be used to provide more efficient TB screening in hard-to-reach areas. Employing AI to read CXR can improve triaging when human readers are unavailable and can save expensive diagnostic testing costs.

Church-Led Integrated Disease Screening: Leveraging Faith to Enhance TB Case Finding in Akwa Ibom State, Nigeria.

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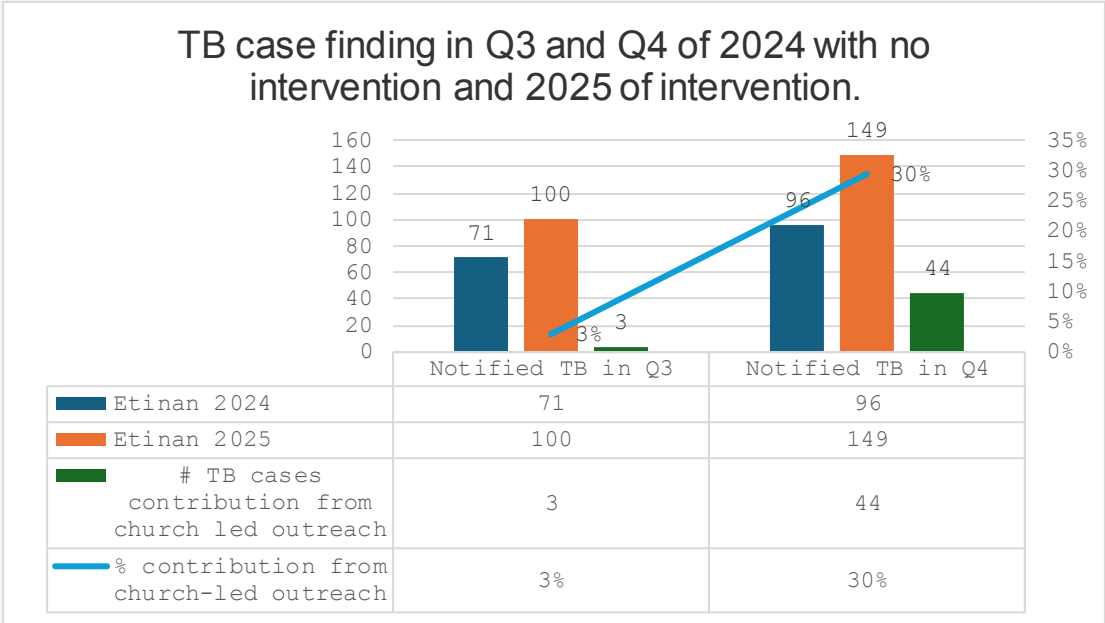
Background / Implementation Challenge: Nigeria accounts for a significant burden of TB in Africa, with 25% of estimated cases still undetected. TB and NTDs, especially leprosy, often overlap geographically and share similar challenges related to transmission and diagnosis. Akwa Ibom State is among the top TB-notifying and skin-NTD endemic states with high stigma in Nigeria. Religious leaders play a vital role in shaping community health behaviors, particularly in rural areas where traditional and faith-based institutions remain influential.

This study assessed the effectiveness of church-led integrated disease screening initiative on TB case finding in Etinan LGA of Akwa Ibom State.

Intervention / Response: Leveraging RedAid Nigeria (RAN)’s partnership with local churches, 7 Religious leaders in Etinan LGA were trained to screen, detect and refer skin-NTD and TB cases for diagnosis and treatment via monthly community NTD and TB awareness campaigns in collaboration with LGA team of frontline health workers (TB Supervisor and DOTS officer).

This retrospective study analyzed the data on TB screening, suspect evaluation, case detection, and notification from the monthly church-led outreach programs in Etinan LGA. Data was from facility TB register and analyzed with Microsoft Excel.

Results and Lessons Learnt:



TB case finding increased from 70 to 100 in Q3 and from 96 to 149 in Q4 of 2025 compared to 2024 respectively. The

initiative contributed 3% (Q3) and 30% (Q4) of notified TB cases, with a 43% increase in case detection rates in Q3 and a 55% increase in Q4. Faith leaders' involvement enhanced community engagement, turn-out, screening uptake, and case detection.

Conclusions and Key Recommendations: This faith-based intervention effectively improved TB case found in Akwa Ibom State, demonstrating the potential of leveraging faith leaders to enhance community engagement and health outcomes. By integrating TB and NTD screening, this approach optimizes resource use in Nigeria weak health systems, offering a promising strategy for addressing TB and NTDs in co-endemic regions.

EP-3-46

Evaluating TB & Lung Health Diagnostic Advances in Case Detection in Gatanga Sub-county, Murang'a County (2023–2025)

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Background: Tuberculosis (TB) remains a major public health challenge in Kenya, contributing significantly to morbidity and mortality. Early diagnosis and timely treatment are critical in reducing TB transmission and improving outcomes. Advances in TB diagnostics, including molecular testing and digital imaging, have strengthened health systems ability to detect cases earlier. Gatanga Sub-County did integrate these technologies into routine TB screening, use of GeneXpert in molecular diagnosis, Digital chest X-ray for radiological screening and diagnosis. Evaluating their impact on case detection is vital for TB control strategies.

Methodology: A retrospective descriptive analysis of TB data from 2023–2025 was conducted. Data was obtained from the TIBU system, GeneXpert logs, digital chest X-ray records, and TB case notification reports. Variables analyzed included clients screened, Presumptive TB cases identified, GeneXpert tests done, chest X-rays performed, and TB and other lung health cases detected. Data was summarized using Excel.

Results: In 2023, 203,762 clients were screened, identifying 1,440 presumptive TB cases; 1,336 GeneXpert tests yielded 246 positives (18.4%), and 31 chest X-rays were performed, resulting in 173 TB cases detected. In 2024, 153,180 screened, 1,367 presumptive, 1,173 GeneXpert tests (119 positives, 10.1%), 351 chest X-rays, and 233 TB cases. In 2025, 110,118 screened, 3,497 presumptive, 1,621 GeneXpert tests (134 positives, 8.3%), and 2,710 chest X-rays, detecting 269 TB cases. Other Lung health conditions also identified majority being COPD 86, Asthma 53 and 27 fibrosis, PTLT screening of 57 cases 15(26%) had COPD.

Conclusion: The diagnostic cascade demonstrates improved presumptive cases Identified, expanded chest X-ray use, and sustained molecular testing this contributed to increased TB detection and other lung health condition. Scale-up of chest X-ray screening and molecular testing using GeneXpert improved diagnostic efficiency. Strengthening coverage while optimizing advanced diagnostics could further enhance TB detection control with good identification and management of Lung health conditions.

Tuberculosis screening along the Kenya Uganda border using artificial intelligence enabled digital chest x ray, 2025.

Robert Magomere¹, Paul Lodi¹

Affiliation

¹Ministry of Health Bungoma County¹

Background: Tuberculosis (TB) is a major public health concern. Over 40% of TB patients are missed in Kenya as per prevalence survey done. Symptomatic screening for TB is ineffective in identification of TB presumptive patients. Studies have shown that artificial intelligence (AI) enabled digital Chest X-ray (CXR) is effective in TB screening. We aimed to screen population along the Kenya Uganda border using AI enabled digital x-ray fitted with Qure.ai software.

Methodology: We organized screening outreach along the Kenya Uganda border point market targeting travelers, truck drivers, customs officers and general public, all consenting individuals ≥ 15 years were screened for TB using world health organization (WHO) symptomatic screening tool and they were also subjected to an CXR. Those who were presumptive for TB using CXR and symptoms were subjected to a sputum diagnostic molecular test.

Results: Total of 386 people were screened 201(52%) were female and 185 (48%) were male. Total of 20 (5%) were identified as presumptive using world health organization (WHO) symptomatic screening, the presumptive TB cases increased to 56 (15%) using the AI enabled CXR at a threshold score of >0.5 . Total of 56 samples were taken for sputum molecular test, 10 had bacteriologically confirmed TB detected while 7 were diagnosed TB clinically, in total 17 (30%) cases were diagnosed to have TB disease and they were initiated on TB treatment, while 23 (5%) had other abnormality and they were referred appropriately.

Conclusion: Symptomatic screening misses a large proportion of people with presumptive TB. The use of AI enabled CXR is a better screening tool compared to symptomatic screening. This leads to finding of TB missing cases, subsequent improving treatment outcomes and also reducing onwards community TB transmission.

Contact screening among household/ social contacts of pulmonary tuberculosis index patients in Bungoma County, Kenya, 2025

¹Robert Magomere, ¹Paul Lodi

Affiliation

¹Ministry of Health Bungoma County¹

Background and challenges to implementation: World Health Organization (WHO) recommend, screening of contacts of tuberculosis (TB) patients, with aim of finding the TB missing cases, initiation of preventive measures and reducing community transmission. This recommendation has not been fully implemented in our setting. We sought to assess the yield of TB disease among household and social contacts and TB preventive therapy (TPT) uptake in Bungoma County.

Intervention or response: From January 2025 through December 2025, training and mentorship of health care workers in TB clinics within Bungoma County on TB screening among contacts was conducted. Upon diagnosis of index TB case line listing of all contacts was done, and the index cases were informed on importance of bringing all the contacts for TB screening. Contacts were screened using the standard WHO intensified case finding tool. All those who screened negative were initiated on tuberculosis preventive therapy (TPT). While those who screened positive (presumptive TB) sputum for genexpert was done, those who were positive for TB disease, TB treatment was initiated.

Results and lessons learnt: During the study period, 985 index cases were diagnosed, 53% (520/985) had their contacts screened. A total of 2171 contacts were screened of whom 86% (1863/2171) were asymptomatic, while 14% (308/2171) were symptomatic/presumptive TB. A total of 96% (297/308) were evaluated for TB by producing sputum for genexpert, 23% (69/297) had TB disease, and they were all initiated on TB treatment. For asymptomatic and those who had no TB 76% (1631/2102) were initiated on TPT.

Conclusions and key recommendation: Scale up of contact screening increases TB case detection and enhance TPT uptake, its implementation is essential towards ending TB as a public health threat.

Early Detection and Diagnosis of Tuberculosis Using AI-Aided Mobile Chest X-Ray in High-Risk Kenyan Communities

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Affiliation:

¹Center for Health Solutions-Kenya

Background: Early detection of Tuberculosis (TB) is essential to reduce transmission, especially in underserved and high-risk populations where many cases remain undiagnosed. AI-assisted mobile digital chest X-ray presents a promising strategy for active TB case finding.

Objective: To assess the yield of AI-supported mobile chest X-ray for TB detection among high-risk community and transit populations in Kenya.

Methods: Over a four-year period, a mobile digital chest X-ray unit equipped with CAD4TB artificial intelligence software was deployed in high-risk settings, including border points, prisons, beaches, mining sites, and informal alcohol establishments. Screening with AI aided chest X-ray was conducted during both daytime and extended evening hours to improve access. CAD score thresholds were defined as 40–59% (presumptive TB) and $\geq 60\%$ (highly suggestive of TB). All presumptive cases underwent confirmatory testing using GeneXpert and Truenat assays. Outcomes included number screened, presumptive TB cases, confirmed TB cases, and treatment initiation rates.

Results: A total of 17,217 individuals were screened. Of these, 803 (4.7%) had CAD scores $\geq 60\%$ and 1,216 (7.1%) had scores of 40–59%, resulting in 2,019 (11.7%) presumptive TB cases. Among those tested, 725 cases were bacteriologically confirmed, all of whom (100%) were initiated on treatment. The TB positivity rate among presumptive cases was 35.9%, and the overall TB yield was 4.2%.

