



International Multidisciplinary
Programme to Address
Lung Health & TB in Africa

Information Sheet on the NIHR Global Health Research Unit on Lung Health & TB in Africa

Background

Globally, it is estimated that 1 billion people suffer from acute and chronic respiratory conditions, making them major causes of illness and death. Although there is a relative lack of data and evidence on lung diseases beyond tuberculosis (TB) in Sub-Saharan Africa (SSA), their estimated regional burden is large and growing. In addition, there is a poorly understood relationship between infections, such as TB, and non-infectious causes of lung health problems. The problem in lung diseases in SSA is exacerbated by many factors, including under-prioritisation, under-treatment and weak preventative measures.

The Big Five

Asthma: The global prevalence has been growing over the past 3 decades, accounting for 383,000 deaths in 2015 alone. Asthma is particularly burdensome among children from low and middle income countries (LMICs), including much of SSA, and has been attributed to air pollution.

Chronic Obstructive Pulmonary Disease (COPD): 90% of global deaths occurred in LMICs. The biggest factor leading to COPD is tobacco smoking.

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

dysfunction often also goes unrecognised, despite its relatively high prevalence.

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

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

IMPALA's Approach

The International Multidisciplinary Partnership to Address Lung Health and TB in Africa (IMPALA) is a four-year collaborative programme launched in 2017 in 10 countries of SSA to generate knowledge and implementable solutions for high burden, under-funded and under-researched health problems where lung health and TB belong. IMPALA's comprehensive approach to improving Africans' lung health involves multidisciplinary collaborative work encompassing a range of clinical, social, health systems, health economics, policy, and implementation scientists from Africa and the United Kingdom (UK).

IMPALA operates in 10 countries of Sub-Saharan Africa: the Sudan Republic, Ethiopia, Kenya, Malawi, Ghana, Tanzania, Uganda, South Africa, Cameroon, and Nigeria.

IMPALA Partners

IMPALA is a Global Health Research Unit funded by the National Institute for Health Research (NIHR). Hosted by the Liverpool School of Tropical Medicine (LSTM). It is comprised of international partners and over 15 organisations across 10 African countries. LSTM's Professor Bertie Squire is the Principal Investigator, accompanied by an expert team representing the spectrum of applied health research disciplines.

The African Institute for Development Policy (AFIDEP), a regional non-profit research and policy think tank, is leading IMPALA's Pathways to Impact component. The objective of AFIDEP's work is to situate lung health as a priority health issue in Africa and promote evidence-based policies and programmes to improve regional lung health.



To do this, AFIDEP's activities include conducting a regional policy analysis, developing and implementing a regional policy engagement strategy, and training IMPALA PhD and Postdoctoral Research Assistants (PDRAs) researchers in policy engagement and evidence uptake.

IMPALA Research

At the center of IMPALA is ongoing research conducted by five African PhD students and five PDRAs on novel multidisciplinary lung health and TB issues. AFIDEP's capacity strengthening training and mentorship for these researchers ensures that they engage policy makers and processes in their work to effectively translate their research findings into policy and practice.

IMPALA's Impact

IMPALA is strategically positioned to advance lung health in Africa. The meaningful and timely evidence generated will drive national and regional lung health agendas by being effectively communicated to people and bodies able to implement policy-level change for improved lung health.

IMPALA Study Summaries

Multiple Disciplines: cross-cutting capacity development project (MUDI)

Yan Ding, PDRA, Policy delivery and impact

The MUDI project aims to generate evidence on what works for fostering multidisciplinary research and in what contexts, using lung health and TB as an example, and other IMPALA postdoctoral-led research as case studies. MUDI's findings will be used to develop evidence-based actionable recommendations to catalyse effective and sustainable collaborative multidisciplinary research in low and middle-income countries.

