10 YEARS

MAKERERE UNIVERSITY
LUNG INSTITUTE
of Lung Science & Health

3rd LUNG SCIENCE & HEALTH SYMPOSIUM

THEME A Decade of Advancing Lung Science and Health for all through Research, Training and Clinical Care

ABSTRACT BOOK

THURSDAY
27th
Nov. 2025

Makerere University
Main Hall, Main Building

Science for Healthy Lungs

LAYOUT & DESIGN
Jacob Nansinguza
Editorial Design, Scientific & Medical Illustration

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MAKERERE UNIVERSITY LUNG INSTITUTE
10 YEARS of Lung Science & Health

PROGRAMME

MLI 3rd LUNG SCIENCE & HEALTH SYMPOSIUM

VENUE MAKERERE UNIVERSITY MAIN HALL

DATE THURSDAY 27 NOVEMBER 2025

8:00 am	**Arrival and Registration**	Secretariat
Opening Session:		
8.30 am	Welcome Remarks by the Symposium Chair	Dr. Simon Walusimbi
Session 1: Lung Health and Air Pollution **Chairs: Prof. Lynn Atuyambe and Dr. Rebecca Nantanda**		
8:40 am	State of Air Quality in Africa: The Case of Uganda	Prof. Engineer Bainomugisha
9:00 am	Household Air Pollution	Prof. Daniel Pope
9.20 am	Abstract: Ambient Air Pollution and the Risk of Respiratory Tract Infections in Low and Middle-Income Countries. A Systematic Review and Meta-analysis	Mr. Mudashiru Bbuye
9:30 am	Comments and Discussion	ALL
Session 2: Paediatric Lung Health **Chairs: Assoc. Prof Ezekiel Mupere and Dr Eric Wobudeya**		
9: 40 am	Paediatric Lung Health Today, and Priorities for the Future	Assoc. Prof. Victor Musiime
10: 00 am	Abstract: Barriers and facilitators to implementation of a digital clinical decision support tool for improving diagnosis and management of pediatric respiratory illnesses in Ugandan primary care settings	Dr. Mary Kuteesa

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10: 00 am	Abstract: Barriers and facilitators to implementation of a digital clinical decision support tool for improving diagnosis and management of pediatric respiratory illnesses in Ugandan primary care settings	Dr. Mary Kuteesa
10: 10 am	Abstract: From Misdiagnosis to Recognition: Unmasking the Sickle Cell Disease-Asthma Comorbidity among Ugandan Children. A Cross-Sectional Study	Dr. Daniel Mawanda
10: 20 am	Abstract: Chronic Pulmonary Aspergillosis in Children – a Scoping Global Review	Dr. Richard Kwizera
10: 30 am	Comments and Discussion	ALL
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Session 3: Artificial Intelligence and Lung Health **Chairs: Dr. Kalyesubula Robert /Dr Ivan Kimuli**		

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Session 4: Opening Ceremony and Keynote Address **Chairs: Dr. Rony Bahatungire/Dr. Sabrina Kitaka**		
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12: 20 pm	Keynote Address: A Decade of Lung Health Research in Africa: Progress and Priorities for the Next Decade	Prof. Jeremiah Chakaya
12: 50 pm	Opening Speech by the Director General, Health Services, Ministry of Health	Dr. Charles Olaro
1: 10 pm – 2:00 pm	Lunch	Secretariat
Session 5: Chronic Respiratory Diseases **Chairs: Dr. Frank Mugabe and Prof. Rodney Folz**		
2:00 pm	Overcoming diagnostic challenges for COPD in low- and middle-income countries	Dr. Patricia Alupo
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3: 40 pm	Abstract: Respiratory Syncytial Virus in Older Ugandan Adults: Insights From 15 Years of Sentinel Surveillance	Dr. Haruna Muwonge

3: 50 pm	Abstract: A Mixed-Methods Evaluation of the Acceptability, Implementation, and Effectiveness of a Gender-Specific Tuberculosis Intervention in Uganda	Dr. Jasper Nidoi
4: 00 pm	Abstract: Tuberculosis among nomadic pastoralist populations in the Karamoja region is predominantly caused by Mycobacterium tuberculosis, rather than zoonotic species of Mycobacterium	William Kasozi
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Session 7: Drug Discovery and Development: The Clinical Trials of Natural Therapeutics (CONAT) Program **Chairs: Dr Moses Ocan and Ms Brenda Nakazibwe**		
4: 50 pm	In-vitro Studies of Natural Therapeutics of Uganda Program	Dr. Jackline Kyosimire
5: 00 pm	The role of the Government Analytical Laboratory in the CONAT program	Dr. Kepher Kateu Kuchana
5: 10 pm	Role of the Centralized Laboratory Animal Research Facility (CLARF) in the CONAT program	Dr. Monica Namayanja
5: 20 pm	Results from the CONAT-ARI trial "Safety, Pharmacokinetics and Preliminary Efficacy of herbal products for the treatment of acute respiratory viral infections in Uganda: Phase 2A Open-Label Clinical Trial"	Dr. Winters Muttamba
5: 30 pm	Comments and Discussion	ALL
5: 40 pm	Closing Remarks by Chair, Board of Directors, MLI	Prof. Charles Ibingira

ORAL PRESENTATIONS

A1: FROM MISDIAGNOSIS TO RECOGNITION; UNMASKING THE SCD–ASTHMA COMORBIDITY AMONG UGANDAN CHILDREN. A CROSS–SECTIONAL STUDY

Daniel Mawanda (danmafene@gmail.com)
Phillip Kasirye Gitta (kasiryep@gmail.com)
Rebecca Nantanda (rnantanda@gmail.com)

BACKGROUND: Children with sickle cell disease (SCD) often present to the clinic room with asthma-like symptoms of wheezing, coughing, chest tightness, and shortness of breath, which also manifest in other SCD-associated morbidities. Asthma is often underdiagnosed in SCD, with symptomatic children often misdiagnosed as acute chest syndrome or pneumonia.

OBJECTIVES: This study aimed to determine the prevalence of asthma in children with SCD, and the associated factors.

METHODS: This was a cross-sectional study conducted at Mulago hospital sickle cell clinic. A total of 305 children with SCD (6-17 years) were evaluated for presence of any two of the characteristic asthma symptoms with variable frequency and intensity. Eligible participants (n=73) underwent spirometry for the diagnosis of asthma, considered as a post-bronchodilator increase in the forced expiratory volume in one second (FEV1) of ≥ 10% of predicted. Logistic regression was used to establish the associated factors..

RESULTS: The prevalence of asthma among children with SCD was 4.3% (13/305) with a female preponderance (7/13). The mean predicted FEV1 was lower in asthmatics 1.61 (sd 0.6) litres than non-asthmatics 1.73 (sd 0.5) litres. The average FEV1 % predicted was low in asthmatics 76.64% (sd 13.8) and normal in non-asthmatics 83.24% (sd 13.5). The average pre-bronchodilator FEV1 z-score for asthmatic children was -2.198 (sd 1.1) and -1.653 (sd 1.0) for non-asthmatics. The median post-bronchodilator change in FEV1 % predicted was 12.9 (IQR 12.6-14.4) in asthmatics and 2.8 (IQR 0-5.1) in non-asthmatics. Asthma was found to be significantly associated with hospitalization in the past year [aOR 5.78; 95% CI 1.71 – 19.2, p = 0.005].

CONCLUSION: This study highlights the occurrence of asthma among children with sickle cell disease in our clinical setting and the need for meticulous assessments to avoid any missed opportunities for asthma diagnosis.

Key words: Sickle cell disease, Asthma, FEV1, Comorbidity

Table Spirometry characteristics of participants

MEASURE (n = 73)	FREQUENCY [%] All [n=73]	Asthma [n=13]	No asthma [n=60]
Age	Mean 10.5 [3.3]	10.4 [3.8]	10.5 [3.3]
Gender			
Female	38 [52.1]	7 [53.9]	31 [51.7]
Male	35 [48.0]	6 [46.2]	29 [48.3]
BMI for age			
Normal	53 [72.6]	8 [61.5]	45 [75.0]
Wasting	20 [27.4]	5 [38.5]	15 [25.0]

FEV_1	MEAN [SD] Pred. [L]	Pre-BD [L]	% Pred.	Z-Score	MEDIAN [IQR] ΔFEV1 % Pred.
All [n=73]	1.70 [0.5]	1.4 [0.4]	82.06 [13.7]	-1.750 [1.0]	3.9 [1.2-7.6]
Asthma [n=13]	1.61 [0.6]	1.2 [0.5]	76.64 [13.8]	-2.198 [1.1]	12.9 [12.6-14.4]
No asthma [n=60]	1.73 [0.5]	1.4 [0.4]	83.24 [13.5]	-1.653 [1.0]	2.8 [0-5.1]
Normal			≥ 80%	≥ -1.645	< 10%

Z scores were generated from the GLI online calculator

A2: CHRONIC PULMONARY ASPERGILLOSIS IN CHILDREN – A SCOPING GLOBAL REVIEW

Richard Kwizera[1*], Filip Pavlovic[2], and David W. Denning[3]

*Presenting author contact: kwizerarichard@ymail.com

Affiliations;

1) Infectious Diseases Institute, College of Health Sciences, Makerere University, P.O. Box 22418, Kampala, Uganda.
2) School of Medicine, The University of Manchester, Manchester, UK.
3) Manchester Fungal Infection Group, Faculty of Biology, Medicine and Health, The University of Manchester, Manchester Academic Health Science Centre, Manchester, UK.