CONCLUSION: The AI Chest X-ray screening approach demonstrate high diagnostic yield in early TB detection and ensuring timely linkage to care in the primary healthcare settings. It is well suited for primary-level screening across diverse sub-populations.

Impact of Short-Course Regimens on Treatment Outcomes and Health Systems Strengthening

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Affiliation:

¹Umma University

Background / Implementation Challenge: Tuberculosis (TB) remains a major public health challenge in Kenya, contributing significantly to morbidity and mortality. Long and demanding treatment regimens have often resulted in poor adherence, treatment fatigue, and loss to follow-up. In addition, gaps in early case detection and limited integration of prevention strategies have allowed continued transmission within communities. These challenges highlight the need for a more patient-centered and integrated approach to TB care.

Intervention / Response: Kenya has recently adopted shorter, patient-friendly TB treatment regimens alongside strengthened prevention and case-finding efforts. A 4-month regimen has been introduced for eligible children with drug-sensitive TB, while the BPaLM regimen provides a shorter, fully oral option for drug-resistant TB. These treatment innovations are implemented together with active case finding, contact tracing, and targeted prevention strategies within routine healthcare services, aiming to improve early diagnosis and accessibility of care.

Results and Lessons Learnt: Shorter regimens have improved treatment adherence, reduced pill burden, and enhanced patient tolerance. Early outcomes indicate reduced loss to follow-up and improved treatment success. Strengthened case-finding efforts have contributed to earlier diagnosis, while prevention strategies support reduced transmission. However, challenges remain, including the need for continuous healthcare worker training, monitoring of drug safety, and addressing resource constraints. These findings highlight the importance of strengthening health system capacity and ensuring sustainable implementation.

Conclusions and Key Recommendations: Integrating short-course treatment with prevention and active case finding provides a practical and effective approach to improving TB outcomes in Kenya. Strengthening healthcare worker capacity, expanding access to diagnostics and treatment, and enhancing service integration are critical to sustaining progress and advancing TB control efforts.

Uptake of TB Preventive Therapy (TPT) Among Contacts of Bacteriologically Confirmed Patients: A Case of Twelve TB Basic Management Units in Nairobi

Onesmus Karobia¹, R. Mbacio¹, C. Pahe¹, J. Limo¹

Affiliation:

¹Population Service Kenya (PS Kenya)

Background and Challenges to Implementation: Tuberculosis (TB) remains a significant public health concern due to its airborne transmission and severe outcomes when not diagnosed and treated early. Household and social contacts of bacteriologically confirmed TB patients are at high risk of infection and progression to active disease. The WHO recommends TPT to reduce incidence among exposed individuals. Contact investigation through systematic invitation and tracing is a key strategy to interrupt transmission. This intervention assessed the proportion of eligible household and social contacts initiated on TPT across 12 Basic Management Units (BMUs) in Nairobi between June 2024 and June 2025. Data were retrieved from the CMR and community tracing booklets.

Intervention: During the review period, contact investigation was conducted across 12 TB control zones (Westlands A/B, Ruaraka A/B, Kasarani A/B, Roysambu, Makadara, and Embakasi East, West, Central, and South). The process involved identifying, line-listing, and managing contacts aged 5 years and above, as recorded in the CMR. Healthcare providers invited contacts for screening and testing, while trained Community Health Promoters conducted household visits to deliver health education, screen for TB symptoms, and facilitate referrals. Data were captured using standardized community TB tools. Eligible contacts for TPT included children under five and other at-risk individuals after exclusion of active TB through symptom evaluation.

Results and Lessons Learnt: A total of 1,968 index patients were visited, yielding 4,125 contacts, both children and adults, who were screened for TB. Of these, 3,687 were eligible for TPT, but only 913 were initiated, representing a 25% uptake—well below the 80% national target by 2028. Major barriers included drug stock-outs and client refusal.

Conclusion and Key Recommendations: Despite strong contact identification, TPT uptake was low. Strengthening supply chains, enhancing community engagement, and improving awareness are critical to increasing TPT initiation and reducing TB transmission.

Assessment of Contact Management uptake on Tuberculosis Active Case Finding and Preventive Therapy outcomes in Machakos County

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Introduction: Contact management plays a key role in preventing progression of latent tuberculosis (TB) to active disease. It is estimated that a quarter of the world is latently infected and about 10 per cent of them are likely to progress to TB disease. The aim was to assess the uptake of contact management amongst bacteriologically confirmed index cases, its yield on active case finding and TPT outcomes in Machakos County.

Methods: This was a descriptive retrospective study. Data was collected from electronic and manual TB registers, entered in excel database and analysed through epi info. This included all contacts of bacteriologically confirmed index cases diagnosed within 178 TB treatment sites in Machakos county between January 2024 and December 2025. Bivariate and multivariable analysis was done to identify factors associated with TPT uptake and outcomes.

Results: Of 3188 bacteriologically confirmed TB cases, 4297 contacts were documented. 56% were aged 30 years and below. 590 (14%) had a documented HIV status with 11 (0.3%) confirmed HIV Positive. Among 4297 contacts, 3684 (90%) were screened for tuberculosis. 757 (18%) contacts were symptomatic with 92 (2%) diagnosed with TB started on treatment. 3006 (73%) of the contacts were initiated on TPT with majority 48% started on 3HP regimen. Male contacts and those living with HIV were more likely to experience unfavourable outcomes ($p < 0.05$). Male contacts had higher odds of unfavourable outcomes (AOR 1.45; 95% CI 1.05–2.01) while HIV-positive contacts were significantly more likely to have unfavourable outcomes (AOR 1.80; 95% CI 1.20–2.70).

Conclusion: Scaling up contacts management will be key in identifying new TB cases early and prevent disease transmission. The contacts index case ratio was below the set national target of $> 3:1$ and hence the county should aim at over 90 percent TPT initiation among contacts.

An Unusual Cause of Heart Failure in a Toddler: Reversible Dilated Cardiomyopathy associated with Tuberculosis pericarditis-case report

Victor Onger¹

Affiliation:

¹Karen hospital

Background: Tuberculosis (TB) is a major global health problem with predominantly pulmonary involvement. Cardiac manifestations are rare, particularly in children, but may present as heart failure. Dilated cardiomyopathy (DCM) secondary to TB is an uncommon yet potentially reversible condition.

Case Presentation: We report a toddler female 1Year and 2 months presenting with progressive difficulty in breathing, persistent fever, poor feeding, and failure to thrive since 3months of age. Examination findings were WHZ score <-3sd, febrile, alert, pale ,no lymphadenopathy, no murmur, s1s2 heard, not in respiratory distress and reduced muscle bulk and tone Echocardiography revealed dilated left ventricle with reduced contractility,EF 43%,FS 20%,LA 20mm,LVID 31/25mm,no effusion, no tricuspid regurgitation nor mitral regurgitation suggestive of DCM. Initial evaluation for common causes was inconclusive. Further investigations including clinical picture, Mantoux 15mm reaction after 72 hours and TB urine LAM Positive was highly suggestive of extrapulmonary tuberculosis. She was started on anti-tuberculous therapy RHZ 2 tablets, Ethambutol 2 tablets, pyridoxine 25mg, nutritional supplement alongside with standard heart failure management.

Outcome: The child increased weight gain from initial 9.3kg to 11.5kg and come back to normal life routine.feeding improved, fever resolved, anti-failure medication all stopped (Lasix, Aldactone, digoxin, enalapril, Carvedilol), Ejection fraction improved to 76% from 43%.

Conclusion: Extrapulmonary Tuberculosis may represent a potentially reversible factor in pediatric dilated cardiomyopathy (DCM), particularly in endemic regions. Early recognition and treatment of TB may contribute to improved cardiac outcomes.

Late Detection of Tuberculosis in a Young Adolescent resulting in Constrictive Pericarditis requiring Pericardiectomy: A Case Report and Clinical Review

Victor Onger¹

Affiliation:

¹Karen hospital

Background: Tuberculosis (TB) remains a major cause of morbidity particularly in low- and middle-income countries, where delayed diagnosis is common and can lead to serious complications. Tuberculous pericarditis is a rare but life-threatening manifestation that may progress to constrictive pericarditis if not identified and treated promptly.

Case presentation: We report the case of a 17year old adolescent with late-diagnosed tuberculosis who developed chronic constrictive pericarditis necessitating surgical pericardiectomy. The patient initially presented with chest cough for 8 weeks associated with low grade fever, drenching night sweats, weight loss, and fatigue, palpitation which were not promptly recognized as TB-related. Later developed dyspnea, peripheral edema and reduced exercise tolerance. examination sick looking, dyspneic, a febrile, s1 s2 heard with pericardial friction rub, muffled heart sounds bilaterally, accessory muscle use. 2D Echo showed Biventricular systolic function LVEF 58%, massive circumferential pericardial effusion, Fibrinous strands, thickened pericardium, Trace TR. ECG-sinus tachycardia 112 beats per minutes, chest Xray showed cardiomegaly, right pleural effusion, pericardiocentesis blood stained 2200cc,pericardial fluid No AAFBs noted, PCR MTB not detected; Anti-TB for 2 months initiated, Had persistent heart failure symptoms cardiac optimization therapy done with no improvement, repeat echo showed features of constrictive pericarditis, open pericardiectomy, pericardial fibrosis, biopsy confirmed granulomatous inflammation, no evidence of malignancy.

Outcome:

No complication post operatively the patient showed significant clinical improvement with resolution of heart failure symptoms after the procedure and subsequent clinic follow up. Echo done normal with EF 68%.

Conclusion: Progression of untreated tuberculosis to advanced pericardial disease requiring surgical intervention. It highlights the critical importance of early diagnosis and treatment of tuberculosis in adolescents to prevent severe complications.

Uptake of TB Preventive Therapy (TPT) Among Contacts of Bacteriologically Confirmed Patients in Twelve Control TB Zones in Nairobi

Onesmus Karobia¹, R. Mbacio¹, C. Pahe¹, J. Limo¹

Affiliation:

¹Population Service Kenya (PS Kenya)

Background and Challenges to Implementation: Tuberculosis (TB) remains a significant public health concern due to its airborne transmission and severe outcomes when not diagnosed and treated early. Household and social contacts of bacteriologically confirmed TB patients are at high risk of infection and progression to active disease. The WHO recommends TPT to reduce incidence among exposed individuals. Contact investigation through systematic invitation and tracing is a key strategy to interrupt transmission. This study determines the proportion of eligible household and social contacts initiated on TPT across 12 TB control zones in Nairobi between June 2024 and June 2025. Data were retrieved from the CMR and community tracing booklets.

Intervention: During the review period, contact investigation was conducted across 12 TB control zones (Westlands A/B, Ruaraka A/B, Kasarani A/B, Roysambu, Makadara, and Embakasi East, West, Central, and South). The process involved identifying, line-listing, and managing contacts aged 5 years and above, as recorded in the CMR. Healthcare providers invited contacts for screening and testing, while trained Community Health Promoters conducted household visits to deliver health education, screen for TB symptoms, and facilitate referrals. Data were captured using standardized community TB tools. Eligible contacts for TPT included children under five and other at-risk individuals after exclusion of active TB through symptom evaluation.

Results and Lessons Learnt: A total of 1,968 index patients were visited, yielding 4,125 contacts, both children and adults, who were screened for TB. Of these, 3,687 were eligible for TPT, but only 913 were initiated, representing a 25% uptake—well below the Nairobi county target of 90%. Major barriers included drug stock-outs and client refusal.

