



The Union

WORLD CONFERENCE ON LUNG HEALTH 2022

COMBATING PANDEMICS:
TODAY & TOMORROW

Virtual Event November 8-11

DETECTION OF COMMUNITIES WITH HIGH TB INCIDENCE IN MINING AREAS

Mauro Faccin

CONFLICT OF INTEREST DISCLOSURE FORM

I have no Conflict of Interest to report

TUBERCULOSIS UNDER-DETECTION

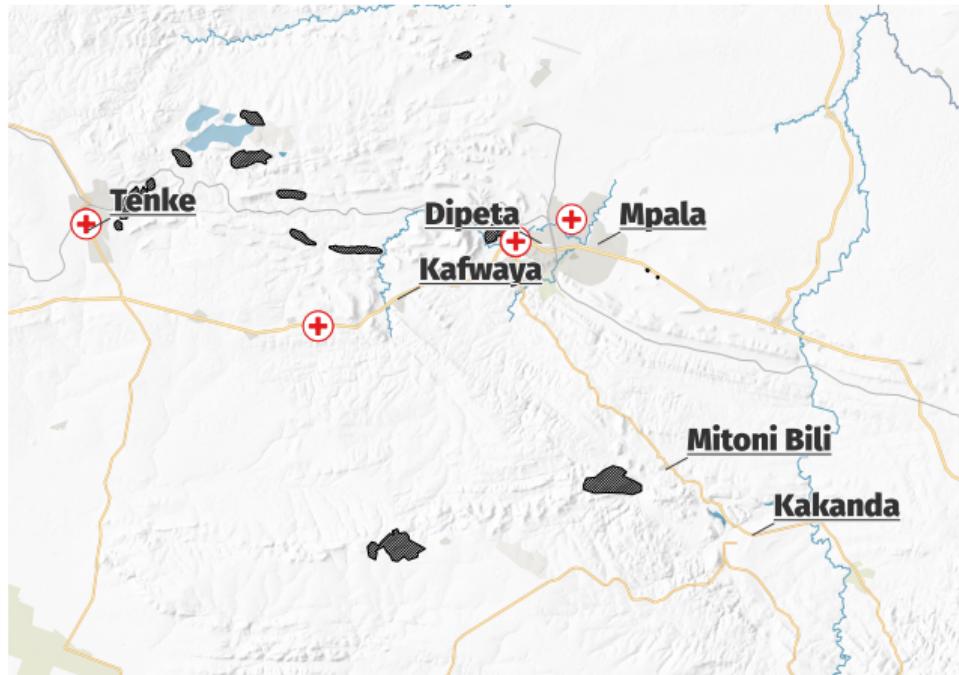
- ▶ 3.6 million TB cases are missed yearly [WHO]
- ▶ Under-detection is usually located in remote areas with difficult access to health care.
- ▶ Grasping the location of these communities is the first step toward the eradication of TB

THE MODEL

Use of compartmental model to disaggregate the reported cases.

Additional data to refine the model:

- ▶ Mine locations
- ▶ Health facilities

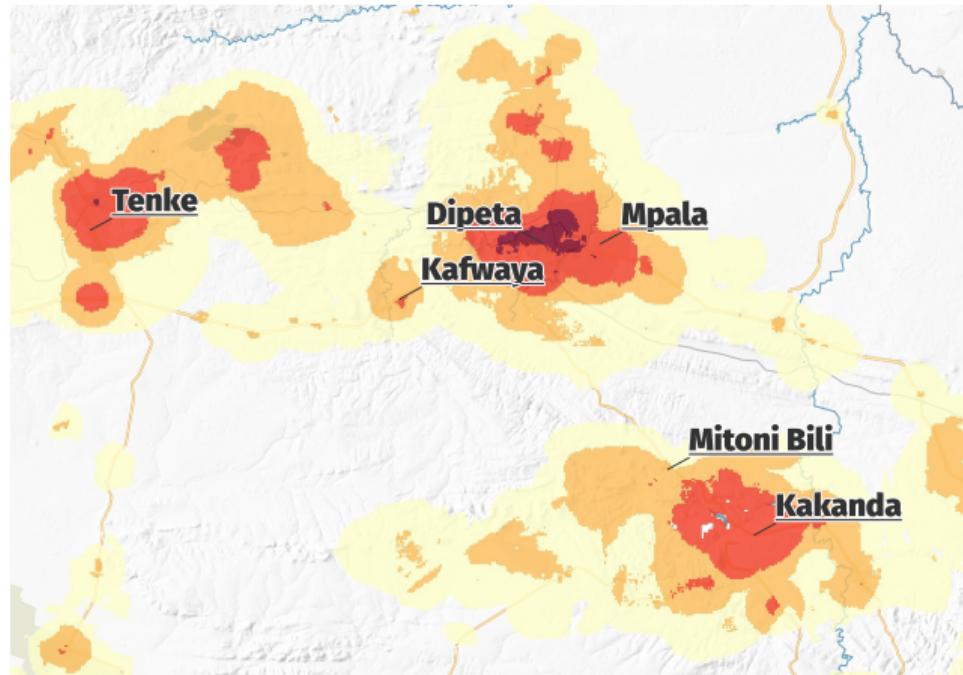


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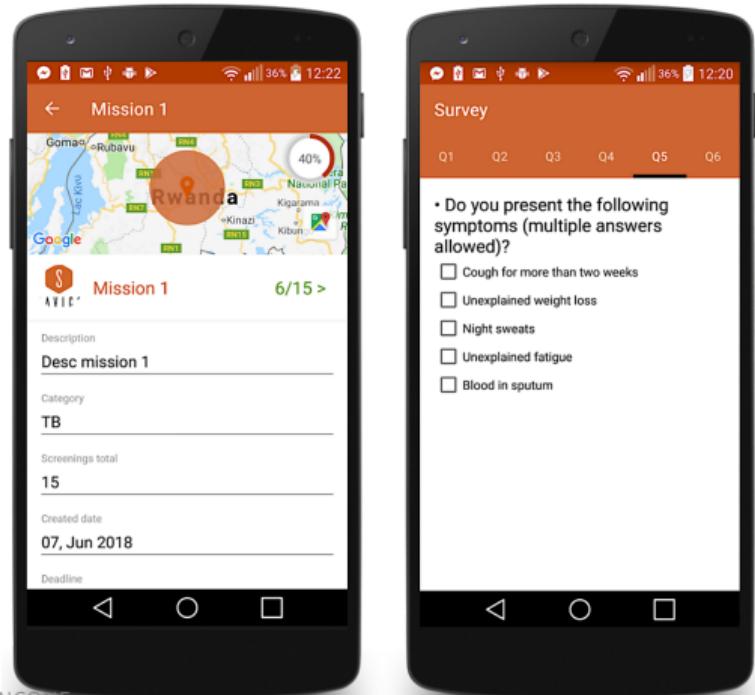


DIGITAL SUPPORTED QUESTIONNAIRE

Triage survey based on symptom, exposure and environment weighted questions.

Use of **MediScout©** (Savics, Belgium) for screenings activities:

- ▶ Mobile apps to plan and carry on the survey

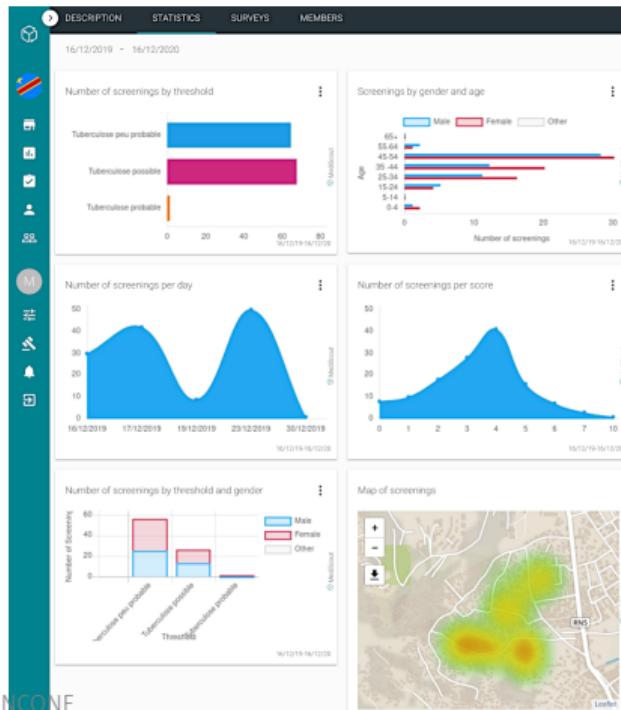


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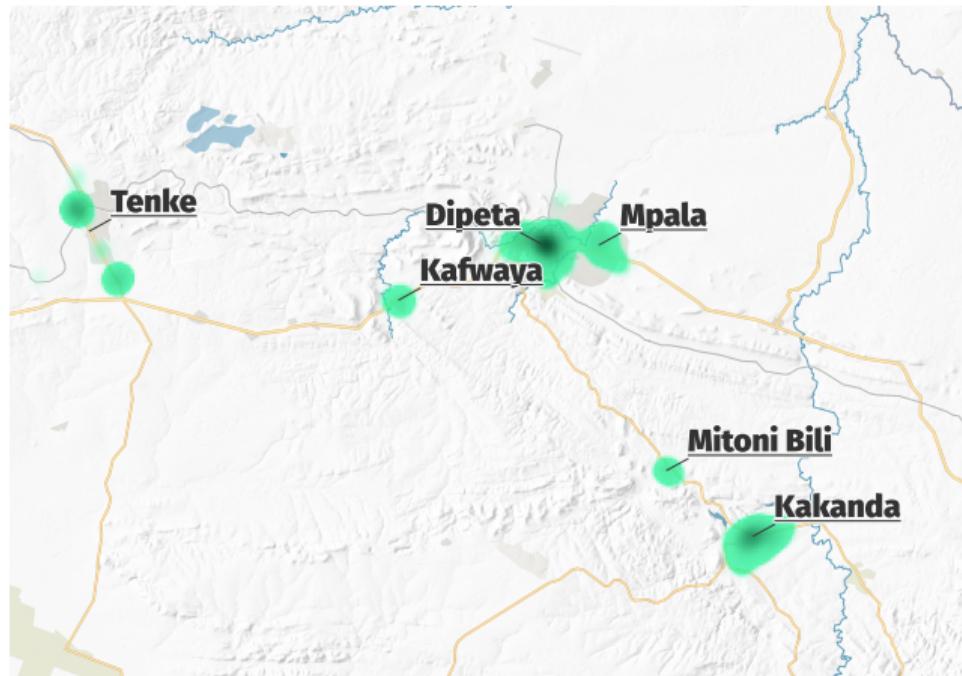
Use of **MediScout©** (Savics, Belgium) for screenings activities:

- ▶ Mobile apps to plan and carry on the survey
- ▶ Web app to collect data and perform analysis



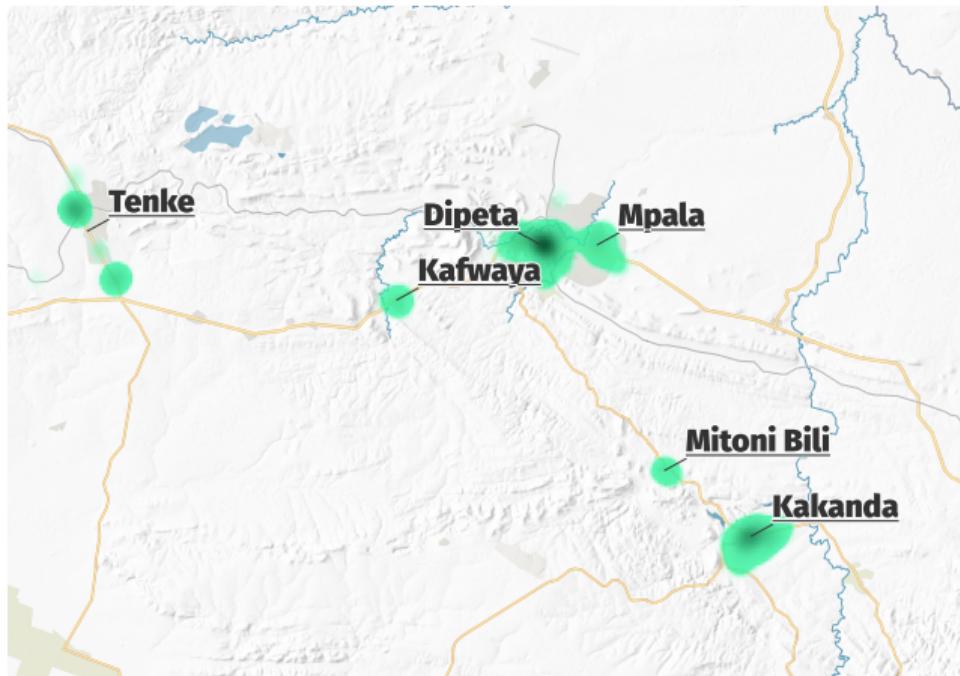
ACTIVE CASE FINDING

We perform a digitally assisted multi-centric prospective study in collaboration with Tenke Fungurume Mining SA.