BACKGROUND: Chronic pulmonary aspergillosis (CPA) affects those with underlying lung conditions or mild immunocompromise. CPA carries a poor prognosis in adults. Its pathogenesis remains obscure.

AIMS AND OBJECTIVES: We aimed to summarize all cases of CPA in children globally.

METHODS: From 6,503 screened reports, we reviewed the full text of 604, of which 44 fit the inclusion criteria and an additional 17 other cases with little detail. Chronic granulomatous disease and cystic fibrosis cases were excluded.

RESULTS: We found 47 well-documented individual cases of CPA in children published from 1963 to 2022. Twenty-two cases were simple aspergillomas, and 11 were chronic cavitary pulmonary aspergillosis. Ages ranged from under 1 year to 17 years old, and 28 (59.8%) were male. Eighteen (38.3%) cases had no reported underlying disease. Underlying diseases included pulmonary tuberculosis (14.9%), Job's Syndrome (10.6%), congenital pulmonary airway malformation (8.5%), allergic bronchopulmonary aspergillosis or asthma (6.4%), pulmonary hydatid cyst

(4.3%), bacterial pneumonia with cavitation (4.3%), diabetes mellitus (4.3%) and single cases of pulmonary sequestration or bronchogenic cyst. All cases had either microbiological or immunological evidence of Aspergillus spp. apart from two confirmed by histopathology only. Surgical resection only was done in 18 (39.1%) patients, 15 (32.6%) were treated with surgery and antifungal therapy and 13 (28.3%) were only treated with antifungals; one patient died before intervention. Forty-three cases (91.5%) were alive on hospital discharge, but follow-up was limited, while two died.

CONCLUSION: CPA is apparently rare in children but does occur, often with no antecedent condition. Prognosis is good with early diagnosis.

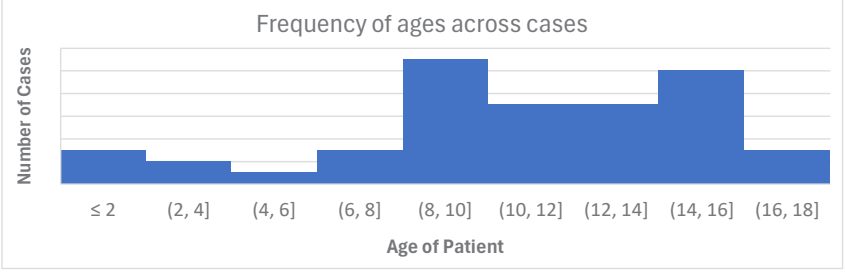


Figure 1: Histogram detailing the age distribution of CPA cases

A3: Barriers and facilitators to implementation of digital clinical decision support tool for improving diagnosis and management of pediatric respiratory illnesses in Ugandan primary care settings.

Mary Kuteesa[1], Rebecca Nantanda[1], Irene Najjingo[1], James W Stout[2], Joyce Nakatumba–Nabende[3], Chodrine Mutebi[3], Jane Edelson[4], Stephanie Farquhar[5], Bryan J Weiner, Grace John–Stewart, Margaret Rosenfeld [2,6,] Laura E Ellington[2,6]

Affiliations

1. Makerere University Lung Institute, Makerere University College of Health Sciences, Kampala, Uganda
2. Department of Pediatrics, University of Washington, Seattle WA
3. Department of Computer Science, Makerere University School of Computing and Information Technology, Kampala, Uganda
4. Insitute of Translational Health Sciences, University of Washington, Seattle, WA
5. Department of Health Systems and Population Health, University of Washington, Seattle, WA3
6. Seattle Children's Research Institute, Seattle,

BACKGROUND: Acute Lower Respiratory Illnesses (ALRIs) are a major cause of childhood morbidity and mortality yet low-resource settings face accurate diagnosis challenge. We developed the Acute Lower Respiratory Treatment and Evaluation (ALRITE) tool as a point-of-care digital decision-support tool for

frontline health-workers. The study objective was to assess the feasibility and acceptability of implementing ALRITE in Health centers (HCs) in Uganda.

METHODS: Mixed methods design with healthcare workers (HCWs) at 8HCs in Jinja District, Uganda. In the 1st phase, we piloted ALRITE use in clinical consultation for children with acute respiratory symptoms at 2HCs and conducted focus group discussions (FGDs) with HCWs and caregivers of children on whom ALRITE was used. In phase 2, we conducted FGDs with HCWs from 8 HCs, to identify barriers to ALRITE use. The barriers were ranked by importance and frequency. A second FGD identified the solutions with the same HCWs, and these were ranked by importance and feasibility.

RESULTS: In the 1st phase, all eligible clinicians (N=7) enrolled in the study.5 were actively using ALRITE (adoption 63%) a month later; and by 6weeks had dropped to 2(28.6%). ALRITE was initiated for 159/1139 pediatric encounters. HCWs and caregivers indicated that ALRITE improved clinical outcomes of children with ALRIs and was acceptable. Barriers identified: Equipment shortages, insecure technology infrastructure, and limited staffing. In phase 2, sixty-six HCWs participated from 8 sites, including nurses (36%), clinical officers (26%), medical officers (12%) and midwives/technicians (26%). The top 5 barriers were limited resources for treating ALRI, limited ALRITE scope, HCW training, ALRITE integration into workflow, and caregiver acceptability concerns. Solutions included engaging with healthcare planners, including other childhood illness in ALRITE, robust training and caregiver communication.

CONCLUSION: ALRITE use improves clinical outcomes of children with ALRIs. We identified barriers to ALRITE use and solutions. Next-steps include ALRITE optimization and feasibility and clinical effectiveness assessment of the refined ALRITE tool.

A4: DIGITAL HEALTH COACHING FOR PULMONARY REHABILITATION: ENHANCING ENGAGEMENT AND OUTCOMES

Dr. Yacoub Hachine

INTRODUCTION: Pulmonary rehabilitation (PR) is a cornerstone in managing chronic respiratory diseases such as COPD and post-COVID lung dysfunction. Despite its proven benefits in improving exercise tolerance, reducing hospitalizations, and enhancing quality of life, PR uptake and adherence remain low due to logistical, social, and motivational barriers. Digital health coaching offers a scalable solution to bridge these gaps by delivering personalized support through mobile platforms and wearable integration.

METHODS: We implemented a pilot digital health coaching program targeting patients enrolled in PR at two urban clinics. Participants received remote coaching via a mobile application, weekly video sessions with certified health coaches, and integration of wearable data (oxygen saturation, heart rate, activity levels). Coaching focused on goal-setting, motivational interviewing, and self-management education. Adherence was tracked through app usage, exercise logging, and biometric uploads. Clinical outcomes included 6-minute walk test (6MWT), COPD Assessment Test (CAT) scores, and patient-reported quality of life measures.

RESULTS: Among 80 patients enrolled (mean age 61, 55% male), 70% completed the 12-week program. Adherence to prescribed exercise increased by 40% compared to standard PR participants. Significant improvements were observed in functional capacity (mean 6MWT increase: +65 meters, $p<0.01$) and symptom burden (mean CAT score reduction: –5 points, $p<0.05$). Patients reported higher motivation, greater flexibility in accessing support, and reduced barriers to participation. Health coaches noted that real-time wearable data enhanced individualized feedback and accountability.

CONCLUSIONS: Digital health coaching enhances patient engagement, adherence, and clinical outcomes in pulmonary rehabilitation. By integrating behavioral science, remote coaching, and wearable technology, this model addresses persistent barriers to PR participation. Scaling digital coaching in low- and middle-income contexts may extend access to pulmonary rehabilitation, reduce healthcare utilization, and improve long-term respiratory outcomes.

A5: RESPIRATORY SYNCYTIAL VIRUS IN OLDER UGANDAN ADULTS: INSIGHTS FROM 15 YEARS OF SENTINEL SURVEILLANCE

Haruna Muwonge[1,4], Barnabas Bakamutumaho[2], Joyce Namulondo[2], Levi Mugenyi[3], Roselyne Akugizibwe[4], David Odongo[2], Julius Lutwaama[2], John Kayiwa[2], Bruce Kirenga[1,4]

Affiliations

1. Makerere University College of Health Sciences, Kampala, Uganda
2. Uganda Virus Research Institute, Entebbe, Uganda
3. Medical Research Council/Uganda Virus Research Institute, Entebbe, Uganda
4. Makerere University Lung Institute, Kampala, Uganda

BACKGROUND: Respiratory syncytial virus (RSV) is increasingly recognized as a cause of acute respiratory illness among older adults, yet data from sub-Saharan Africa are limited. Understanding RSV prevalence, coinfections, and comorbidity associations in this population is critical for prevention and clinical care.