Conclusion and Key Recommendations: Despite strong contact identification, TPT uptake was low. Strengthening supply chains, enhancing community engagement, and improving awareness are critical to increasing TPT initiation and reducing TB transmission.

Weight Changes and Mortality among Tuberculosis Patients by Age at Kilifi County Referral Hospital, Kenya (2024–2025)

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Background: Tuberculosis remains a leading global cause of death, with 1.23 million deaths reported in 2024, including 378,000 (30.7%) in Africa. Kenya recorded 15,000 deaths, with 137 in Kilifi County. Undernutrition contributes to poor outcomes. This study assessed weight changes among TB patients by age as an indicator of nutritional recovery and treatment response.

Study Methodology: We conducted a retrospective analysis of TB patients diagnosed at Kilifi County Referral Hospital between 2024 and 2025 using R-Studio version 4.5.2. Descriptive and comparative analyses assessed weight changes and mortality across age groups. A total of 348 patients were diagnosed in 2024 and 321 in 2025, with final weight data available for 161 and 53 patients, respectively. Patients were grouped as ≤ 15 years and >15 years according to national TB program guidelines,

Results: Patients aged below 15 years showed greater mean weight gain (25.19%) than those aged 15 years and above (10.24%). Of 668 patients, 47 deaths occurred, mostly in adults (91.5%). These findings suggest better nutritional recovery and treatment response in younger patients, while higher adult mortality may reflect delayed diagnosis and poor nutritional support. Incomplete weight data may have affected reliability.

Conclusions and Recommendations: Efforts should prioritize early detection and timely TB treatment, especially among patients aged ≥ 15 years. Integrating nutritional support into TB care particularly for adults is essential to improve weight recovery. Strengthening routine follow-up and accurate data recording, including weight measurements, is also critical. Targeted interventions for adult patients are needed to improve outcomes and reduce TB-related mortality.

Strategies employed to improve treatment outcomes among alcoholic TB patients in Korogocho informal settlements, Nairobi Kenya.

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¹Nairobi County

Background: Kenyan urban slums have the highest burden of Tuberculosis due to overcrowding. Nairobi County contributes 15% of the TB cases reported in the Country. In 2022 cohort, 5% of clients in Kenya were lost to follow-up (LTFU), with Nairobi recording a slightly higher rate of 6% attributed to highly mobile impoverished populations and alcoholics. Korogocho, an informal settlement in Ruaraka Sub-county, Nairobi, which faces a significant tuberculosis (TB) burden, has been experiencing poor treatment outcomes, largely linked to alcoholism. Comboni Sisters, Faith based organization in Korogocho slums has been managing TB patients whom > 60% are alcoholics. In 2021, the facility reported a Treatment success rate (TSR) among alcoholics of 64% (9/14).

Intervention: In 2022, the facility introduced an innovative approach to support alcoholic patients in adhering to their daily medications. This included providing daily DOTs and establishing support group specifically for alcoholic patients with TB. With the help of the TB champions, TB clinician, specialized counselors (Mental health and gender based violence counselors), nutritionist and the TB Coordinator were able to offer support on adherence, drug abuse, stigma and discrimination, gender based issues, nutrition and drugs side effects.

Results: Across the years the Treatment success rate (TSR) among patients attended at the facility has been achieved as follows; in 2022, 21/22 (95%TSR), in 2023, 38/38 (100%TSR), 2024 62/62 (100%TSR) and Jan to Sep 2025 40/40 (100%TSR) with a progressive increase in case detection and good case retention across the years.

Conclusions and recommendations: This study demonstrates that it is possible to achieve good treatment outcomes among alcoholic patients with TB. Use of DOT plus strategy for patients who are alcoholics and offering integrated care are convenient, cost effective models of service delivery. These models increase patient satisfaction which significantly improve drug adherence and enhances case retention thus reducing lost to follow ups.

Unmasking the Hidden Burden of Tuberculosis in Nigeria: Evidence from Active Case Finding in Non-Traditional Settings

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Background: Tuberculosis (TB) remains a major public health challenge in Nigeria, with a significant proportion of cases undetected due to limitations in reach of conventional health services and surveillance systems. Vulnerable populations such as individuals in prisons and prayer houses are often excluded from routine TB case-finding efforts. These gaps contribute to an unknown and potentially substantial hidden burden of TB, sustaining community transmission and undermining national control strategies.

Intervention: During the 2026 World TB Day commemoration week, the KNCV TB LON Project implemented TB active case-finding intervention across 7 non-traditional settings in 14 states. These included Prayer Houses, Healing homes, Prisons, Informal schools, Alcohol spots, Internally Displaced Persons (IDP) camps and Orphanages. The approach combined strategic engagement with relevant stakeholders and diagnostic linkages. Screening included WHO four symptom screening (W4SS) and digital chest X-ray with computer-aided detection. Identified presumptive TB were tested with rapid molecular tests and diagnosed TB cases linked to treatment. Data was analyzed using the TB Screening efficiency cascade.

Result: A total of 101,384 individuals were screened, with 10,690 presumptive TB identified (Presumptive TB yield 10.5%) and tested (100% evaluation rate). The intervention yielded 866 TB cases, representing an 8.1% positivity rate among those tested. Of these, 671 (77.5%) were bacteriologically confirmed, indicating a high proportion of infectious cases. Treatment had been initiated for 812 individuals (Enrollment rate 94%), demonstrating ongoing linkage to care. Number needed to screen was 117 and Number needed to test was 12. IDP camp had the highest TB yield of 12% followed by Prayer houses at 9%. The least yield was from alcohol spots and orphanages at 5%.

Conclusion: The high yield of TB cases from targeted screening in neglected settings underscores critical gaps in Nigeria's TB surveillance system. Integrating such populations into routine TB programming is essential for improving case detection and reducing transmission.

Free Chest X-Ray, More Cases: Programmatic Drivers of Increased Pediatric TB Notification in Coastal Kenya

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Background: Pediatric tuberculosis (TB) remains underdiagnosed in high-burden, resource-limited settings, largely due to challenges in obtaining bacteriological confirmation in children. Mombasa County is among the high TB burden regions in Kenya, with Nyali Sub-County facing additional constraints, including limited access to child-friendly diagnostic tools. Prior to intervention, reliance on clinical judgment without adequate radiological support contributed to missed or delayed diagnoses, highlighting a significant gap in pediatric TB detection.

Intervention: In January 2026, a Global Fund–supported intervention introduced free chest X-ray (CXR) services for all presumptive pediatric TB cases (0–14 years). The program strengthened public–private sector collaboration through improved referral linkages, intensified active case finding, and targeted healthcare worker training in pediatric TB diagnosis and CXR interpretation. A retrospective before-and-after analysis of routine TB surveillance data (2025–2026) was conducted, complemented by qualitative insights from healthcare workers to assess programmatic impact.

Results and Lessons Learnt: Following implementation, pediatric TB notifications increased by 24%, with the proportion of clinically diagnosed cases rising from 8% in Q1 2025 to 32% in Q1 2026. Uptake of CXR among presumptive pediatric cases improved significantly, enabling earlier and more confident clinical decision-making. Key drivers included improved access to radiological services, strengthened referral systems, and enhanced clinician capacity. However, persistent challenges such as difficulties in specimen collection and low bacteriological confirmation rates in children sustained reliance on clinical diagnosis.

Conclusions and Key Recommendations: Expanding access to free CXR services through integrated public–private partnerships can significantly improve pediatric TB detection. Scaling up such models, alongside strengthening diagnostic capacity and sustainable financing, is critical to closing the pediatric TB detection gap and advancing integrated lung health programming in high-burden settings.

Assessing Lung Function Impairment in Children & Adolescents Post-TB Treatment, study at Mama Lucy Kibaki Hospital.

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Affiliations:

¹Nairobi County

Background: Post-tuberculosis lung disease (PTLD) is increasingly recognized as a cause of long-term respiratory morbidity, especially in children and adolescents. Patients with PTLD may present with persistence of symptoms or decline in lung function despite successful completion of treatment or cure. Increasing evidence of long-term respiratory complications following TB in a proportion of these patients affecting their quality of life

- Over 60% of patients still have symptoms after completion of TB treatment
- Over 80% have radiological sequelae
- Over 30% have spirometry function test abnormalities and more than 40% have bronchiectasis

Intervention: This study assessed lung function outcomes among pediatric TB survivors from 2022 and 2023 using spirometry and the 6-minute walk test (6MWT). Children and adolescents who had completed pulmonary TB treatment were identified from facility registers, and caregivers were contacted for participation. The healthcare workers including clinicians were sensitized on the study. Upon obtaining consent, spirometry was performed to assess obstructive and restrictive impairments, while the 6MWT evaluated functional capacity via exertional oxygen desaturation ($\geq 3\%$).

Results: A total of 55 participants that enrolled.

Spirometry abnormalities: 18 children (32.7%)

- Obstructive impairment: 8 cases
- Restrictive impairment: 10 cases (slightly more prevalent)

6MWT findings: 35 children (63.6%) showed abnormal desaturation, indicating impaired gas exchange and reduced exercise tolerance despite completing TB treatment.

This supports the presence of lung impairment despite successful TB treatment.

Conclusion: A significant proportion of pediatric and adolescents TB survivors exhibited lung function impairment, highlighting the need for routine monitoring and exercise tolerance assessment in post-TB care. Early TB diagnosis and prompt treatment initiation remain crucial in minimizing long-term pulmonary complications. Early TB diagnosis and timely treatment initiation are critical in preventing long-term pulmonary complications

Optimizing Pediatric Tuberculosis Case Detection: Harnessing the Nutrition Department for Active Case Finding in Kiambu County, Kenya

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Background: Diagnosing tuberculosis (TB) in children under five remains a formidable challenge due to the paucibacillary nature of the disease and the difficulty in obtaining sputum for bacteriological confirmation. Pediatric TB often presents with non-specific clinical features, such as failure to thrive (FTT), which can easily be misattributed to primary malnutrition or routine respiratory infections. This creates a dangerous cycle: TB drives catabolism and anorexia, while malnutrition compromises cellular immunity, increasing susceptibility to TB. In Kikuyu and Kabete Sub-Counties, pediatric TB case identification had stagnated at 7.3%, significantly below the national target of 10–15%.

Intervention: To bridge this diagnostic gap, we implemented a multidisciplinary strategy centering on the nutrition department. Nutritionists were sensitized to screen all children referred for nutritional assessment, counseling, and support (NACS) for TB. Children presenting with FTT or persistent malnutrition were prioritized for clinical evaluation. To overcome the limitations of bacteriological testing, we leveraged the Respiratory Society of Kenya's free chest X-ray (CXR) services as a primary diagnostic tool for children with high clinical suspicion.

Results: Following the integration of nutritional screening and radiological support, pediatric TB case identification significantly increased from 7.3% to 13.7%, successfully meeting national targets. The majority of identified cases were pulmonary TB, primarily presenting with FTT, night sweats, and recurrent respiratory tract infections. Furthermore, through integrated management, we achieved a 96% treatment success rate, demonstrating that early detection via nutritional pathways is strongly linked to favorable outcomes.

Conclusions: Collaborative screening between nutrition and TB departments is a high-yield strategy for identifying pediatric TB cases that would otherwise be missed in traditional clinics. Leveraging clinical history and chest X-rays rather than relying solely on sputum production is essential for timely diagnosis. This model suggests that empowering nutritionists as frontline screeners can drastically reduce the pediatric TB burden in community and facility settings.