An integrated health systems approach for improving health services for chronic lung disease in Sudan and Tanzania

Uzochukwu Egere, PDRA, Health Systems, & Elizabeth Shayo, PDRA, Applied Social Sciences

Despite the large number of illnesses and deaths from chronic lung diseases (CLDs) in low and middle income countries (LMICs)--including much of SSA--CLDs are often neglected in LMICs' health systems which focus mainly on TB. This study aims to identify ways to include these 'forgotten' patients with CLD into existing healthcare for people with TB (in Tanzania) and asthma (in Sudan). Study findings will provide decision makers in Tanzania and Sudan with the much-needed data to support improved care of people with CLD within their health systems.

Maternal and socioeconomic determinants of lung function among young infants in Uganda: a birth cohort study

Rebecca Nantanda, PDRA, Clinical and Public Health & Zelalem Terfa, PDRA, Health Economics

Sub-optimal lung function at birth compromises long-term adult lung health. This study aims to understand whether pregnant Ugandan women's diets, the quality of the air they breathe, household food insecurity and socioeconomic status affect their new born babies' lung function. The findings aim to inform interventions for primary prevention of lung diseases in Uganda and across SSA.

Chronic respiratory symptoms in adults and children in Kenya: how do health systems respond and what are the opportunities for health system strengthening?

Stephen Mulupi, PhD Candidate, Health Systems

There is an urgent need to strengthen health systems in low-and-middle-income countries (LMIC) to effectively respond to the massive anticipated increase in CLDs over the coming decades. Yet there is little research data on CLD patients' experiences seeking healthcare services. Conducted within Kenya's public healthcare facilities, government and community sites, this study aims to assess how the Kenyan health system is responding to CLDs, by 1) estimating CLD reporting in healthcare facilities, 2) identifying challenges experienced by patients when seeking CLD medical care in public healthcare facilities, 3) assessing the readiness of Kenya's public health system to provide care for people with CLD and 4) identifying practical solutions to these challenges.

Patient and health worker experiences with communication about TB and CLDs in hospitals around Kampala

Irene Ayakaka, PhD Candidate, Applied Social Sciences

Effective health communication is critical to health care--empowering patients with the skills and knowledge to manage and improve their health. Health communication is particularly important for patients with CLDs which are widespread in LMICs and cause notable disruptions in patients' daily lives. This study seeks to understand how patient, caregiver, and health worker perspectives of communication during CLD diagnosis and treatment impact patient choices for disease management and coping strategies. The study findings will guide interventions and promote patient centered communication for improved CLD management in Uganda.

The Utility of Clinician-Performed Cardiopulmonary Ultrasound Assessment of the Acutely Breathless Patient: Breathlessness Early Detection with Ultrasound trial (BED-US Trial)

Jacqueline Kagima, PhD Candidate, Clinical and Public Health

Emergency doctors often base treatment decisions on limited clinical information--compromising accurate diagnoses, effective treatment and improved health outcomes. This study seeks to identify the usefulness of point of care ultrasounds in doctors' clinical diagnostics and decision making for breathless patients who need urgent care in Kenya's Kenyatta National Hospital. The study findings will inform improvements to health care and delivery for acutely breathless patients.

Assessing the societal burden of airflow obstruction and modelling the potential impact of leading interventions among adults in Malawi

Martin W. Njoroge, PhD Candidate, Health Economics

Despite the massive mortality and morbidity burden of non-communicable respiratory diseases (NCRDs) in low and middle-income countries (LMICs), little is known about NCRD's economic costs in LMICs. This study aims to estimate the health and economic cost of NCRDs among Malawi's adult population and identify effective interventions to reduce the burden of NCRDs, using data from a longitudinal follow-up study and mathematical modelling techniques.

Evaluating the impact of operational modelling on TB and lung health policy and practice in Sub-Saharan Africa

Brenda Mungai, PhD Candidate, Policy Delivery and Impact

Understanding what influences lung health policy is important to ensure research findings inform policies in order to effectively manage the burden of TB and respiratory diseases. This study will develop an operational model and use data from multiple sources, including Kenya's TB prevalence survey to project potential interventions to improve detection and management of TB and non-infectious lung problems. It will then undertake a lung health policy analysis to understand the processes, factors and actors that influence the importance of modelling approaches for lung health policy formulation and implementation in Kenya.