AIMS: To determine the prevalence, risk factors, coinfection patterns, and temporal trends of RSV among Ugandan adults aged ≥65 years using 15 years of national sentinel surveillance data.

METHODS: We retrospectively analyzed influenza-like illness (ILI) and severe acute respiratory infection (SARI) sentinel surveillance records from December 2010 to January 2025. Adults ≥65 years tested by RT-PCR for RSV, influenza A/B, and SARS-CoV-2 were included. Descriptive analyses summarized prevalence and trends, while Poisson regression with robust variance estimated adjusted prevalence ratios (aPRs) for factors associated with RSV positivity and hospitalization.

RESULTS: Among 545 illness episodes (mean age 73.2 years; 54.1% female), RSV period prevalence was 4.8% (95% CI: 3.3–6.9), comparable to influenza A (4.2%) and lower than SARS-CoV-2 (6.4%). Most RSV cases were mono-infections (92.3%), with rare influenza coinfections (0.4%) and no RSV–SARS-CoV-2 coinfections. Asthma (aPR 6.08, 95% CI: 1.18–31.26, p=0.031) and pneumonia (aPR 2.83, 95% CI: 1.06–7.56, p=0.038) independently predicted RSV infection. Severe RSV illness (hospitalization) was strongly associated with asthma (aPR 21.69, p<0.001), pneumonia (aPR 3.80, p=0.005), and heart disease (aPR 3.50, p=0.045). RSV exhibited seasonal peaks during Uganda's long rainy season, with sharp suppression in 2020–2021 (COVID-19 restrictions) and resurgence from 2022 onwards.

CONCLUSION: RSV is a consistent but under-recognized cause of respiratory morbidity among older Ugandan adults, with prevalence comparable to influenza A and clinically important links to asthma, pneumonia, and heart disease. Findings underscore the need for RSV integration into national respiratory surveillance and timely introduction of preventive interventions, including vaccination, to protect this growing high-risk population.

A6: A Mixed–Methods Evaluation of the Acceptability, mplementation and Effectiveness of a Gender–Specific Tuberculosis Intervention in Uganda

Jasper Nidoi,[1,2] Tom Wingfield,[2–5] Justin Pulford,[3] Rachael Thomson,[3] Beate Ringwald[2], Winters Muttamba[1] Marc Henrion,[6] Ranga Solomon,[1] Edrine Akera,[1] Bruce Kirenga,[1,7]

Affiliations

1. Research and Innovation, Makerere University Lung Institute, Kampala, Uganda
2. Centre for Tuberculosis Research, Clinical Sciences, Liverpool School of Tropical Medicine, Liverpool, United Kingdom of Great Britain and Northern Ireland
3. International Public Health, Liverpool School of Tropical Medicine, Liverpool, United Kingdom of Great Britain and Northern Ireland
4. WHO Collaborating Centre in TB and Social Medicine, Department of Global Public Health, Karolinska Institutet, Stockholm, Sweden
5. Tropical and Infectious Diseases Unit, Liverpool University Hospitals NHS Foundation Trust, Liverpool, United Kingdom of Great Britain and Northern Ireland
6. Statistical Support Unit, Malawi Liverpool Wellcome Research Programme, Blantyre, Malawi
7. Department of Internal Medicine, Makerere University, School of Medicine, Kampala, Uganda

Email: Jasper.Nidoi@lstmed.ac.uk

Men are a key population to reach to end tuberculosis (TB). Our study evaluates the acceptability, implementation and effectiveness of a gender-specific intervention aimed at identifying men with TB through extended clinic hours, male champions, and integrated TB, HIV, diabetes and hypertension screening at public health facilities in Uganda.

BACKGROUND: Existing TB screening guidelines don't address men's gendered socio-behavioural barriers to TB care. We implemented a gender-specific intervention package, called IGNITE, in public health facilities in Uganda. IGNITE screened for TB using symptom-based checklist stamps, distributed TB educational materials, and introduced male-friendly TB clinics with evening opening hours, health education by male champions in 'men's corners,' and integrated TB, HIV, diabetes, and hypertension screening.

METHODS: We conducted a mixed methods evaluation of the acceptability, implementation and effectiveness of the intervention package. We did process evaluation through in-depth interviews with implementation stakeholders and patients, observations and workshops. Interviews also explored acceptability. To assess effectiveness, we compared TB notification data before (January–June 2023) and after (July–December 2023) IGNITE at intervention (Gombe and Mityana hospitals) and control (Luwero and Kiboga hospitals) sites, applying a quasi-Poisson regression model.

RESULTS: The intervention was deemed acceptable, attributed to improved

access to additional screening services and shorter waiting times. The stamps were perceived to simplify TB screening and improve documentation, while educational materials increased inquiries about TB screening services. Intervention implementation varied, with Gombe achieving higher coverage with the stamp and integrated screening. Mityana had higher coverage with other components. Numbers of people with presumed TB increased in Gombe but declined in Mityana. Gombe's TB notifications rose by 46.3% driven entirely by male notifications (Female 0%, Male 88.4%), while Mityana reported a 36.4% increase across both genders (Female 26.3%, Male 45.1%). Notifications declined in control facilities. The intervention significantly increased TB case notification rates (RR: 1.51, 95% CI: 1.03-2.22), males had a higher notification rate than females (RR: 1.5, 95% CI: 1.23-1.83). Higher proportions of females with TB initiated treatment pre- and post-intervention (97.4%-100%) than men (91.4%-97.7%).

CONCLUSIONS: The gender-specific intervention enhanced TB screening and increased notifications among men without reducing those among women.

SUPPLEMENTARY MATERIAL

Quote:

I felt good because, some of them, I had never tested before like diabetes and pressure... For HIV I had last tested a year ago. But I was able to get those services at once when I was getting tested for TB. Interviewee 15, patient, male

Table: Quasi-Poisson regression analysis of the association between the intervention, sex and facility on TB case notification rates

Predictor	TB cases notified		TB case notification rate ratio (95% CI)	p-value
	No intervention	Intervention		
(Intercept)			*245.72 (169.65- 355.89)	
Intervention	781	300	**1.51 (1.03- 2.22)**	**0.038**
Female	304	116	Ref	
Male	477	184	**1.50 (1.23- 1.83)**	**< 0.001**
Gombe	82	120	Ref	
Mityana	132	180	0.79 (0.61- 1.01)	0.062
Luwero	279	-	1.10 (0.82- 1.49)	0.519
Kiboga	288	-	1.11 (0.82- 1.5)	0.492
Month	-	-	0.98 (0.95- 1.01)	0.106
ϕIntervention: sex Male	-	-	1.02 (0.69- 1.49)	0.925

**Intercept is the baseline TB case notification rate*

ϕ Interaction term for intervention and male sex to explore how the intervention's effect varied by sex

POSTER PRESENTATIONS, MORNING SESSION

B1: TUBERCULOSIS TREATMENT OUTCOMES AND ASSOCIATED FACTORS AMONG THE PATIENTS RECEIVING TREATMENT IN NAKASEKE DISTRICT, UGANDA

Simons Ezajobo[1*], Samuel Mugambe[2]

Affiliations

1. Joint Clinical Research Centre
2 .Uganda Martyr's University.

INTRODUCTION: Tuberculosis (TB) is a major public health concern and a leading cause of death. Poor TB treatment outcomes in Nakaseke district is a threat towards TB epidemic control in Uganda. This study investigates TB treatment outcomes and factors influencing them among patients in the district.

METHODS: This was a cross-sectional analytical study and recruited 413 participants treated for TB in Nakaseke District. The district and study sites were purposively sampled. Secondary data was collected using data abstraction tool while primary data was collected through interviews using a structured questionnaire. Data was analyzed using STATA version 15.0.

RESULTS: About 93% of the 413 recruited TB patients had successful treatment outcome. Most respondents (76%) had Pulmonary Bacteriologically Confirmed (PBC) TB, majority (52.1%) were HIV positive with 98.6% on ART. Age over 45 years [AOR=2.5, 95% CI: 1.7-3.8, P=0.001], Male gender [AOR=2.1, 95% CI: 1.3-2.9, P=0.026], experience of adverse effects [AOR=5.5, 95% CI: 3.4-7.8, P=0.0001], lack of treatment supporter [COR=2.3, 95% CI: 1.2-4.3, P=0.003], distance above 5km to the facility [AOR=3.5, 95% CI: 2.1-5.5, P=0.018] and high costs to access treatment [AOR=3.1, 95% CI: 1.5-4.7, P=0.016] were significantly associated with unsuccessful TB treatment outcomes (P<0.005).