Integrating Community-Led TB Screening within Harm Reduction Services for PWUD in Nairobi

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Introduction: People who use drugs (PWUD) face an elevated risk of tuberculosis (TB) and other respiratory illnesses due to overcrowding, incarceration, HIV co-infection, stigma, and delayed health-seeking. While TB screening is integrated within harm reduction services, PWUD often experience barriers to consistent engagement and timely linkage to diagnostic and treatment services. This programme aimed to strengthen and systematize TB symptom screening within community-led harm reduction outreach to improve early case identification and effective referral among PWUD in Nairobi, Kenya.

Methods: Peer outreach workers from KeNPUD engaged in PWUD programming in Nairobi were trained on the signs and symptoms of TB and standardized symptom screening tools. Screening was conducted within existing harm reduction services, including needle and syringe programmes, HIV testing outreaches, and community support groups. Individuals with presumptive TB were provided escorted referral to public health facilities for GeneXpert testing and clinical evaluation. KeNPUD peer navigators accompanied clients to ensure successful linkage to care and support adherence to treatment.

Results: Strengthening TB screening within harm reduction services improved coverage and enhanced identification of presumptive TB cases among PWUD. The peer-led model enhanced trust, reduced stigma-related barriers, and strengthened referral completion through escorted support. Collaboration with county TB coordinators improved continuity of care, demonstrating feasibility and effectiveness of community-led interventions.

Conclusion: Strengthening community-led TB screening within harm reduction services is feasible, acceptable, and improves early detection and linkage to care among PWUD. Escorted referrals and peer support are critical for achieving equitable, patient-centered lung health outcomes and advancing integrated TB care.

Beyond the Clinic: Community-Powered Strategies to Find Missing Tuberculosis Cases in Kabete Sub-County, Kenya (2025–2026)

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Background: Tuberculosis (TB) remains a critical public health challenge, with many cases undiagnosed the “missing TB cases.” Outreach programs in high-burden settings have historically depended on donor funding, a model threatened by shifting donor priorities. We describe a novel, locally-financed, community-powered TB case-finding model implemented across five wards in Kabete Sub-County, Kiambu County, Kenya in 2025–2026 coordinated entirely through Community Health Promoters (CHPs), Community Health Assistants (CHAs), and TB champions, and financed by the local business community without external partner support.

Methods: A multisectoral partnership convened by the Sub-County Health Department leveraged the Community Health Strategy (CHS) structure, local administrative leaders, businesses, and the police for logistics and community mobilization. To reach men disproportionately affected by TB yet underserved by facility-based services outreach was deliberately conducted at male-dominated venues including alcohol dens, muguka joints, matatu termini (with support from matatu SACCO leaders), and bodaboda sheds. Activities included TB awareness walks, community dialogue forums, and on-site symptom screening. Integrated services comprised HIV testing, NCD screening (hypertension and diabetes), and nutritional assessment. Both public and private health facilities supported sputum collection and referral pathways.

Results: Overall, 1,853 community members received TB education on stigma, treatment adherence, and infection prevention. Of 1,236 screened for TB symptoms, 311 (25%) were identified as presumptive cases; 170 (55%) underwent diagnostic evaluation, yielding 33 confirmed TB diagnoses with 30 (91%) initiating treatment. The targeted venue-based strategy achieved a male-to-female screening ratio of 3:1, demonstrating meaningful reach into an underserved population. Integrated screening identified 4 new HIV cases and 2 individuals re-engaged from loss to follow-up; 11 new diabetes diagnoses and 6 defaulters re-linked; 17 individuals with hypertensive readings including 7 defaulters; and 10 cases of severe acute malnutrition all linked to nearby health facilities.

Conclusion: This community-powered, multisectoral model achieved strong yields across TB, HIV, NCD, and nutrition services while successfully reaching men through targeted venue-based outreach. Crucially, the initiative was financed entirely through local business contributions rather than donor funding demonstrating that effective TB case-finding is achievable through local resource mobilization in a dwindling donor landscape. Embedding outreach within existing CHS structures and local leadership offers a replicable and financially sustainable approach. Scale-up should prioritize systematic mapping of local financing networks, integration of venue-based male outreach into standard TB programme guidance, and outcome tracking of all linked cases to strengthen the evidence base for broader adoption.

EP-3-64

Predictors of Tuberculosis (TB) death outcome: A survival analysis of TB patients notified in Kathiani subcounty, Machakos county, Kenya, January 2021-Dec 2023

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Background: Tuberculosis (TB) death remains a significant barrier to the “End TB strategy targets. In Kenya it’s the leading cause of death among infectious diseases. National mortality rate of 6% (2021). Kathiani SC recorded higher mortality of 9.8% same period necessitating an evaluation of local predictor(s) of death.

Methods: A retrospective cohort study of TB patients notified in Kathiani Sub-County between January 2021 and December 2023 was done. Data were extracted from the TIBU patient management system.

Independent variables included sociodemographic, clinical, and exposure characteristics, our outcome variable was death. TB-related death was defined as any death occurring within 180 days during TB treatment. Descriptive statistics were used to summarize participant characteristics. Survival probabilities were estimated using the Kaplan Meier method, and differences between groups were assessed using the log-rank test. For multivariable analysis, a Cox proportional hazards model was fitted to identify predictors of TB-related death.

Results: A total of 610 patients were analyzed, of whom 444 (73%) were male. The median age was 35 years (IQR: 27–45), 120 (20%) patients had TB/HIV co-infection, 531 (87%) had pulmonary TB with 403 (66%) of them being bacteriologically confirmed. New TB cases 481 (79%) of patients. Undernutrition (based on BMI/Z-score) was present in 385 patients (63%), while 273 (46%) had comorbidities.

Overall, 58 patients (9.8%) died that period and 6-month survival probability was 0.909. In multivariable analysis, significant predictors of death included HIV-positive status (adjusted hazard ratio [aHR] = 3.05; CI: 1.78–5.21) and the presence of comorbidities (aHR = 2.82; CI: 1.40–5.71).

Conclusion: The risk of TB-related death remains high and is largely attributable to HIV infection, comorbidities and the type of TB hence the need for integrated, patient-centered TB care, alongside strengthened TB/HIV collaborative services and improved management of chronic conditions.(establish High riskclinics,mentorship,enhanced community health education).



Tuberculosis Treatment Outcomes Among People Who Use Drugs in Changamwe Sub-County, Mombasa County, 2024

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Background: TB remains a significant global health issue. Drug addiction may compromise TB treatment success, but contextual evidence from high-burden settings like Changamwe Sub-County is limited.

Objective: To evaluate the effect of drug addiction on TB treatment outcomes

Method: Data was retrieved retrospective and analyzed for 2024 from TIBU system. Total assessed 825 adults patients with 206 TB who use drugs.

Results: Out of 206 tuberculosis (TB) patients assessed for drug use, 192 (93%) were male and 14 (7%) were female, indicating a strong male predominance among drug-using TB patients. Among TB patients not using drugs (n=619), 352 (56.9%) were male and 267 (43.1%) were female, showing a relatively more balanced gender distribution. This suggests that drug addiction is more common among male TB patients. Of the previously treated (PT) TB cases (n=174), 61 (35%) reported drug use, indicating a substantial association between prior TB treatment and drug addiction. Nutritional assessment revealed that 60 (30%) patients had severe acute malnutrition (SAM), with the highest proportion (70%) found among alcoholic TB patients compared to others. Moderate acute malnutrition (MAM) was seen in 28 patients (27.7%), while 118 patients (22.4%) had normal nutritional status. The findings suggest that alcoholic TB patients have poorer nutritional status than other drug users, although overall, no strong association was observed between drug addiction and nutritional status in TB patients.

A total of 32 patients had smear-positive results at the end of the second month of treatment follow-up, among whom 20 (62.5%) were drug users. This indicates a delayed sputum conversion among patients with drug addiction. Treatment outcomes, drug-using TB patients showed poorer outcomes: treatment failure occurred in 8 out of 9 cases (88.9%), loss to follow-up (LTFU) in 9 out of 21 cases (42.8%), and mortality in 5 out of 32 patients (15.6%). With 184 out of 763 patients completed treatment.

Conclusion: These results indicate that TB patients who use drugs experience higher rates of treatment failure, delayed sputum conversion, and poor adherence compared to non-drug users.

Integration of NCD service delivery into HIV/TB care at a private tertiary level facility in Nairobi.

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Background: PLHIV are 1.5 times more likely to develop non-communicable diseases. Standalone clinics can result in poor treatment uptake, high attrition rates, delay to care and increased financial burden on patients. An Integrated HIV/TB, NCD, and primary care model utilizes a one-stop approach which allows patients to receive full primary care at a single visit. The aim of this study was to describe the implementation of this integrated model at the M.P. Shah Hospital, Nairobi.

Intervention: The establishment of the comprehensive Infectious diseases' clinic in 2021 at the M.P. Shah Hospital combined screening, treatment, and care for PLWHIV, TB, and NCDs within a primary care setting. The team comprised of an infectious disease physician supported by a nurse and pharmacist. Key focus areas were: service integration, continuity of care, multidisciplinary teams' engagement and strategies to improve both patient satisfaction and medication adherence. Descriptive data was collected retrospectively from clinic records of outpatient visits from March 2021 to December, 2025 then analyzed using descriptive statistics and thematic analysis.

Results: We noted an overall increase in uptake of HIV/TB services at the hospital from 156 patients in March 2021 to 324 by December 2025 with a retention rate of 95%. The percentage of patients who completed anti TB treatment increased from 70% in 2021 to 100% in 2025. Additionally patient satisfaction scores increased from 2.0/4 in 2021 to 3.5/4 in 2025. The overall prevalence of NCD's in PLHIV was 40% (n=130) with hypertension being the most prevalent NCD detected in 40% (n=52) followed by diabetes in 38% (n=49). 22% of patients had hypertension and diabetes.

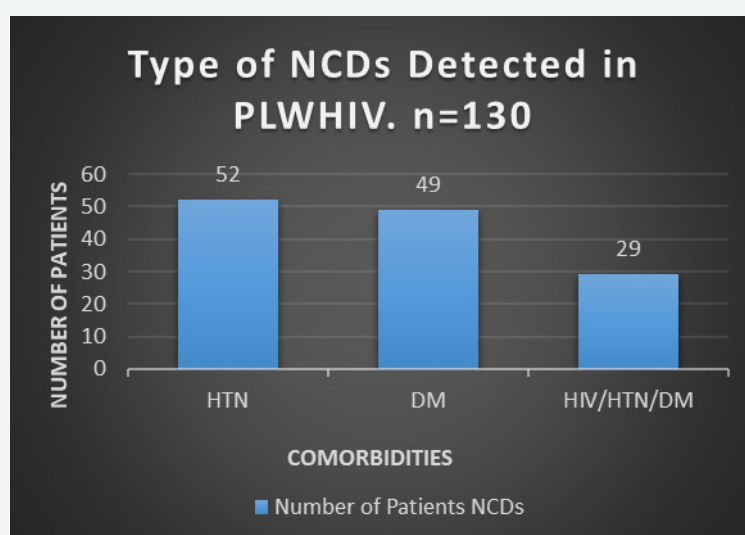


Figure 1- Frequency of Non-communicable diseases in persons living with HIV

Conclusions and Recommendations: Integration led to increased patient uptake, early detection of comorbidities with a clear improvement in treatment adherence and patient satisfaction. This successful model can inform policy change within private institutions on enhanced integrated care.

Integrated Care Models for Lung Disease Management in Sub-Saharan Countries: A Systematic Review

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Introduction: In the 21st century, lung diseases, among them tuberculosis, chronic obstructive pulmonary disease (COPD) and asthma, pose a major challenge in public health across developing economies, especially Sub-Saharan Africa (SSA). The advocacy of integrated care strategies is put forward as a major solution to the management of COPD patients with comorbidities. However, various scholars have produced inconclusive findings due to varying evidence of prior studies. It is in its backdrop; the current study aims to examine the effects of integrated care models on key health outcomes in lung disease management of patients with at least one or more comorbidities.