ACTIVE CASE FINDING

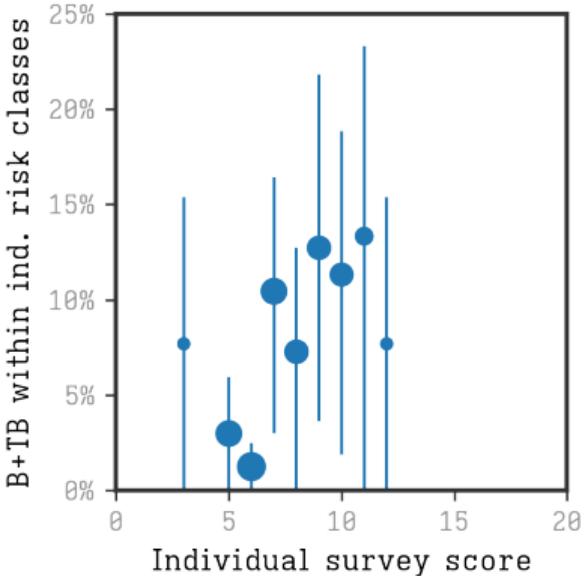
Screenings	4773
Locations	6
Tests (Xpert MTB)	457
positive cases	32



QUESTIONNAIRE AS TRIAGE SYSTEM

Number needed to test

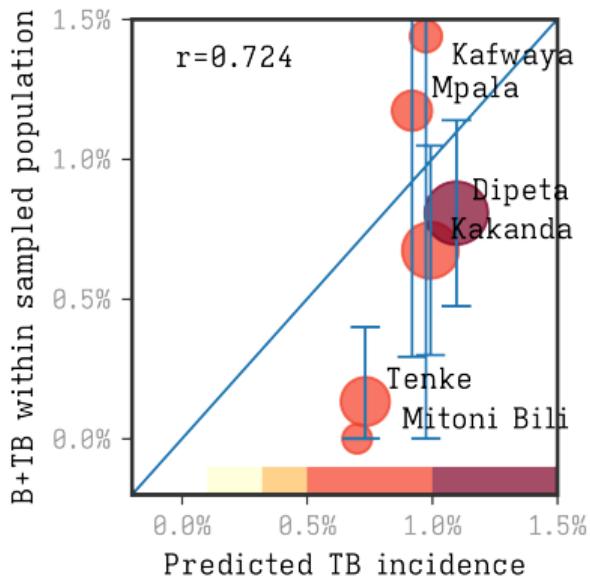
Patients with higher individual risk displays higher incidence of TB (higher than 10%)



MAP EFFICIENCY

Estimated incidence correlates to measured incidence in the communities.

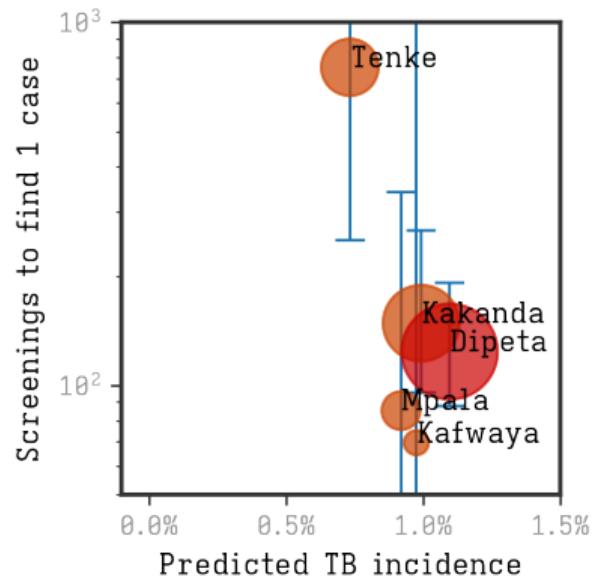
Some outliers are probably due to the low statistics.



NUMBER NEEDED TO SCREEN

Within high risk communities, the NNS drops to 100 screenings per positive case.

Communities	NNT
Low risk	19.4
High risk	8.7



THANKS AND COMMENTS

Thanks to all collaborators:

- ▶ Emmanuel André (UZLeuven, UKLeuven)
- ▶ Fairouz Boutachkourt (UCLouvain)
- ▶ Savics (Belgium)
- ▶ Tenke Fungurume Mining SA (DRC)

I will happily answer to any question or comment.

Mauro Faccin:

<https://maurofaccin.github.io>