CONCLUSION: TB treatment outcome was good at 93% well above the national target of 90%. The individual factors like age above 45years, male gender and adverse drug reactions; societal factors like support community health workers and the health workers and health services factors like distance from the facility and cost of accessing services were significantly associated with poor TB treatment outcomes.

RECOMMENDATIONS: The district leadership, health workers and TB implementing partners need to strengthen community TB programs and adopt models that tailor care to individual client needs This is key in mitigating the negative effects of TB and ultimately reduce the District and National TB burden.

B2: Optimizing Integrated TB/HIV Service Delivery Using eCBSS for Geospatial Hotspot Mapping in Northern Uganda

Authors: Alex Batwaula[1]; Geoffrey Kabaale[1]; John Okello[1]; Paschal Ssebowa[1]; Simons Ezajobo[1]; Herbert Kisamba[1]; Nicholas Kirirabwa Ssebuliba[1]

Affiliation(s)

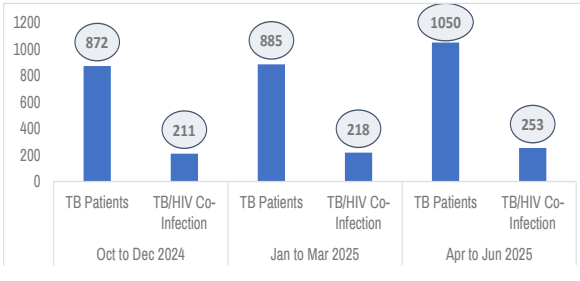
1. JCRC- Local Partner Health Services Kigezi & Lango

BACKGROUND: Uganda remains a high tuberculosis (TB) burden country, with an estimated TB incidence of 198 per 100,000 population. The TB-HIV co-infection rate, decreased from 40% in 2020, to 35.8 % in 2024. In the Lango sub-region TB incidence remain high with approximately, 330 missed cases in 2024, and a co-infection rate of 29.2%.

Many cases remain undetected in the community, underscoring the limitations of traditional, non-targeted service delivery. To address this, Uganda rolled out the electronic Case-Based Surveillance System (eCBSS) in 2020. Leveraging its geospatial capabilities, the Joint Clinical Research Centre (JCRC)-led Local Partner Health Services Activity Kigezi and Lango applied eCBSS data to guide integrated TB/HIV interventions.

METHODS: District biostatisticians, health information assistants, and data clerks collaborated to update eCBSS records and clear reporting backlogs, ensuring completeness and accuracy. Patient-level, geolocated data were analyzed to identify TB/HIV hotspots. These hotspots were then prioritized for integrated outreach services, including joint TB and HIV screening, diagnosis, and linkage to treatment, to maximize program impact amidst resource constraints.

RESULTS: Between October 2024 and June 2025, geospatial analysis identified 25 TB/HIV hotspots across eight districts in the Lango sub-region. Targeted integrated outreach services were deployed in these areas and results are reflected in the chart below.



Compared to baseline data, TB case detection increased by 17%, while the TB/HIV co-infection rate remained stable at 24% throughout the intervention period

CONCLUSIONS: Use of eCBSS for geospatial hotspot mapping enabled targeted and efficient delivery of integrated TB/HIV services in Northern Uganda. This data-driven approach improved case detection, reduced missed cases, and demonstrates the potential of digital surveillance systems to strengthen community health programming in resource-limited settings.

B3: Sustaining the Fight: How Policy–Driven Health Integration Secured Tuberculosis Detection in Northern Uganda

Dr. Jimmy Ondongo

BACKGROUND: The withdrawal of United States government funding in January 2025 disrupted key health programs in Uganda, especially tuberculosis (TB) and HIV services. In response, and in line with the National Development Plan IV (2025/26-2029/30) the government of Uganda prioritized integrated health service delivery as a cost-effective strategy to sustain access and quality of care. To operationalize this, the Ministry of Health issued a nationwide directive mandating service integration to mitigate the impact of reduced external support and preserve essential interventions.

METHODS: To strengthen TB case detection within integrated service delivery in Amolatar District Lango region, we conducted Continuous Professional Development sessions for frontline and community health workers, optimized patient flow for one-stop services, introduced TB stamps and weekly reporting at outpatient department (OPD) for improved documentation, implemented routine data reviews to guide decision-making, and expanded screening across service entry points alongside community outreach supported by Primary Health Care (PHC) funds.

RESULTS: TB screening rates improved steadily over three consecutive quarters from 78% (Oct–Dec 2024), to 98% (Apr–Jun 2025). The number of diagnosed TB cases consistently surpassed the quarterly target of 41, with 41 TB cases identified in Oct–Dec 2024, 59 in Jan–Mar 2025, and 53 in Apr–Jun 2025.

CONCLUSION: These findings suggest that an integrated, policy-driven approach enhanced both TB screening coverage and case detection in Amolatar District. This model ensured service sustainability during funding cuts and highlights the critical next step: leveraging community and primary care resources to further strengthen case-finding and care continuity.

B4: TB DETECTION: ANALYSIS OF SELECTED MACHINE LANGUAGE ALGORITHMS

Ivan Kakungulu and Ariko Emmanuel

Affiliations

Department of Networks.
School of Computing and Information Technology, Makerere University
*Corresponding author: kakunguluivan@gmail.com

Tuberculosis (TB) remains a significant global health challenge, with timely and accurate diagnosis often hindered by resource-intensive and inaccessible methods in low-resource settings. This study investigated a non-invasive and cost-effective solution: the use of machine learning to classify cough sounds as indicative of TB or normal.

The Decision Tree and Random Forest classifiers were evaluated on a dataset of 174 cough sounds, comprising 87 from TB patients and 87 from healthy individuals. Four key acoustic features were used for analysis: MFCCs Mean, Spectrogram Mean, Zero-Crossing Rate Mean, and Fundamental Frequency Median. The dataset was preprocessed and split into 80% training and 20% test sets for model evaluation.

The Random Forest classifier significantly outperformed the Decision Tree, achieving a classification accuracy of 94% compared to 88%. The Random Forest model also demonstrated superior precision, recall, and F1-scores, highlighting its robustness and reliability. We found that the acoustic features exhibited distinct patterns, with TB coughs showing higher MFCCs and Spectrogram Mean values, while normal coughs had a higher Zero-Crossing Rate and lower Fundamental Frequency Median.

This study validates the feasibility of using machine learning for TB diagnosis through cough sound analysis. The high accuracy of the Random Forest model shows significant promise as a practical and accessible diagnostic tool, particularly for improving TB screening and management in resource-limited environments.

B5: MEN'S FACILITATORS AND BARRIERS TO TUBERCULOSIS CARE IN LOW– AND MIDDLE–INCOME COUNTRIES: A QUALITATIVE EVIDENCE SYNTHESIS

Eldred Mabughe Chongwain[1] **and Beate Ringwald**[1,2]

Affiliations

1 Liverpool School of Tropical Medicine, Centre for Tuberculosis Research, Liverpool, UK

2 Makerere University, College of Health Sciences, Lung Institute, Research and Innovation, Kampala, Uganda

ABSTRACT:

BACKGROUND: Despite the availability of effective treatment, Tuberculosis (TB) remains a major infectious cause of mortality globally, especially in low- and middle-income countries (LMICs) where men are often missed by TB interventions, perpetuating transmission and disease burden. This study explored the factors that enable or hinder men's access to TB diagnosis, linkage to care, and treatment adherence in LMICs.

METHODS: For this Qualitative Evidence Synthesis, we systematically searched CINAHL, Global Health, Medline and Google Scholar data bases. Of 345 results, 34 met inclusion criteria and 12 gender-sensitive studies from 10 countries were purposively selected for analysis. We applied the CASP-Qual tool to ascertain their quality and extracted data to Microsoft Excel and NVivo (V14). Following framework synthesis approach, we coded Results of included studies line by line for, mapped emerging issues based on TB care cascade and social ecological model, and drew mind maps to clarify themes and sub-themes.

RESULTS: Across LMICs, TB knowledge help men to seek care early, while masculinities of strength, preference for private healthcare and traditional healers, male unfriendly TB services and healthcare workers' poor attitudes delay men's diagnosis. Once tested, beliefs on causes and cure of TB, and the multi-step nature of TB diagnosis hinder men from initiating treatment. During treatment, men struggle with treatment adherence due to stigma at home, work and the community, poverty, limited social protection and visibility at clinics. TB knowledge, fatherhood role, family and peer support, incentives, and needs-based, non-discriminatory services motivate men to complete TB treatment.

CONCLUSION: Our synthesis highlights geographic evidence gaps in many high TB burden countries and illustrates the systematic barriers men in LMICs face across the TB care cascade offering limited incentives. To end TB, there is need for targeted research, addressing geographic and systemic gaps, while implementing inclusive community driven policies globally.