Methods: The study reviewed 29 papers published between 2010-2025 using the PRISMA framework 2020 to include and exclude journal articles from PubMed database. The study adopted the VOS viewer program to organize the published papers with the prevalence of important key words often used to authenticate the main themes in categories. The data will be extracted and analysed using thematic and meta-analysis to identify integrated models and the health outcomes of the integrated care.

Results: Healthcare systems in Sub-Saharan Africa are characterised by fragmentations, limited resources and inadequate infrastructure, which in many a times make effective diagnosis, treatment and management of lung disease almost impossible. Most countries in the region often employ siloed healthcare approaches, which fail to solve the complex, multifaceted needs of patients with lung diseases with high comorbidities like HIV/AIDS and social factors compounding the problem.

Conclusion: Key integrated care models like community-based integrated care, hospital-community linkage programs among others have significant potential in harnessing lung disease management for patient with high comorbidities, especially in Sub-Saharan Africa region.

Integrated Community-Based Screening for Tuberculosis, Lung Diseases, and Other Health Conditions in Mukuru Kwa Njenga, Nairobi County, Kenya

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Background: Tuberculosis (TB) remains a major public health challenge in Kenya, particularly in densely populated informal settlements where early diagnosis is limited. Non-TB lung conditions such as asthma, chronic obstructive pulmonary disease (COPD), and post-TB lung disease (PTLD) also contribute significantly to morbidity but are often underdiagnosed. Other health conditions equally remain inadequately screened within community settings. This study evaluated an integrated community outreach model combining symptom screening, digital chest X-ray (DCXR), spirometry, and screening for other health conditions to improve detection, diagnosis, and linkage to care.

Methods: A 5-day community-based integrated outreach was conducted in Mukuru Kwa Njenga, Embakasi South Sub-County, Nairobi. Participants were screened using a Lung health algorithm, followed by Digital Chest X-ray (DCXR) for eligible individuals. Presumptive TB cases underwent bacteriological testing, while spirometry assessed chronic respiratory conditions. Additional conditions were screened, and data were analyzed descriptively for screening yield, diagnostic outcomes, and linkage to care.

Results: A total of 769 individuals were screened (66.6% female). Of these, 108 (14.0%) were symptom-positive. TB Cascade: 108 investigated; 9 bacteriologically confirmed and 1 clinically diagnosed TB case; all initiated on treatment. Other diagnosed Lung Conditions: Asthma (8), COPD(2), PTLD(5), and emphysema(5) were detected and referred. Spirometry (n=16): Obstructive patterns (3), restrictive patterns (2), with normal and inconclusive results recorded.

Additional findings included referrals for hypertension (n=14), cardiomegaly (n=6), emphysema (n=5), and mental health services (n=2). HIV testing identified one positive client linked to care. Preventive services including PrEP and condoms were provided.

Conclusion: Integrated outreach combining TB and non-TB lung disease screening is feasible and effective in high-burden, resource-limited settings. This approach enhances early detection of TB while addressing the growing burden of chronic respiratory diseases. Strengthening community screening and diagnostic capacity, particularly spirometry services, improves early respiratory disease detection and diagnosis.

Nurse-Led Inhaler Technique Education Improves Asthma and COPD Patient Care in Clinics

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Background / Implementation Challenge: Incorrect inhaler technique is a major barrier to effective asthma and COPD management. Many patients receive inhalers without proper guidance, resulting in poor drug delivery, frequent symptoms and avoidable exacerbations, especially in busy respiratory/chest clinics.

Intervention / Response: We implemented a nurse-led inhaler technique education program in an adult respiratory clinic. Patients using MDIs and DPIs were assessed for technique. Structured education sessions included step-by-step demonstration, use of placebo devices, patient return-demonstration and individualized correction. Reinforcement was done during follow-ups and incorporated into routine care.

Results and Lessons Learnt: Common errors included poor coordination, inadequate inhalation flow, failure to shake MDIs and omission of breath-holding. Post-education, most patients showed improved technique and understanding of their medications. Patients reported increased confidence and better symptom control. The program was feasible within routine clinic workflows and highlighted the essential role of respiratory nurses in patient education.

Conclusion and Key Recommendations: Nurse-led inhaler education is a practical, low-cost and effective strategy for improving patient-centred care in asthma and COPD. Integrating structured inhaler training into routine services enhances treatment effectiveness and patient outcomes. Health facilities should formally adopt nurse-led inhaler education as a standard part of respiratory care and staff training.

Routine Peak Expiratory Flow Monitoring in Asthma Management: A Systematic Review and a Suggested Monitoring Protocol for Resource-Limited Settings

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Background: Asthma is a chronic inflammatory airway disease affecting more than 260 million people worldwide and remains a major cause of morbidity, particularly in low- and middle-income countries. Objective monitoring of airflow limitation is essential for effective management; however, spirometry is often unavailable in many healthcare settings. Peak expiratory flow (PEF) measurement provides a simple, low-cost alternative for assessing airway function, but its role in routine longitudinal asthma monitoring remains inconsistently implemented

Objective: This systematic review synthesizes evidence on the clinical utility of routine PEF monitoring in asthma management, focusing on its role in detecting airflow deterioration, predicting exacerbations, guiding treatment decisions, and supporting patient self-management.

Methods: This review was conducted in accordance with PRISMA 2020 guidelines. Searches of PubMed, the Cochrane Library, and Google Scholar were performed from database inception to January 31, 2026. Studies involving children or adults with asthma using routine PEF monitoring or PEF-guided management strategies were included. Outcomes assessed included asthma exacerbations, hospitalizations, lung function measures, asthma control scores, and quality of life. Due to heterogeneity in study design and outcome reporting, findings were synthesized using a structured narrative approach.

Results: Forty-three studies met the inclusion criteria. Evidence demonstrated moderate to strong correlations between PEF and spirometric indices, including FEV₁. Declines in PEF and increased diurnal variability were associated with worsening asthma control and increased risk of exacerbations. Routine PEF monitoring incorporated into asthma action plans was associated with improved symptom monitoring, enhanced patient self-management, and better asthma control outcomes.

Conclusions: Routine PEF monitoring is a practical and evidence-supported tool for longitudinal asthma assessment. When integrated into structured action plans and standardized monitoring protocols, PEF measurement may support earlier detection of clinical deterioration and strengthen asthma management, particularly in settings where spirometry access is limited.

Recurrent pulmonary embolism and its association with factor II, factor V leiden.

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Background: Leiden mutation in the gene coding for coagulation factor V is associated with recurrent idiopathic venous thromboembolism (VTE) is unknown, but such data are necessary to evaluate the merits of genetic screening in secondary prevention of thromboembolic disease.

With a history of idiopathic VTE, factor V Leiden was associated with a fourfold to fivefold increased risk of recurrent thrombosis.

Intervention: These data raise the possibility that patients with VTE affected by factor V Leiden may require more prolonged anticoagulation to prevent recurrent disease compared with those without mutation. A mutation in the gene coding for coagulation factor V appears to be the underlying cause of most cases of resistance to activated protein C, a recently described abnormality of hemostasis associated with pathological thrombus formation. This mutation, factor V Leiden, is present in 4% to 6% of the general population. Data are also available indicating that the risk of thrombosis associated with factor V Leiden appears to be limited to the venous system, with no increase in rates of arterial thrombosis, at least in the coronary and cerebral circulations.

Lesson: The Prothrombin G20210A mutation (PTM) is a common inherited thrombophilia—second only to Factor V Leiden—that causes elevated prothrombin levels, significantly increasing the risk of venous thromboembolism (VTE), including recurrent pulmonary embolism (PE) and deep vein thrombosis (DVT). Carriers have an approximately 1.6 to 5-fold higher risk of recurrence. Inherited thrombophilia is an important cause of venous thrombosis. The Factor V Leiden (FVL) is the most commonly encountered mutation, followed by the prothrombin G20210A gene mutation (PTM). The typical venous thrombotic events (VTEs) associated with PTM mutations are deep vein thrombosis (DVT) and pulmonary embolisms (PE). The PTM is inherited in an autosomal dominant pattern with variable penetrance. While heterozygous PTM mutations are more frequent and well documented in the literature, rare cases of homozygous PTM mutations are also reported.

Conclusion: GeneXpert Factor II & Factor V are able to decipher such cases.

Integrating Spirometry Test into Post Tuberculosis Follow Up, Evidence from Ruaraka/Roysambu Subcounties - Nairobi County

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Background: Tuberculosis (TB) remains a major public health challenge in Kenya with significant morbidity and long-term respiratory complications even after successful treatment. While molecular diagnostic and computer aided detection (CAD) chest x-rays have improved case finding, there is growing recognition that post TB patients often experience chronic lung impairment that is not adequately captured by these tools. Globally, evidence shows that individuals who have completed TB treatment are at increased risk of developing chronic respiratory diseases like post-TB lung disease (PTLD)

The objective of this study was to evaluate the use of spirometry as a diagnostic tool for post TB lung disease.

Methodology: Cross-sectional study conducted at Mathare North Hospital that used retrospective survey method to analyze spirometric outcomes among symptomatic patients previously treated for pulmonary tuberculosis between July 2025 and February 2026. CHI square test was used to determine statistical significance. Data was obtained from interim lung health register for patients who were declared cured or treatment complete. The outcomes were categorized as either obstructive, restrictive or normal.

Results: 174 patients underwent spirometry testing with 93 (53%) having previous pulmonary tuberculosis disease. Of the 93, 27 (29%) were female and 66 (71%) were male. Spirometry outcomes were:

- a. Normal spirometry- 16 (17%) patients with 12 male and 4 female
- b. Restrictive features- 17 (18%) patients with 11 male and 6 female. Lung collapse 7(41%), lung cavity 10(59%)
- c. Obstructive features - 62 (67%) patients with 44 male and 18 female. COPD cases were 28(45%), lung fibrosis 34(55%),

Conclusion and Recommendations: PTLD is highly prevalent among TB survivors, with up to half developing chronic respiratory impairment making structured follow-up essential. Spirometry is a critical tool for detecting and monitoring post-tuberculosis lung disease (PTLD). This should be integrated with symptom screening and imaging to improve respiratory outcomes among post TB clients

Operationalizing the Nyandarua County Integrated Specimen Referral System (ISRS): A County Strategic Model to Transform Early TB Diagnosis

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Introduction: Timely TB diagnosis remains a critical bottleneck in resource-limited settings due to fragmented specimen referral systems. Nyandarua County, Kenya (population 724,790), faced diagnostic delays from irregular donor-dependent transport, yielding >72-hour turnaround times, 24% specimen rejection rates, and suboptimal case notification rates (~200/100,000). This study evaluates the county-led ISRS pilot (July–December 2025) in reducing turnaround time, rejection rates, and strengthening diagnostic performance.

Intervention: A hub-and-spoke model unified TB, HIV, and other specimen referrals across 37 facilities linked to 5 diagnostic hubs. Core elements included: deployment of 5 motorbikes and 1 dedicated vehicle with GPS-tracked scheduled routes; comprehensive training for health facility managers and lab staff; standardized ISRS SOPs; thermo-logger-enabled cold chain monitoring; and weekly virtual performance reviews. Robust governance via county and sub-county ISRS coordinators and Technical Working Groups ensured sustainability.

