Innovative Tuberculosis Diagnosis – Leveraging Novel Methods and Digitization in Kenya and Zambia (InnovativeTBDx)

Project Report

Report by Seda Yerlikaya (Universität Heidelberg, Germany) on 01-02-2024, E-Mail: seda.yerlikaya@uni-heidelberg.de

GLOHRA Partner: Universitätsklinikum Heidelberg, Germany

LMIC Partner: Centre for Infectious Disease Research (CIDRZ), Zambia & Pwani University, Kenya

Countries: Zambia, Kenya & Germany

1. Introduction

The Innovative TB Dx project aimed to elevate our GLOHRA-funded research initiative into a sustainable implementation endeavour across Zambia and beyond. The partnership involved the University Hospital Heidelberg (UKHD, Germany), the Centre for Infectious Disease Research in Zambia (CIDRZ, Zambia), and Pwani University (Kenya). The project outlined specific objectives: facilitating knowledge transfer on data science, machine learning, and digital tools to improve TB diagnosis, engaging stakeholders in Zambia and Kenya, and fostering career development. These goals were pursued through a series of in-person meetings and workshops in each partner country, featuring extended stays by key team members.

2. Project Summary

The kick-off meeting marked the formal establishment of partnership, delineating roles, and outlining strategies. Teams from different countries, including in-person and virtual participation, shared insights into their ongoing TB work. Following the kick-off, an extended knowledge exchange period on machine learning and data processing took place in Germany.
Two impactful workshops titled "Innovative Tuberculosis Diagnostics – Leveraging Artificial Intelligence and Digitization" were subsequently organized in Zambia and Kenya, bringing together TB researchers and healthcare workers. These workshops disseminated crucial knowledge and actively engaged participants. The project prioritized gender equality, ensuring inclusivity across all training levels, contributing to the development of the next generation of TB researchers.

3. Findings

The project facilitated a deep understanding of the context and partner capabilities, fostering an interdisciplinary collaboration in data science, machine learning, digital tool development, diagnostic evaluation, and implementation science. This collaboration identified opportunities to develop, assess, and introduce innovative digital and diagnostic tools, holding promise for future improvements in TB diagnosis. Through stakeholder engagement, including interviews and workshops, the team refined an app-based prediction tool, identified relevant data sets, and explored integration opportunities with existing digital tools.

4. Lessons learned for the wider global health community

Inclusive Approach: The emphasis on gender equality and inclusivity at all training levels proved pivotal in fostering a diverse research environment.
Stakeholder Engagement: Engaging with local stakeholders through interviews and workshops not only refined the project's tools but also provided valuable insights into the local health systems and TB services.
In conclusion, the project not only achieved its objectives but also laid the foundation for ongoing and future advancements in TB research and care through collaborative innovation.

5. Appendix

Appendix 1. Zambia workshop flyer

Innovative Tuberculosis Diagnostics
Leveraging Artificial Intelligence and Digitization

a two-day workshop

Date: 10-11 May 2023
Location: CIDRZ

Talks

◇ Digital health tools for TB detection ◇ AI-based diagnostics ◇ Prediction models ◇ Digital tool development and implementation ◇ Usability assessment

Speakers

Mauro Tobin, Connected Diagnostics, UK
Claudia Denkinger, UKHD, Germany
Monde Muyoyeta, CIDRZ, Zambia
Lisa Köppel, UKHD, Germany
Maria del Mar Costro Noriega, UKHD, Germany

Free to attend, but prior registration is essential – https://forms.gle/rSvxWNXZBRK2CVxs7 .

Appendix 2. Kenya workshop flyer

Innovative Tuberculosis Diagnostics
Leveraging Artificial Intelligence and Digitization

a two-day workshop

Date: 6-7 September 2023
Location: Pwani University

Talks

◇ Digital health tools for TB detection ◇ AI-based diagnostics ◇ Prediction models ◇ Digital tool development and implementation ◇ Usability assessment

Speakers

Osman Abdullahi, Pwani University, Kenya
Claudia Denkinger, UKHD, Germany
Monde Muyoyeta, CIDRZ, Zambia
Lisa Köppel, UKHD, Germany
Maria del Mar Castro Noriega, UKHD, Germany

Free to attend but prior registration is essential - contact Osman Abdullahi (o.abdullahi@pu.ac.ke)

6. Contact

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