B6: VALIDATION OF THE COPD POPULATION SCREENER (COPD–PS) AGAINST SPIROMETRY IN UGANDAN OUTPATIENTS: A DIAGNOSTIC ACCURACY STUDY

Dr. Banturaki Amon

BACKGROUND: Early detection of Chronic Obstructive Pulmonary Disease (COPD) is critical in resource-limited settings where access to spirometry is constrained. The COPD Population Screener (COPD-PS) offers a simple, questionnaire-based alternative. This study aimed to validate the diagnostic accuracy of COPD-PS against spirometry in a Ugandan outpatient population.

METHODS: A cross-sectional analysis was conducted among 180 adults with complete spirometry and COPD-PS data. COPD was defined by post-bronchodilator FEV_1/FVC < 0.70. Diagnostic metrics; including sensitivity, specificity, predictive values, and area under the ROC curve (AUC); were calculated with 95% confidence intervals.

RESULTS: Of the 180 participants, 45 (25.0%) were confirmed to have COPD. At a COPD-PS threshold of ≥5, the tool demonstrated a sensitivity of 86.7% (95% CI: 73.8 - 94.5), specificity of 73.3% (95% CI: 65.3 - 80.3), positive predictive value of 52.0% (95% CI: 41.0 - 62.8), and negative predictive value of 94.3% (95% CI: 88.3 - 97.4). The overall accuracy was 76.7% (95% CI: 70.0 - 82.3), with an AUC of 0.84 (95% CI: 0.78 -0.89).

CONCLUSION: The COPD-PS tool demonstrates strong diagnostic performance, particularly in ruling out disease, and is well-suited for screening in low-resource settings. Its integration into outpatient workflows may enhance early detection and optimize spirometry utilization.

B7: ENHANCING DETECTION OF TB TREATMENT RESISTANCE THROUGH INTENSIFYING SPUTUM SMEAR MONITORING & DRUG SUSCEPTIBILITY TESTING: INSIGHTS FROM MUKONO DISTRICT–UGANDA.

[1,2] David Semugabi; [1,2] Akello Annet, [3] Francis Ocen, [4]David Namuwerezi, [1,2]Brian Wamala, [1,2]Christopher Mukama, [1,2]Ignatius Senteza, [1,2]Mary G. Nabukenya Mudiope, [1,2]Stella Zawedde–Muyanja

Affiliations:

1. USAID/Local Partner Health Services- TB Activity;
2. Infectious Diseases Institute (IDI), College of Health Sciences Makerere University, Uganda,
3. Africa society for laboratory medicine,
4. Mukono District Local Government.

BACKGROUND: In Uganda, the proportion of bacteriologically confirmed pulmonary TB patients reported as cured each year (cure rate) remains sub-optimal at 80%, below the WHO recommended target (≥90%), Additionally, smear follow-up microscopy remains underutilized for monitoring sputum conversion and cure rates among patients. We share findings following improvement of sputum smear monitoring from 62% to 83% in Mukono district.

INTERVENTION/METHODOLOGY: Between December 2022 and January 2024, we strengthened sputum smear monitoring for patients on anti-Tuberculosis treatment at 8 health facilities in the district. Samples from 318 patients out of the 384 (83%) due for sputum smear monitoring at 5 months of treatment were examined. Six patients were found to have positive smear results. These patients were identified and asked to provide additional samples for GeneXpert and phenotypic drug susceptibility testing (culture & sensitivity).

RESULTS: From the six smear positive TB patients at 5 months of treatment, two multi-drug resistant (MDR)TB cases were identified. Of the two MDR cases one had been miss classified as drug susceptible by MTB Xpert assay. The remaining four patients were positive for TB using Microscopy, MTB geneXpert and Culture with no resistance to any anti-TB medicines highlighting poor adherence to treatment.

Table1: Drug susceptibility results for Sputum smear positive patients at 5 months of treatment.

Patient No:	Microscopy	MTB GeneXpert	MTB Rifampicin resitance	Culture	Drug Susceptibility
Patient 1	2+	MTB detected	Not detected	POSITIVE - 3+ Colonies	Susceptible
Patient 2	1+	MTB detected	Not detected	POSITIVE - 2+ Colonies	Susceptible
Patient 3	1+	MTB detected	Not detected	POSITIVE - 2+ Colonies	Susceptible
Patient 4	2+	MTB detected	Not detected	POSITIVE - 3+ Colonies	Susceptible
Patient 5	2+	MTB detected	Not detected	POSITIVE - 3+ Colonies	Isoniazid - Resistant Rifampicin -Resistant
Patient 6	1+	MTB detected	Detected	POSITIVE - 3+ Colonies	Isoniazid - Resistant Rifampicin -Resistant

CONCLUSION: There is need to strengthen sputum smear monitoring nationally to allow better treatment response monitoring. In addition to rapid molecular & phenotypic techniques of drug susceptibility testing, there's need to expand access to whole genome sequencing to enable profiling and mapping of resistant mycobacteria

B8: EXPLORING THE PSYCHOSOCIAL CHALLENGES EXPERIENCED BY ASTHMATIC CHILDREN, ADOLESCENTS AND THEIR CAREGIVERS: A QUALITATIVE STUDY IN UGANDA

Authors: Sarah Namusoko[1]; Andrew Sentoogo Ssemata[2]; Fred Matovu[3]; Phiona Ekyaruhanga[1]; Marie Kuteesa[1]; Rebecca Nantanda[1]

INTRODUCTION: Asthma affects an estimated 41.2% of children under five years with acute respiratory symptoms in Uganda, and 21% of school-aged children (7-14 years). Living with asthma and caring for an asthmatic child poses significant challenges for both child and caregiver, moreso being a chronic illness. This study aims to explore the psychosocial challenges experienced by children and adolescents with asthma, and their caregivers

METHODS: This qualitative descriptive study explored experiences of asthma recognition, care, & management through IDIs. A total of 24 participants were recruited comprising children with asthma(n=16) and their caregiver(n=8). The children ranged from 2 months to 17 years and were categorized into three age groups: 2 – 59 months (n=4), 2 -9 years (n=5) and 10-17 years (n=7). Eligible participants were identified by a nurse from health facility records for documented asthma diagnoses. The nurse contacted caregivers of eligible children and invited them for assessment to screen for asthma symptoms at the study site. A trained clinical officer screened children for asthma symptoms using a standardized tool, and those who screened positive were enrolled and interviewed alongside their caregivers. All interviews were audio-recorded, transcribed, and analyzed using thematic analysis

RESULTS: Three interrelated themes highlighted the psychosocial challenges experienced by children and caregivers in managing asthma. Physical environments at home and school often contained triggers such as dust, smoke, and other irritants, which exacerbated symptoms. The social environment presented challenges including family conflict, peer teasing, bullying, emotional stress, depression, and school absenteeism, which negatively influenced asthma control and overall wellbeing. Finally, the economic environment where financial constraints limited access to healthcare services, medications, and consistent follow-up.

CONCLUSION: Psychosocial interplay of physical, social, and economic environments plays a critical role in shaping asthma severity and control among children. These findings highlight the need for holistic, multisectoral approach to asthma management that goes beyond clinical care to include schools, families, and community support systems.

B9: INCREASING AWARENESS OF THE HARMFUL EFFECTS OF INDOOR CHARCOAL COOKING SMOKE ON LUNG HEALTH IN SLUM COMMUNITIES OF NAMUWONGO B

Arakalgud Shambavi Srikanta, Shah Anuj Prashantbhai, Y. Midhuna Sai Reddy, Samanthula Likhes Reddy, Pascal Maibe Donard, Ssebaggala Hadadi, Sulemanji Hawwa Huzeifa A., Misba Noori

Corresponding Author: Misba Noori – Email: misban1511@gmail.com

Affiliations:

Makerere University, college of health sciences, Kampala, Uganda

BACKGROUND: Household air pollution from incomplete combustion of solid fuels is a major contributor to global morbidity and mortality, causing over 3.2 million premature deaths annually. In Uganda, charcoal remains the dominant cooking fuel, particularly in rural settlements, leading to high exposure to carbon monoxide and particulate matter. Women and children are disproportionately affected due to prolonged indoor exposure, resulting in increased rates of acute respiratory infections and chronic respiratory conditions.

AIMS AND OBJECTIVES: This study aimed to increase awareness among women in Namuwongo B, Makindye Division, Kampala, about the dangers of indoor charcoal smoke, promote safer cooking practices, and evaluate the effectiveness of targeted health education interventions.

METHODS: A community-based cross-sectional study was conducted between October and December 2023. Pre- and post-intervention assessments were carried out using semi-structured questionnaires, focus group discussions, and interviews with local leaders. Two structured health education sessions were delivered with the support of Village Health Teams. Both qualitative and quantitative data were analyzed using KoboCollect and SPSS, with results presented in tables and charts.