Results: The 6 months pilot referred 6,105 specimens with 100% facility coverage. Transformative outcomes: turnaround time slashed >65% to 24 hours; rejection rates halved from 24% to 12%; 5 temperature excursions resolved without sample loss; 100% results returned electronically and hard copy. Service integration eliminated silos, saving KES 1.2M in operational costs through reduced repeat testing and optimized logistics, while expanding access to 58% of county facilities.

Lessons Learned

- Decentralized ownership drives sustainability
- Digital tracking and SOPs ensure quality and efficiency
- Strategic partnerships (AMREF and UJTP) accelerate implementation
- Domestic financing transitions from donor dependence

Conclusions & Recommendations: Nyandarua ISRS demonstrates county-led integration revolutionizes TB diagnostics. Recommendations: dedicate county budget lines; embed in Primary Health Care, SHA and Taifa Care reforms; adopt WHO innovations (near-POC tests, tongue swabs, sputum pooling); achieve full county scale-up. This model accelerates UHC and End TB Strategy goals.

Strengthening Health Systems for Integrated Lung Health: From Detection to Recovery

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Background / Implementation Challenge: Respiratory diseases remained a leading cause of morbidity and mortality globally, yet lung health was often inadequately integrated into health systems. Key challenges included weak diagnostic capacity, fragmented service delivery, delayed care-seeking, and limited coordination across levels of care. These systemic gaps undermined early detection, continuity of care, and long-term management of conditions such as tuberculosis, chronic obstructive pulmonary disease, asthma, and post-tuberculosis lung disease. This programmatic intervention was implemented at Tigoni Level 4 Hospital to address these gaps and strengthen integrated respiratory care services.

Intervention / Response: A health systems strengthening approach was implemented at Tigoni Level 4 Hospital through the development of an integrated lung health service delivery model. The model connected screening, diagnosis, treatment, and follow-up within a coordinated continuum of care anchored in primary healthcare. Key components included co-location of screening, diagnostic, treatment, and follow-up services, adoption of digital diagnostic technologies, deployment of link assistants at triage points to support systematic screening, and strengthening workforce capacity through multidisciplinary collaboration. Three lung health focal persons were trained and deployed to support implementation and service integration within the facility.

Results and Lessons Learnt: The integrated model improved service coordination and reduced fragmentation across the continuum of care. Screening for respiratory conditions increased by 100% following the deployment of link assistants at triage points, enabling systematic screening of patients at their point of entry into care. Enhanced screening and diagnostic capacity contributed to a case detection rate of 99%. The co-location of screening, diagnostic, treatment, and follow-up services within the same facility eliminated the need for inter-facility referrals, reducing delays and improving continuity of care. Key lessons learned included the importance of integrated screening pathways, dedicated lung health focal persons, workforce capacity strengthening, and service integration in improving access to timely diagnosis and treatment.

Conclusions and Key Recommendations: Strengthening health systems through integrated lung health service delivery improved access to quality respiratory care and enhanced continuity of care across service levels. Integrating screening, diagnosis, treatment, and follow-up services within a single facility increased screening coverage, improved case detection, and reduced service fragmentation. Health systems should prioritize integrated lung health services within primary healthcare, invest in diagnostic infrastructure and workforce development, and adopt coordinated models of care to improve patient outcomes and advance progress toward universal health coverage.

From Detection to Recovery: Patient-Centered and Equitable Lung Disease Care in Nairobi County:

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Affiliation:

¹Network of TB Champions Kenya.

Background: Lung disease remains a major public health challenge in Nairobi County. Patients often experience delayed detection, fragmented services, and barriers to continuous care. These challenges disproportionately affect populations facing social and economic disadvantage. Understanding patient experiences is essential to inform integrated, patient-centered, and equitable lung health pathways.

Methods: A qualitative descriptive study was conducted in 5 health facilities and community settings in Nairobi County. Data were collected through in-depth interviews and focus group discussions with patients living with lung disease, caregivers, and healthcare providers between month of October 2025 to December 2025 around 44 patients were interviewed. Discussions explored experiences across the care continuum, including detection, diagnosis, treatment, follow-up, communication, and access to services. Data were analyzed thematically to identify key challenges and opportunities for improving integrated lung disease care.

Results: Participants reported delayed presentation to health facilities on the onset of symptoms, limited understanding of lung disease, and financial and transport barriers to accessing care. They emphasized the importance of clear communication, respectful treatment, and involvement in decision-making. Community outreach, patient education, and follow-up support were perceived to improve trust, engagement, and continuity of care. Integrated approaches like integrated care approach addressing both medical and social needs were consistently highlighted as essential.

Conclusion: Findings from Nairobi County highlight the value of patient-centered and equitable approaches to lung disease care. Strengthening integrated pathways from detection to recovery—through improved communication, community engagement, and continuity of care—can enhance patient experiences and support better lung health outcomes. These findings are relevant to urban lung health programs, informal settlements and health system strengthening.

Strengthening TB Detection and Adherence through Social Contact Invitations in Kiambu County, Kenya

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Background: Tuberculosis (TB) contact tracing has traditionally focused on household contacts, yet this approach yields sub-optimally particularly among men in urban and peri-urban settings who live alone while their families remain in rural areas. In the Mount Kenya region, high rates of unmarried men, alcohol use disorder, and peer-centered social lives mean that transmission occurs predominantly within workplaces and social gathering sites rather than households. These dynamic social networks represent a critical, overlooked reservoir for TB transmission. This study aimed to determine the yield of a social contact invitation strategy as a complementary approach to conventional household contact tracing across two sub-counties in the Mount Kenya region.

Methods: A programmatic descriptive study was conducted using routine TB screening registers and Community Health Promoter (CHP) screening reports, with descriptive analysis of available programme data. Between November 2022 and December 2023, index TB patients were educated on transmission, risk factors, and symptom identification, and each was tasked with inviting at least one social contact for screening at health facilities or community screening activities. Patients unable to approach contacts directly were supported by CHPs who conducted sensitization and screening at social gathering sites, shifting the focus from static household units to dynamic social networks and inclusion of both Bacteriologically confirmed cases and clinically diagnosed TB cases.

Results: A total of 257 symptomatic social contacts were invited for screening, yielding 37 new TB diagnoses a detection rate of 14%. Of these, 21 (57%) were bacteriologically confirmed and 16 were clinically diagnosed through symptomatic screening and CAD X-ray. Among bacteriologically confirmed cases, 17 (81%) had radiographic features consistent with TB. Beyond case detection, the strategy measurably improved treatment outcomes: treatment success rate (TSR) rose to 92%, up from 86% in 2022, while lost to follow-up declined to 4% from 8%. Patients within shared social circles spontaneously established informal peer-support mechanisms, supported by CHPs, holding each other accountable for treatment completion.

Conclusion: A social contact invitation strategy achieved a 14% TB detection yield among symptomatic social contacts substantially higher than yields typically reported from household contact tracing alone while simultaneously improving treatment adherence and reducing loss to follow-up. Empowering index patients as health educators reduced stigma and activated peer-support networks within high-risk social groups. To build on these gains, TB programmes should integrate structured social contact invitation into routine case-finding protocols, pair this with targeted alcohol use disorder support to address a key driver of transmission and treatment interruption, and scale peer-led models in male-dominated urban settings where household tracing consistently underperforms.

Ethical implications of the existing gender disparities in Tuberculosis care in Uganda and other low-resource, high Tuberculosis burden settings.

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Background: Tuberculosis (TB) remains a pressing global health concern, particularly in low- and middle-income countries (LMICs). According to the Global Tuberculosis Report, in 2023, an estimated 10.8 million people developed TB worldwide, with approximately 95% of these in LMICs. In Uganda, despite considerable investments in TB care services, males exhibit suboptimal health-seeking behavior compared to females, yet in principle, TB services are universally open to all. It is on that basis this commentary presents a bioethical perspective on the ethical implications of the existing gender disparities in TB care.

Results: Respect for persons requires that individuals be able to exercise autonomy and make health decisions with dignity. However, cultural expectations of masculinity often discourage men from acknowledging illness or seeking care early, limiting their ability to act in their own health interests. Justice in healthcare demands fair and equitable access to services, yet gender disparities in TB care seeking undermine this principle. Men's underutilization of TB services, despite a higher burden of undiagnosed disease, is therefore not only a public health challenge but also an issue of justice that affects households and communities through continued transmission. The principle of non-maleficence extends beyond clinical practice to health system design; neglecting well-documented gender disparities constitutes indirect harm, particularly when evidence supports gender-responsive interventions. Beneficence calls for proactive efforts to improve well-being through inclusive and responsive TB programs. Meaningful community engagement that involves both men and women in designing and evaluating TB interventions can produce policies and services that better reflect lived realities and promote more ethical and effective care.

Conclusion: Examining gender disparities in TB care through a bioethical lens shows that these inequities extend beyond a public health concern. They represent a moral obligation, requiring ethically grounded, gender-responsive approaches to promote fairness, dignity, and equitable access to tuberculosis prevention, diagnosis, and treatment.

Holistic approach in managing Tuberculosis (TB) patients at Chaani CGTRH, Changamwe Sub County, June 2024 to May 2025

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Background: Tuberculosis (TB) remains a significant public health burden in Mombasa County, with Changamwe Sub-County among the most affected areas. Despite ongoing national and county-level interventions, challenges such as delayed diagnosis, poor treatment adherence, and co-morbidities like HIV, alcoholism, drug addiction and malnutrition continue to hinder effective TB control at Chaani CGTRH.

Objective: To improve TB treatment outcomes by providing integrated medical, psychological, nutritional, and social care to TB patients at Chaani CGTRH.

Methods: From June 2024 to May 2025, 110 TB patients at Chaani CGTRH received comprehensive care. Interventions including nutritional assessments and supplementation, mental health screening using PHQ-9, substance use screening using the CAGE questionnaire, and treatment adherence assessment via the Morisky Medication Adherence Scale. Routine monitoring involved blood pressure, random blood sugar (RBS), and HIV testing, with referrals made as needed.

Results: Out of 110 patients, 30 (27%) were diagnosed with mild depression and 3 (3%) with severe depression; all were referred to mental health services, and peer-led support groups were formed. Five patients (4.5%) with poor adherence were enrolled in Directly Observed Therapy (DOT). Nine (8%) malnourished patients received nutritional supplementation, including Ready-to-Use Therapeutic Food (RUTF). Three patients (3%) were newly diagnosed with diabetes, and 13 (12%) with hypertension; all were linked to the Medical Outpatient Clinic (MOPC) for further management. Five patients (4.5%) with newly diagnosed HIV and linked to care.

Conclusion: A holistic, patient-centered approach at Chaani CGTRH significantly improved TB treatment outcomes by addressing psychological, nutritional, and medical co-morbidities. To sustain and expand this impact, continued investment in integrated care, capacity building, and robust referral systems is essential. This model offers a replicable framework for improving TB care in similar high-burden settings.

Baskets of Hope: Boosting TB Treatment Success rates through food supplementation

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Background: Tuberculosis (TB) remains a major public health challenge in Nairobi County, particularly among populations living in low-income and informal settlements. As Kenya's largest city, Nairobi consistently records the highest absolute TB cases nationally, with a 2022 survey indicating a pulmonary TB prevalence of 806 per 100,000 populations and a treatment success rate of 77% - far below the WHO's 90% target, with socio-economic vulnerability being a major contributing factor.