RESULTS: At baseline, only 38% of respondents recognized the health risks of indoor charcoal smoke; post-intervention, this rose to 91%. Awareness of specific harmful effects such as cough, breathlessness, and suffocation increased by over 30%. Knowledge of carbon monoxide poisoning rose from 1% to 77%. Awareness of at least three safer cooking practices (e.g., cooking outdoors, opening windows, reducing night-time cooking) improved from <20% to >90%. Positive attitudes toward adopting safer practices increased from 34% to 91%.

CONCLUSION: Health education significantly improved community awareness of the respiratory risks of charcoal smoke and promoted the adoption of safer cooking practices. Sustained community engagement and reinforcement through local health systems are essential to reduce the long-term burden of household air pollution on lung health.

B10: QT INTERVAL PROLONGATION IN PATIENTS RECEIVING BEDAQUILINE–BASED REGIMENS FOR DRUG–RESISTANT TUBERCULOSIS IN SUB–SAHARAN AFRICA: A SYSTEMATIC REVIEW AND META–ANALYSIS

Morrish Obol Okello1*, Ivaan Pitua2, James Nelson Okema1, Doris Ekwem3, Felix Bongomin4, 5 and Ronald Olum6

Affiliations

1. Faculty of Medicine, Gulu University, Gulu, Uganda.
2. College of Health Science, Makerere University, Kampala, Uganda.
3. School of Health Sciences, Cavendish University, Kampala, Uganda.
4. Department of Medical Microbiology and Immunology, Faculty of Medicine, Gulu University, Gulu, Uganda.
5. Department of Internal Medicine, Gulu Regional Referral Hospital, Gulu, Uganda.
6. School of Public Health, Makerere University, Kampala, Uganda.

BACKGROUND: Drug-resistant tuberculosis (DR-TB) is a major public health challenge in Sub-Saharan Africa (SSA), worsened by high HIV prevalence and limited healthcare infrastructure. Bedaquiline, a cornerstone DR-TB treatment, is linked to QT interval prolongation, a risk factor for life-threatening arrhythmias. This systematic review and meta-analysis estimated the incidence of QT prolongation in bedaquiline-treated DR-TB patients in SSA.

METHODS: Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we searched PubMed, Embase, and Cochrane Library, Web of Science (2013–2024). Studies reporting QT intervals in DR-TB patients receiving bedaquiline in SSA were included (QTc >450 ms men/>460 ms women). A random-effects model with Freeman-Tukey transformation estimated pooled incidence. Subgroup and sensitivity analyses explored heterogeneity (I^2) and bias, with funnel plots assessing publication bias. Data were analyzed using Stata 18.0.

RESULTS: From 616 studies, 23 (6,673 patients) were included, mostly from South Africa (n=17). Pooled QT prolongation incidence was 15.0% (95% CI: 12.0–18.0%, I^2=95.8%). RCTs reported higher incidence (35.6%) than observational studies (13.1%; p=0.001). HIV co-infection (26.4% prevalence) and QT-prolonging drugs (52.8%) increased risk.

CONCLUSION: QT prolongation is significant in SSA's bedaquiline-treated DR-TB patients, necessitating enhanced electrocardiogram monitoring and integrated TB-HIV care.

Keywords: *Bedaquiline, QT prolongation, Sub-Saharan Africa, meta-analysis*

POSTER PRESENTATIONS, AFTERNOON SESSION

C1: THE FIRST MONTH'S CRITICAL WINDOW: TB MORTALITY PEAKS EARLY IN KAMPALA (2020–2023)

Louis Ocen

INTRODUCTION: Kampala's TB mortality rate (6–8%) exceeds Uganda's national average (<5%), driven by late diagnosis and delays in treatment initiation. We analyzed early mortality patterns in faith-based hospitals to inform targeted interventions for reducing TB deaths in urban settings.

METHODS: A retrospective cohort study of 3,967 TB patients (2020–2023) from six faith-based hospitals in Kampala was conducted using eCBSS data. Mortality rates (per 100 person-months, pm) were calculated across treatment phases (1st, 2nd, 3rd–5th, 6+ months) using Stata v17.0, with Cox proportional hazards models estimating risk factors (HIV status, TB classification), adjusted for age, sex, and year. Kaplan-Meier survival curves were compared using log-rank tests ($p<0.0001$).

RESULTS: Among 286 TB deaths (7.21%), 167 (58.4%) occurred within the first month, with a mortality rate of 71 per 100 pm (95% CI: 61–83)—over four times higher than in the second month (17 per 100 pm, 95% CI: 13–22) and significantly exceeding later phases ($p<0.001$). Newly diagnosed HIV-positive patients faced an adjusted HR of 3.13 (95% CI: 2.31–4.24, $p<0.0001$), with a first-month mortality rate of 2.89 per 100 pm (95% CI: 2.4–3.5). Extrapulmonary TB (EPTB) cases had an HR of 2.60 (95% CI: 1.80–3.73, $p<0.0001$) and a first-month mortality rate of 3.04 per 100 pm (95% CI: 2.2–4.2).

CONCLUSION: TB mortality in Kampala peaks catastrophically in the first 28 days, with HIV (HR 3.13) and EPTB (HR 2.60) driving risk ($p<0.0001$). To achieve End TB targets, strengthening early case detection, developing the first month care package and ensuring prompt treatment initiation could significantly reduce early mortality in urban high-burden settings.

C2: PREVALENCE AND FACTORS ASSOCIATED WITH ASYMPTOMATIC PULMONARY TUBERCULOSIS. A SECONDARY DATA ANALYSIS OF UGANDA TUBERCULOSIS PREVALENCE SURVEY, 2014–2015.

Aldomoro Burua1,2,3, Bruce Kirenga2, Henry Luzze1, Deus Lukoye1, Sabine Hermans3,4 and Frank Cobelens3

Affiliation

1. Ministry of Health, National Tuberculosis and Leprosy Program (NTLP), PO Box 7272, Kampala, Uganda.
2. Makerere University Lung Institute (MLI), Makerere University College of Health Sciences, PO Box 7062, Kampala, Uganda.
3. Department of Global Health, Amsterdam Institute for Global Health and Development, Amsterdam UMC, location University of Amsterdam, Netherlands
4. Centre for Tropical Medicine and Travel Medicine, Department of Infectious Diseases, Amsterdam University Medical Centers, Amsterdam, The Netherlands

Corresponding author: Aldomoro Burua (email:buruaaldo@gmail.com)

BACKGROUND: Nearly half of people with tuberculosis in high incidence populations have asymptomatic disease. Early diagnosis and treatment of tuberculosis improves patient outcomes and reduces community transmission. We determined the prevalence and factors associated with asymptomatic tuberculosis to inform control efforts.

METHODS: We conducted secondary data analysis of the Uganda tuberculosis prevalence survey (2014-15). The prevalence of asymptomatic TB was computed as proportion of asymptomatic TB out of the total number of participants for three definitions namely; “no cough >=2 weeks”, “no cough of any duration” and “no TB symptoms at all”.

We conducted multivariable logistic regression to identify factors associated with asymptomatic TB for each definition.

RESULTS: Of the 41,003 participants data analyzed, 160 had bacteriologically confirmed TB. Of these, 50%, 31% and 17% had asymptomatic TB based on definition 1 (i.e., no cough >=2 weeks), definition 2 (i.e., no cough of any duration) and definition 3 (i.e., no TB symptoms at all), respectively. The prevalence of asymptomatic TB varied by definition: 195/100,000 for definition 1; 120/100,000 for definition 2; and 65/100,000 for definition 3. Asymptomatic TB was more common in urban settings [aOR = 2.22 (1.09, 4.54), aOR = 2.97 (1.16, 7.63) and aOR = 2.88 (1.16, 7.11)] for the three definitions respectively, and in people aged >= 55 years and current smokers for definition 2.

CONCLUSION AND RECOMMENDATIONS: A substantial proportion of TB patients in the general population in Uganda have asymptomatic disease and is more common in urban residents for all three definitions, and in the age >=55 years and current smokers, for definition 2. We recommend TB screening based on cough of any duration to initiate diagnostic evaluation and scaling up chest X-ray for screening in communities, for early case detection and treatment of asymptomatic TB disease and control.

Table 1: Prevalence of asymptomatic TB by different case definitions

Variable	Number of participants screened (n)	Bacteriologically confirmed TB patients (n)	Overall TB prevalence (per 100,000) [95% CI]	Number asymptomatic TB based on definition 1 (n)	Prevalence of asymptomatic TB based on definition 1 (per 100,000 pop, 95% CI)	Number asymptomatic TB based on definition 2 (n)	Prevalence of asymptomatic TB based on definition 2 (per 100,000 pop, 95% CI)	Number asymptomatic TB based on definition 3 (n)	Prevalence of asymptomatic TB based on definition 3 (per 100,000 pop, 95% CI)
Total (N)	41,003	160	392 (336, 458)	80 (50%)	195 (156, 243)	50 (31%)	120 (91, 158)	27 (17%)	65 (44, 94)
Male	17,405 (42.5)	119 (74.4)	670 (560, 803)	62 (77.5%)	346 (270, 445)	39 (78.0)	214 (156, 293)	22 (81.5)	120 (79, 183)
Female	23,598 (57.5)	41 (25.6)	171 (126, 233)	18 (22.5%)	74 (47, 118)	11 (22.0)	45 (25, 81)	5 (18.5)	20 (8, 49)
15-34 years	25,236 (61.6)	73 (45.6)	294 (234, 371)	34 (42.5)	134 (96, 188)	21 (42.0)	81 (53, 124)	12 (44.4)	45 (26, 80)
35-54 years	11,081 (27.0)	60 (37.5)	544 (422, 701)	32 (40.0)	292 (206, 413)	17 (34.0)	155 (96, 249)	10 (37.0)	91 (49, 170)
≥55 years	4,686 (11.4)	27 (16.9)	575 (394, 838)	14 (17.5)	300 (178, 507)	12 (24.0)	254 (144, 447)	5 (18.5)	107 (44, 257)
Never smoked	35,291 (86.1)	90 (56.2)	259 (210, 319)	48 (60.0)	138 (104, 183)	26 (52.0)	73 (50, 107)	17 (63.0)	48 (30, 77)
Current smoker	3,007 (7.3)	39 (24.4)	1,248 (912, 1705)	23 (28.8)	733 (487, 1102)	17 (34.0)	546 (339, 878)	8 (29.6)	254 (127, 508)
Past smoker	2,705 (6.6)	31 (19.4)	1,143 (803, 1626)	9 (11.2)	324 (168, 624)	7 (14.0)	242 (115, 507)	2 (7.4)	69 (17, 276)
Rural setting	23,742 (57.9)	79 (49.4)	333 (267, 416)	33 (41.3)	138 (98, 194)	17 (34.0)	70 (44, 114)	8 (29.6)	32 (16, 64)
Urban setting	17,261 (42.1)	81 (50.6)	479 (385, 596)	47 (58.7)	278 (208, 370)	33 (66.0)	192 (136, 269)	19 (70.4)	112 (71, 176)

C3: DURATION TO TUBERCULOSIS DIAGNOSIS FOLLOWING COMPLETION OF TUBERCULOSIS PREVENTIVE THERAPY AMONG PEOPLE LIVING WITH HIV ON ART IN EASTERN UGANDA

Dr. Esele Brian Atubu

BACKGROUND: Tuberculosis remains a major cause of illness among PLHIV whose risk of developing active TB is 19 times higher than HIV negative people. TPT reduces TB incidence by 70-90% among PLHIV and is widely implemented in Uganda with TPT coverage of up to 88.8%. Despite this, TB/HIV co-infection rates remain between 40-45%. Evidence suggests TPT's protective effect diminishes over time and most PLHIV receive it only once leaving them vulnerable to new infections. Understanding the duration of protection following TPT completion is essential to guide repeat dose policies for TB prevention.

METHODS: This retrospective case-only cohort study used routinely collected clinical data from Uganda's EMR 3.4.1-alpha, TB registers, and patient files at three TASO COE in Soroti, Mbale and Tororo. All PLHIV on ART who were diagnosed with TB after completing TPT between 2022 and 2024 were included. Data on demographics, HIV/TB treatment timelines, and clinical indicators were extracted and analysed to determine the interval between TPT completion and TB diagnosis, and to identify associated predictors.

RESULTS: Over 670 patients were included. The mean time from TPT completion to TB diagnosis was 2.62 years. TASO Soroti patients had almost 90% lower risk of early TB diagnosis compared to TASO Mbale. Shorter ART duration was strongly associated with higher risk of early TB. The likelihood of early TB being clinically diagnosed was 91% more compared to bacteriologically confirmed TB despite most participants (79.9%) having bacteriologically confirmed TB. Surprisingly, suppressed viral load was more strongly associated with early TB than unsuppressed viral load.

CONCLUSION: The findings show TB still commonly occurs after TPT completion, particularly in PLHIV on ART for less than 10 years, despite viral suppression. Clinically diagnosed TB predominance highlights challenges in TB diagnostic capacity. Continuous TB screening, re-evaluation of TPT strategies for high-risk groups and improved diagnostics are needed.

C4: "ENHANCING TUBERCULOSIS CASE DETECTION AMONG MEN: A PEER–LED, COMMUNITY–BASED CONTINUOUS QUALITY IMPROVEMENT INITIATIVE AT TASO ENTEBBE, WAKISO DISTRICT

Senyonjo Joseph

BACKGROUND: Men experience four times the prevalence of tuberculosis compared to women, yet they remain underrepresented across the TB care cascade, particularly in low-income settings. In Uganda's Wakiso District, men in island and rural communities served by TASO Entebbe face heightened vulnerabilities, including weak referral systems, geographic isolation, and socio-cultural and economic barriers that limit health-seeking behaviours. By February 2025, TB case detection had reached only 44% (8/18) of the 100% monthly target, largely due to insufficient male-focused screening. Missed TB cases among men contribute to ongoing community transmission and poor health outcomes. To address this gap, TASO Entebbe implemented a Continuous Quality Improvement project, aiming to increase TB case identification from 44% in February to 100% by September 2025 with a focus on men.

METHODS: To close this gap, TASO Entebbe implemented a Continuous Quality Improvement project starting February to September 2025, guided by the Plan-Do-Study-Act framework. A Peer-Led Integration Model was adopted, training 25 TB survivors and influential peers to conduct TB who conducted screening, sputum collection, and referrals in male-dominated hotspots such as fishing islands. Female contacts of TB-positive men were systematically traced to ensure comprehensive case finding. Screening schedules were tailored to men's occupational and cultural routines to maximize accessibility. WhatsApp and SMS platforms delivered health education, shared survivor role-model stories. Data collected and analysed using (MOH) tools and CQI journals

RESULTS: Across 50 hotspots, 1,500 men were screened. Monthly TB case detection rose from 44% to an average of 100% during the project. Qualitative findings highlighted strengthened community engagement.

CONCLUSION: A male-focused, peer-led, digitally supported community CQI model improved TB detection and engagement among men, demonstrating a scalable approach to advancing lung health equity in similar contexts

C5: THE EFFECT OF NUTRITIONAL SUPPORT ON BODY COMPOSITION AND ADVERSE OUTCOMES AMONG CHILDREN WITH SEVERE PNEUMONIA

Authors: Damalie Nalwanga[1,2], Elisa Giallongo[3], Victor Musiime[1,4], Sarah Kiguli[1], Peter Olupot Olupot[5], Florence Alaroker[6], Robert Opoka[1,7], Abner Tagoola[8], Mainga Hamaluba9, Christabel Mogaka9, Eva Nabawanuka1, Charles Karamagi[1,10], André Briend[11, 12], Kathryn Maitland[9,13]

Affiliations:

1Department of Paediatrics and Child Health, School of Medicine, College of Health Sciences, Makerere University, P. O. Box 7072, Kampala, Uganda

2. Makerere University Lung Institute, P. O. Box 7749, Kampala, Uganda

3Intensive Care National Audit & Research Centre, London, United Kingdom

4 Joint Clinical Research Centre, P. O. Box 10005, Kampala, Uganda

5. Mbale Clinical Research Institute, Mbale, Uganda

6. Soroti Regional Referral Hospital, Uganda

7. Aga Khan University, Medical College East Africa, Nairobi, Kenya

8. Jinja Regional Referral Hospital, Uganda

9. KEMRI Wellcome Trust Research Programme, Kilifi, P. O. Box 230, Kenya

10. Clinical Epidemiology Unit, Department of Internal Medicine, School of Medicine, College of Health Sciences, Makerere University P. O Box 7072, Kampala, Uganda

11. Tampere Center for Child, Adolescent and Maternal Health Research, Faculty of Medicine and Health Technology, Tampere University and Tampere University Hospital, Tampere, Finland

12. Department of Nutrition, Exercise and Sports, Faculty of Science, University of Copenhagen, Frederiksberg, Denmark

13. Department of Infectious Disease and Institute of Global Health and Innovation, Imperial College London, London, UK

BACKGROUNND: Severe pneumonia increases children's risk of morbidity and mortality. We assessed the effect of supplementation with ready-to-use therapeutic food (RUTF) on body composition and adverse outcomes among children with severe pneumonia.

METHODS: COAST-Nutrition trial (ISRCTN10829073, 06/06/2018) participants aged 6-59 months hospitalized for severe pneumonia with hypoxemia (SpO2<90%) in Uganda and Kenya were randomized to usual diet supplemented with RUTF (500 Kcal/day) for 56 days versus usual diet alone (control). Children with severe malnutrition and known chronic lung or cardiac diseases were excluded. Arm fat area (AFA), arm muscle area (AMA), and clinical status were assessed at enrolment and follow-up days 28 and 90. We used mixed effects linear and logistic regression to compare body composition and a composite of mortality, re-admission, and deterioration in nutritional status (adverse outcomes) in intervention and control arms.