Underweight TB patients often face a double burden since malnutrition weakens their immune response, while TB medication can cause severe side effects when taken without food, which is a major cause of non-adherence. This study evaluated whether providing food baskets could improve treatment adherence and treatment success rates

Intervention: Pamoja TB Group, supported by 1 Life 1 World, implemented a six-month intervention aimed at strengthening TB treatment outcomes in Nairobi County. 30 TB patients with a Body Mass Index (BMI) below 18.5 were identified and for six months, they received monthly food baskets containing high-protein (Green-grams, Beans, Porridge-flour) alongside their standard medication. Their BMI, clinic attendance, and final treatment outcomes were tracked using TB registers.

Results: Patients receiving food baskets showed an 100% rate of treatment completion and 87% weight gain. Out of 33 patients supported, 17(52%) of them had a BMI change of 3-4, 10(30%) had a BMI change of 4-5 and 6(18%) had a BMI change of 0-2 between June and December 2025. Importantly, patients reported fewer gastrointestinal side effects, hence improved drug tolerability. They also reported general improvement in self-esteem and social behavior.

Conclusion: The outcomes of this study highlight the urgent need for integrating nutritional and psychosocial support into TB care as this is not only a complementary intervention, but a foundational component of effective, patient-centered TB care, that not only reduces treatment interruption rates but also save more lives.

Integrated Patient-Centered Care and TB Treatment Outcomes in an Urban Informal Settlement, Kenya

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Introduction: Patients in Nairobi's urban informal settlements, such as Korogocho, face significant multifaceted barriers to tuberculosis (TB) care, including extreme poverty, malnutrition, substance use disorder, and social stigma. Traditional one-size-fits-all models of care often fail to address these critical social determinants of health, frequently resulting in lost-to-follow-up (LTFU) cases. To bridge this gap, in 2024 Comboni Health Programme implemented a comprehensive patient-centered care model integrating standard clinical care with targeted social interventions: nutritional support (food baskets), home-based DOTS via community health promoters, psychosocial support group for TB clients, and flexible clinic hours tailored to casual labourers. This study evaluates the impact of this integrated approach on treatment success and patient retention within the community.

Methods: A retrospective descriptive study was conducted to evaluate TB treatment outcomes between January and December 2024, drawing data from the Facility TB4 register and TIBU Lite. The primary outcome variables of interest were treatment success rates and LTFU rates, compared against 2023 baseline data. Descriptive statistics were used to summarize findings, including frequency counts and percentages. Data were analyzed using Microsoft Excel. This study constituted a retrospective review of routinely collected program data and was conducted in accordance with institution data use protocols.

Results: A total of 66 TB clients were identified from the 2024 retrospective review. Following implementation of the patient-centered model, TB treatment success rates at CHP rose to 98% (n=65) in 2024, representing a significant increase from 82% (n=18) recorded in 2023. The improvement in retention was further evidenced by a reduction in LTFU cases from 4 (5%) in 2023 to 1 (1%) in 2024, alongside a notable increase in TB case finding driven by referrals from patients currently on treatment. Qualitative feedback revealed that the principal factors motivating treatment completion included the alleviation of hidden costs (transportation and food) and the reduction in clinic waiting times.

Conclusion: Addressing the unique socio-economic realities of clients in informal settlements is essential for ending TB in Kenya. The success of the Comboni Health Programme demonstrates that integrating social support with clinical interventions provides a highly effective and scalable model for resource-constrained urban settings.

Interplay Between Malnutrition and Respiratory Morbidity in Infants Along the Kenyan Coast: Implications for Integrated Child Lung Health

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Introduction: Acute respiratory infections remain a leading cause of infant mortality in Kenya, with malnutrition acting as a critical but often under-addressed driver of poor respiratory outcomes. Along the Kenyan coast, high rates of undernutrition coexist with a substantial burden of pneumonia and other respiratory illnesses. Malnutrition impairs immune competence and respiratory muscle function, increasing both susceptibility to infection and disease severity. In turn, recurrent respiratory illness contributes to growth faltering, creating a vicious cycle. However, locally generated evidence quantifying this interaction remains limited, constraining integrated intervention strategies.

Methods: We conducted a multi-site, facility-based cross-sectional study across public and private health facilities in Mombasa, Kilifi, and Kwale counties. Infants aged 0–12 months were consecutively enrolled from outpatient and inpatient services. Nutritional status was assessed using World Health Organization growth standards (weight-for-age, length-for-age, and weight-for-length z-scores). Respiratory morbidity was defined by clinician-diagnosed pneumonia, bronchiolitis, and upper respiratory tract infections. Data on feeding practices, immunization status, and socio-demographic characteristics were collected using structured caregiver questionnaires. Multivariable logistic regression was used to evaluate associations between nutritional status and respiratory morbidity, adjusting for key confounders.

Results: Preliminary findings indicate a substantial burden of undernutrition and respiratory morbidity among infants along the Kenyan coast. Early analysis suggests that undernourished infants experience increased susceptibility to respiratory illnesses, including pneumonia and bronchiolitis, highlighting a significant interaction between nutritional status and respiratory health. These findings provide locally generated evidence addressing the study objectives and contribute new knowledge to support integrated child lung health interventions.

Conclusion: Malnutrition is a significant and modifiable determinant of respiratory morbidity in infants along the Kenyan coast. Addressing this dual burden requires integrated strategies that combine nutritional support with strengthened prevention and management of respiratory illness.

Keywords: Malnutrition; Respiratory morbidity; Infants; Pneumonia; Undernutrition; Child lung health; Kenya; Coastal Kenya; Acute respiratory infections; Integrated care

From Detection to Recovery: Ward-Based TB Champions Improving Diagnosis and Patient Outcomes in Kiambu

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¹network of TB Champions Kenya – Kiambu Chapter

Background / Implementation Challenge: Stigma, low awareness, and weak community–facility linkages drive delayed tuberculosis (TB) diagnosis in Kiambu County, contributing to ongoing transmission and poor patient outcomes. There is a need for decentralized, patient-centered approaches to improve early detection and continuity of care.

Intervention / Response: A community-led model was piloted in Kabete and Thika sub-counties using 15 ward-based TB Champions (5 in Kabete and 10 in Thika), each linked to a nearby public health facility. Champions conducted active case finding in high-risk settings, including informal workplaces, schools, and transport hubs, identifying symptomatic individuals and linking them for immediate diagnostic testing.

Champions supported the full care pathway from symptom identification to diagnosis, treatment initiation, adherence support, and follow-up. The intervention integrated community-led monitoring supported by Amref Health Africa using the iMonitor+ Kenya platform to track patient pathways, diagnostic delays, and service gaps.

Results and Lessons Learnt: Between November 2024 and July 2025, TB Champions reached over 1,400 individuals and identified 70 presumptive TB cases for testing. The model improved timeliness of diagnosis and strengthened referral completion, reducing missed opportunities for case detection. At the patient level, champions enhanced treatment adherence, psychosocial support, and follow-up, contributing to reduced loss to follow-up.

Conclusions and Key Recommendations: Ward-based TB Champions linked to health facilities improve early detection, diagnostic timeliness, and patient outcomes. This cost-effective, scalable, and digitally enabled model strengthens integrated lung health systems and should be expanded to similar high-burden settings.

Cross-Border Mobility and Tuberculosis Treatment Interruption Among Male Migrant Workers in the Kenya–Uganda Border Region: A Program Experience from Sirisia Sub-County

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Background: Tuberculosis (TB) treatment requires strict adherence to a six-month regimen to ensure cure and prevent drug resistance. However, in border communities such as Sirisia Sub-County in Western Kenya, mobility linked to informal cross-border trade and casual labor poses a significant barrier to treatment completion. As a program implementer working in the Western Region, I encountered a recurring challenge among male TB patients who frequently cross into Uganda for work.

Many initiate treatments at local health facilities in Kenya but interrupt their medication once they resume work across the border. Economic pressure and the need to sustain livelihoods often outweigh adherence to treatment.

As a result, patients frequently discontinue medication prematurely, only returning to health facilities when their symptoms worsen. This pattern of treatment not only delays recovery but also increases the risk of treatment failure and potential drug-resistant TB.

Intervention: Program staff, in collaboration with community health promoters and facility-based TB focal persons and the Subcounty TB Coordinator, began documenting cases of treatment interruption linked to cross-border mobility. Community health volunteers engaged affected patients through follow-up visits, emphasizing the importance of treatment completion. Health workers also attempted to adapt patient-centered approaches by providing treatment education and coordinating follow-ups with local community networks to track patients who had started treatment.

Results: Program observations revealed that economic vulnerability and labor migration are key drivers of treatment interruption among male TB patients in border communities. Traditional facility-based treatment models are often insufficient for mobile populations. The experience highlighted the need for TB programs to consider occupational and mobility patterns when designing adherence strategies.

Conclusion: Addressing TB treatment interruption in border regions requires cross-border coordination between health systems, flexible patient-centered treatment models, and targeted engagement of mobile male populations. Strengthening collaboration between Kenyan and Ugandan health facilities, alongside community-based follow-up mechanisms, may improve treatment continuity and reduce the risk of drug-resistant TB in border communities.

Miliary Lung Nodules and Cutaneous Lesions in an African Woman: A Case Report Highlighting Uncommon Presentation of Sarcoidosis.

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Introduction: Sarcoidosis is a multisystem granulomatous disease that most frequently affects the lungs and intrathoracic lymph nodes. A miliary pulmonary pattern is exceptionally rare and poses a significant diagnostic challenge, particularly in tuberculosis-endemic regions.

Methods: We describe a case of a 45-year-old African woman who presented with diffuse miliary lung nodules, constitutional symptoms, extensive cutaneous lesions, lymphadenopathy, and neuropathy, whose evaluation diagnosed miliary sarcoidosis with extensive extrapulmonary manifestations.

Results: A 45-year-old African woman presented with a year-long history of progressive multisystem illness manifesting initially as inflammatory polyarthritis, later associated with extensive cutaneous lesions, lymphadenopathy, and progressive dyspnea on exertion to the point of oxygen dependence. She was initially misdiagnosed as having rheumatoid arthritis and later treated as leprosy and presumed disseminated tuberculosis. Histopathologic confirmation of non-caseating granulomas and systematic exclusion of infectious etiologies eventually established the diagnosis of miliary sarcoidosis with extensive extrapulmonary manifestation, and she was treated with systemic corticosteroid and infliximab, with notable clinical and radiographic improvement.

Conclusion: Our case highlights the importance of maintaining diagnostic vigilance for sarcoidosis in atypical presentations and emphasizes the central role of tissue diagnosis and systematic approach in granulomatous disease evaluation, given the wide range of both infectious and non-infectious differentials.

Aptamer-based research in EML4-ALK fusion-expressing Non-small cell lung cancer

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Background: Actionable mutations in oncogenes drive the development and progression of lung cancers. Anaplastic lymphoma kinase (ALK) is one of the actionable alterations that have been extensively studied. These EML4-ALK fusions occur in 3-5% of non-small cell lung cancer cases. However, the current methods of diagnosing and delivering therapies are not precise enough, increasing the rates of relapse. Aptamers are short RNA or DNA oligonucleotides that can fold in a 3D structure and bind specifically and with high affinity to any target of interest.

Methods: We selected through cell-SELEX an RNA aptamer pool that can selectively bind ALK+ NSCLC cells and EVs. EML4-ALK A549 cells and A549 cells were cultured in RPMI complete medium with 1% A/A while BEAS-2B cells were cultured in DMEM complete medium with 1% A/A. Binding assay was then conducted on the cells and extracellular vesicles using RT-qPCR method and by flow cytometry.