RESULTS: Of the 761 included participants, 385 were randomized to the intervention and 376 to the control arm. The median age of participants was 16

(9, 28) months, and 441 (58%) were male. Median mid-upper arm circumference was 15 (14,16) cm. Baseline characteristics were equally distributed between arms. RUTF significantly increased AFA (p = 0.032 and 0.021, at day 28 and 90, respectively), but did not change AMA (p = 0.323 and 0.398, respectively) or reduce adverse outcomes, aOR 0.92 (95% CI 0.68, 1.24), p 0.572.

CONCLUSIONS: Despite increasing AFA, RUTF did not change AMA or reduce adverse outcomes by day 90. Tailoring nutritional support to meet the metabolic needs of children with severe pneumonia may improve outcomes.

C6: TRANSLATION OF THE LEVE CPAP SYSTEM TO UGANDA FOR LOCAL PRODUCTION, MAINTENANCE AND CLINICAL USE.

Brian Matovu, Dr Robert Ssekitoleko, Kigenyi Douglas, Dr Edith Namulema, Ms Racheal Musasizi, Dr William Davis–Birch, Dr Ian Waters, Prof Peter Culmer, Prof Nik Kapur

BACKGROUND: During the COVID pandemic, a team from University of Leeds developed a low-cost device for respiratory support, the LeVe CPAP system. Collaboration with a team from Mengo Hospital (Uganda) evaluated the system's safety and efficacy, before moving to clinical studies with adult and paediatric populations. This collaboration was instrumental in developing the LeVe CPAP system and understanding where it has best clinical utility. Theoutcomes from these studies, combined with in-extremis use at Mengo, indicate that theLeVe CPAP system can provide life-saving respiratory support in a frugal low-resource form.There is consequently demand for more LeVe CPAP systems and a need to translate thistechnology into a commercial version for wider clinical use.

METHODS: Following principles of responsible global health innovation, we formed a collaborative partnership with biomedical engineering experts at Makerere University (Uganda) to develop a locally produced version of the LeVe CPAP system. This collaboration builds on our existing partnership with Mengo Hospital and ensures the system is developed in accordance with local needs and manufacturing capabilities, considers supply-chain management and obtains the appropriate regulatory approvals from the National Drugs Authority of Uganda, a body mandated to regulate medical devices in the country.

RESULTS: The translation process is built around close collaboration. A development workshop held in Leeds (with the Uganda team attending) will map the current methods of manufacture and opportunities optimisation in Uganda. Stakeholder workshops will be convened in Uganda to map local user needs and requirements (to include healthcare professionals, government and regulatory bodies). Sample units will then be produced in Uganda for testing in support of Ugandan regulatory approval. A final dissemination workshop will then be held at

Makerere University to showcase the locally produced LeVe CPAP system,

embedding semi-structured interviews to gather stakeholder feedback. Within this process, commercial opportunities will be mapped to support local commercial production of the LeVe system.

CONCLUSIONS: This project showcases a process for co-development and translation of frugal medical technology for global health. It demonstrates that local partnerships are essential not only during development, but also to sustain responsible commercial provision of innovations in healthcare.

C7: CHALLENGES, COMPASSION AND CAPACITY: A PHOTOVOICE STUDY WITH TB SURVIVORS IN CENTRAL UGANDA

Beate Ringwald[1,2], Winceslaus Katagira[2], Rebecca Hamala[2], Milly Nattimba[2,3], Fred Ebil[4], Peninnah Areco[4], Jasper Nidoi[2], Zahra Namuli[5], Winters Muttamba[2], Bruce Kirenga[2,6]

Affiliation.

1. Liverpool School of Tropical Medicine, Centre for Tuberculosis Research, Liverpool, UK
2. Makerere University, College of Health Sciences, Lung Institute, Research and Innovation, Kampala, Uganda
3. .School of Public Health, Makerere University, Research, Kampala, Uganda
4. Fellowship of TB survivors, Kampala, Uganda
5. Makerere University, College of Health Sciences, Lung Institute, Publicity and Communication, Kampala, Uganda
6. Makerere University, College of Health Sciences, Internal Medicine, Kampala, Uganda

Presenting author: Dr Beate Ringwald, beate.ringwald@lstmed.ac.uk, +256765404509

BACKGROUND: About 80,000 people with Tuberculosis (TB) complete treatment in Uganda annually, adding to the growing population of TB survivors. While ideas to involve 'TB Champions' is popular, current approaches remain largely limited to task-shifting within health facilities.

AIM: We engaged TB survivors in Central Uganda to express their experiences and views on their meaningful engagement in the TB response using a participatory photography process.

METHODOLOGY: Fifteen TB survivors (8 men, 7 women), who had completed treatment at Naguru and Kawolo hospitals (February 2022 to August 2024), were trained in ethical photography using digital cameras. They took photos over two weeks and discussed their favourite images and agreed messages in workshops (March-April 2025). We analysed photos and audio transcripts from the workshops using thematic analysis.

RESULTS: Most TB survivors struggled with incomplete physical recovery (Figure 1), experiencing chest pain, breathlessness, and body weakness due to TB-related lung damage; loss or change of work; and social isolation, all of which impacted

their mental well-being. At the same time, many TB survivors were 'unofficial' TB advocates out of compassion and worries about TB exposure due to poverty, poor housing and sanitation, and lack of awareness in their communities. TB survivors changed their lives to protect themselves and prevent re-infection. Women counselled fellow women and persuaded those with cough to seek care. Men helped with transport to health facilities and encouraged fellow men to reduce alcohol use. As pain and stress had limited learning during treatment, TB survivors recommended health education after TB cure to help address TB myths and knowledge gaps effectively. They also need public speaking training to gain courage to counter TB stigma.

IN CONCLUSION: TB policymakers and programmes should listen to and respond to challenges of TB survivors, strengthening their capacity to ensure the TB response is effective and holistic.

Figure 1. Photovoice illustrative image and quote

"Guno muti gwa ovakedo. Gulabika nga ogutalina bukosefu, naye gwaliibwa akanzironziro. Singa tegukolebwako, akawuka kano kayinza okukosa ennyo omuti guno oba okugulya gwonna. Osobola okukajjamu mangu, omuti n'egubala ebibala ebirungi naye tegukula nga bwe gutekeddwa. Yeggwe muti guno. Akanzironziro kye kirwadde ky'akafuba."

"This is an avocado tree. It appears unaffected, but it's actually been infected by this parasite. If left unchecked, this parasite can devastate the tree, potentially consuming it entirely. You can remove the parasite early, and the tree goes on to bear good fruits, but it still doesn't grow the way it should. You are this tree. The parasite is TB."

TB Survivor 6, female, Kawolo

C8: INCIDENCE AND PREDICTORS OF EARLY LOSS TO FOLLOW–UP AMONG PULMONARY TUBERCULOSIS TREATMENT COMPLETERS IN TWO UGANDA TERTIARY HOSPITALS

Ivaan Pitua

BACKGROUND: Early loss to follow-up (eLTFU) after pulmonary tuberculosis (PTB) treatment completion is associated with poor long-term outcomes. Data on its incidence and predictors in Uganda are limited.

AIMS/OBJECTIVES: To determine the incidence and predictors of eLTFU among PTB treatment completers at two Ugandan tertiary hospitals.

METHODS: A prospective cohort study (September 2023–April 2025) enrolled 311 consecutive PTB patients who completed treatment at Gulu Regional Referral Hospital and Kiruddu National Referral Hospital. Baseline enrollment ended in January 2025, with all participants completing 3-month follow-up assessments by April 2025. Follow-up included scheduled post-treatment appointments and structured telephone reminders. The primary outcome was eLTFU (non-attendance at 3 months after ≥2 reminder calls); secondary outcome was 3-month mortality. Multivariable logistic regression identified predictors, reported as adjusted odds ratios (aORs) with 95% confidence intervals (CIs).

RESULTS: Participants had a median age of 41 years (IQR 30–52); 224 (72%) were male. Thirteen (4.2%; 95% CI 2.2–7.0%) died within 3 months. Of 298 survivors, 11 (3.7%; 95% CI 1.9–6.5%) experienced eLTFU, significantly associated with unemployment (aOR 2.74; 95% CI 1.71–4.39; P<0.001). Mortality predictors included severe respiratory impairment (SGRQ>60: aOR 6.01; 95% CI 1.20–30.05; P=0.029), monthly income <100,000 UGX (aOR 1.19; 95% CI 1.05–1.33; P=0.004), single status (aOR 3.2; 95% CI 2.3–4.8; P<0.001), and damp/moldy housing (aOR 2.56; 95% CI 2.50–2.70; P<0.001).

CONCLUSIONS: Socioeconomic factors, particularly unemployment, strongly predict eLTFU, while clinical severity and environmental conditions influence mortality. Targeted interventions addressing these modifiable risks could improve post-treatment monitoring in similar settings.

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