Results: Among the 6 most enriched sequences of the pool, three of them—H4, M4 and V1, showed the highest specificity and affinity for ALK+ NSCLC cells. Furthermore, M4 was also able to discriminate between ALK+ NSCLC, ALK- NSCLC and normal lung cells, suggesting it as a good candidate for precise diagnosis and targeted therapeutics in EML4-ALK fusion expressing non-small cell lung cancer.

Conclusions and Recommendations: Our preliminary results are encouraging and they support the hypothesis that our selected aptamers can be used to selectively target ALK+ NSCLC. M4 aptamer exhibited a significantly higher binding on ALK-fusion expressing A549 cells compared to parental A549 and BEAS-B2 cells. These results also support our assumption that our aptamers can be functionalized to enhance the capture of circulating tumor cells. Future studies should focus on identifying and characterizing the molecular targets of aptamers on both EVs and cells.

Impact of Delayed TB Diagnosis on Mortality in Referral Hospitals: A Case Study of Kenyatta University Teaching, Referral and Research Hospital (KUTRRH)

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Background: Tuberculosis (TB) remains a major public health concern, particularly in high-burden countries where delayed diagnosis contributes to poor outcomes. In 2023, an estimated 133,000 people in Kenya developed TB, including 16,000 children, with a 42% reduction in TB mortality between 2015 and 2023. Despite this progress, delayed diagnosis at the primary health care level continues to result in severe disease and increased mortality. This study assessed the impact of delayed TB diagnosis on mortality among patients admitted to Kenyatta University Teaching, Referral and Research Hospital (KUTRRH), focusing on referrals from primary healthcare facilities.

Methods: A retrospective review was conducted for the year 2024 involving 206 TB-notified patients at KUTRRH. Patient records were analyzed to determine timing of diagnosis, comorbidities, and treatment outcomes. Delayed diagnosis was defined as TB confirmed after hospital admission following referral from primary healthcare facilities.

Results: Of the 206 patients, 195 (95%) were diagnosed with TB after admission, indicating delayed diagnosis at the primary care level. A total of 21 patients (10.8%) died during the study period. All deaths occurred among inpatients, with 20 (95%) occurring during the intensive phase of TB treatment. Among the deceased, 19 (90%) had documented comorbidities, while only 2 (10%) presented with malnutrition. These findings suggest that delayed diagnosis, coupled with unmanaged comorbidities, significantly contributed to mortality.

Conclusion: Delayed TB diagnosis at the primary healthcare level is strongly associated with increased inpatient mortality in referral hospitals. Strengthening early case detection, improving screening and management of comorbidities, and ensuring timely treatment initiation are essential to improving patient outcomes.

Keywords: Tuberculosis, delayed diagnosis, mortality, comorbidities, referral hospitals, Kenya, TB outcomes, primary healthcare, KUTRRH

Youth Led Intergration of Air Pollution, Climate Exposure and Zoonotic TB for Lung Health in Kenya

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² YOUNITE GLOBAL

³ Envisioned Youth Adolescent Ambassador on Move

Introduction: Air pollution and climate-related environmental exposures are major drivers of poor lung health in rural Kenya, where over 80% of households rely on biomass fuels. Climate pressures, including deforestation and fuel scarcity, increase exposure to indoor smoke. In addition, zoonotic tuberculosis (bovine TB), transmitted through unpasteurized milk and livestock contact, remains poorly integrated into community health interventions. Adolescents, particularly girls involved in cooking, face disproportionate exposure. This programme aimed to implement a youth-led, patient-centered integrated approach linking environmental risk reduction, early TB detection, and referral pathways to improve lung health outcomes.

Methods: A community-based programmatic intervention was implemented in rural Kenya using trained youth peer educators (TB Champions), targeting adolescents and caregivers. Activities included 10 community dialogues, 5 school outreaches, and 200 household visits.

The intervention integrated: (i) reduction of household air pollution through ventilation improvement and smoke mitigation; (ii) climate-related exposure awareness; (iii) TB prevention and early symptom recognition; and (iv) zoonotic TB education using a One Health framework.

A gender-responsive approach incorporated menstrual hygiene support to enhance adolescent girls' participation. Youth Champions conducted symptom screening and facilitated linkage to TB diagnostic services. Programme monitoring tracked reach, behavior change, and referral outcomes.

Results: A total of 748 individuals were reached, including 62% adolescents and youth. Knowledge of air pollution and climate-related lung health risks increased by 68%, and 54% of households adopted at least one improved air quality practice.

Fifty-nine individuals with respiratory symptoms were identified; 40 (68%) completed referral for TB screening. Zoonotic TB awareness improved, while gender-responsive strategies increased participation of adolescent girls in high-exposure households.

Conclusion: This youth led model demonstrates a patient-centered pathway linking environmental risk reduction, early detection, and referral for lung health. Integrating such approaches into primary health systems can strengthen TB care, improve continuity of care, and support resilient, climate-responsive lung health outcomes in resource-limited settings.

A Digital Patient Navigation Model Using TikTok to Improve Tuberculosis (TB) and Lung Health Services Uptake among Young People in Kenya.

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Background and challenge to implementation: Young people (15–24 years) increasingly use digital platforms to access health information, presenting an opportunity to improve Tuberculosis (TB) and lung health knowledge, reduce stigma, and promote timely care-seeking. However, evidence on leveraging social media beyond health education to support personalized patient navigation and linkage to TB and lung health services remains limited. This study evaluated a digital patient navigation model using TikTok with WhatsApp linkage and telephone communication to improve TB and lung health service uptake among young people.

Intervention: Between December 2024 and June 2026, over 300 youth-friendly TikTok videos delivered evidence-based information on TB and lung health. Individuals requiring additional support received personalized counselling, symptom screening, referrals, and follow-up through WhatsApp and telephone communication. TikTok analytics, communication records, and self-reported service utilization data were descriptively analyzed to assess reach, engagement, and service uptake.

Results: Over 300 educational videos generated 298,628 views, 13,500 likes, and 3,644 followers, averaging 970 views per video. The highest-performing videos reached 27,200 on TB treatment and 16,000 views on TB symptoms. The platform reached audiences across several countries, with the largest audiences from Kenya. Overall, 135 Kenyan individuals reported seeking TB services after engagement: Of these, 60(44%) self-reported seeking care through WhatsApp messages or calls, 40 (30%) confirmed care-seeking during telephone follow-up, and 35 (26%) contacted the platform after presenting to Rhodes Chest Clinic. Additional users were referred to nearby TB diagnostic and treatment facilities through personalized navigation.

Conclusion: The Mary Wa TB initiative demonstrates that social media can extend beyond health education to support digital patient navigation for young people. Integrating evidence-based information with personalized counselling and referral offers a feasible, scalable, youth-centered approach to strengthening linkage to TB and Lung health services and improving timely care-seeking.

- 1) The Tom Arocho Award for commitment and excellence in the coverage of lung health issues in the media**

This is awarded to an individual Kenyan journalist who has contributed immensely to the coverage of Lung health issues in the Kenyan media. This may be in form of coverage and reporting on lung health issues for the electronic media or articles for the print media. These are stories that highlight issues on:

 - TB situation in Kenya
 - The plight of TB patients in Kenya
 - Emergence and response to MDRTB
 - Government response on MDRTB and other lung health issues.
 - Tobacco and Lung health.

- 2) The James Ang'awa Award for Excellence in Advancing Public Health Gains in Lung Health in Kenya**

This is awarded to an organization or an individual who has contributed immensely to the public health gains made in lung health in Kenya. This contribution may be in any of the following areas:

 - Development of public health policies that have impacted on lung health in Kenya
 - Implementation of public health programmes that have resulted in improved lung health in Kenya:
 - Access to care
 - Improved treatment outcomes
 - Improved quality of care
 - Improved Equity in Access
 - Overcoming gender or other imbalances
 - Removing financial or other barriers to access to care

- 3) The Job Bwayo Award for Science in Lung Health in Kenya**

This is awarded to an organization or an individual who has contributed immensely to the advance of scientific knowledge in lung health in Kenya. This contribution may be in any one of the following areas:

 - Development of research policies and programmes that have had a major impact on scientific research on Lung health in Kenya
 - Implementation of research programmes that have had a major impact on the development of policies and practices in lung health in Kenya

- 4) The Joseph Aluoch Young Scientist and Best Abstract Awards**

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- 5) The Luceta community Actor Award (Stop TB-Kenya)**

This will be awarded to a community person who can demonstrate their outstanding contribution to Lung health by providing an original initiative that has positively impacted lung health. This could be inform of using their lived experiences to make an impact or an original community initiative.

- 6) Top Abstract Contributor Award**

This award honours a conference delegate who submitted the highest number of abstracts accepted for presentation, demonstrating remarkable dedication to research, knowledge sharing, and strengthening the evidence base for improved lung health.

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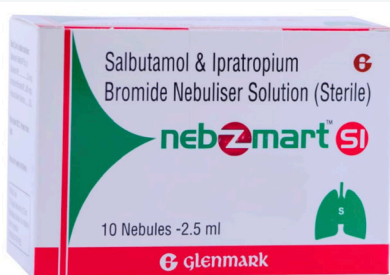
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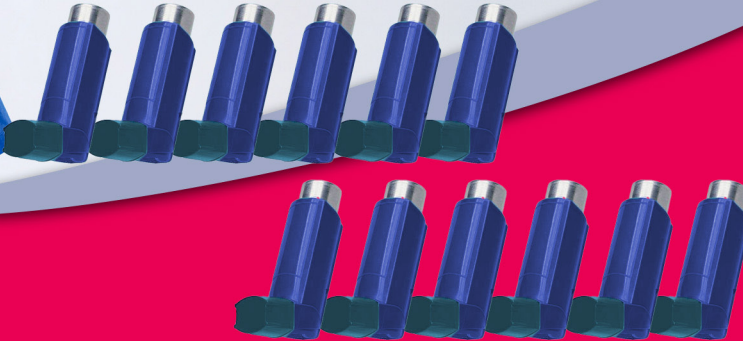



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Glenmark, touching the lives of patients for over three decades.

>12 Canisters of
SABA in a year,
increased the risk of
Asthma related death¹



GINA 2024 recommends **Track-1 (MART)** as preferred track and as simple regime; the same medication can be used for both-symptom relief and maintenance¹

Symbicort® Turbuhaler®

extends relief to asthma patients^{2,3}

For further information,
kindly scan the QR code
to access the
GINA 2024 report



Symbicort®
budesonide/formoterol

**EFFICACY
WHEN IT
MATTERS**

GINA: Global Initiative for Asthma. **MART:** Maintenance and reliever therapy. **SABA:** Short-acting beta-agonist.
References: 1. Global Initiative for Asthma. Available at: <https://ginasthma.org/gina-slide-set/>. 2. Kuna P, et al. Int J Clin Pract. 2007;61(5):725-736. 3. Ståhlberg B, et al. Int J Clin Pharmacol Ther 2015;53(6):447-455.

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ACTIVE PROGRAMS



SHINDA TENA

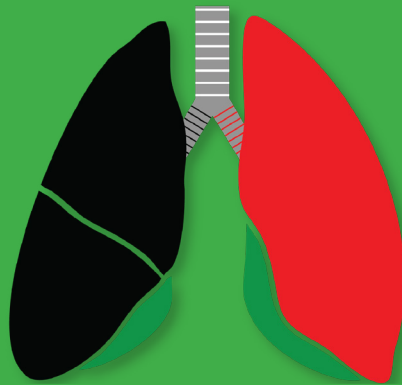


-EBOLA RESPONSE



TB REACH VUMBUA/NPOC





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LUNG HEALTH CONFERENCE**
KISLHC

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It was a pleasure hosting you.

The next conference will be held in August 2028 in Kenya