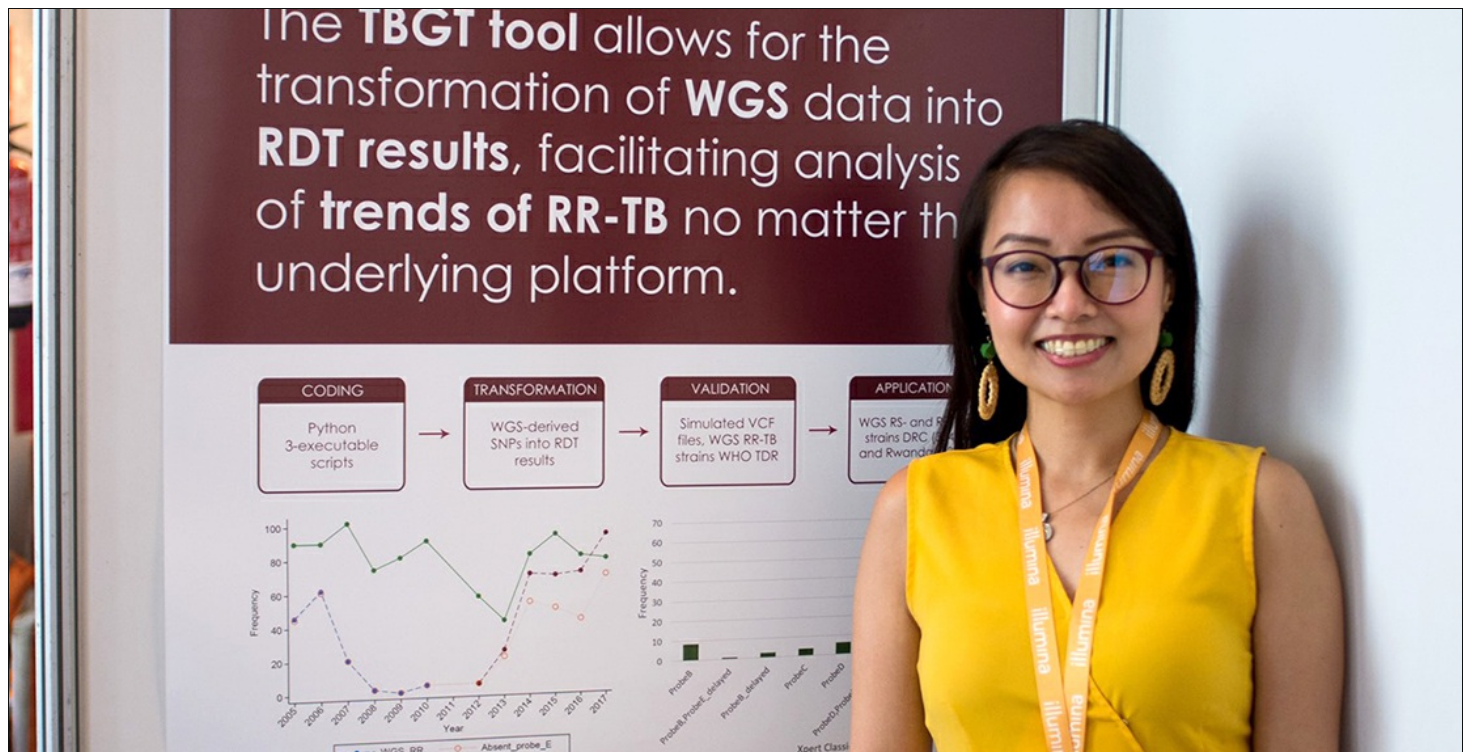


PhD defence Kamela Charmaine Sy Ng (Online)

Utilization of molecular resistance test results as tools to support public health efforts for improved control of rifampicin-resistant tuberculosis

02 jun 2020 13:00

Inschrijven niet verplicht



The TBGT tool allows for the transformation of WGS data into RDT results, facilitating analysis of trends of RR-TB no matter the underlying platform.

CODING
Python 3-executable scripts

TRANSFORMATION
WGS-derived SNPs into RDT results

VALIDATION
Simulated VCF files, WGS RR-TB strains WHO TDR

APPLICATION
WGS RS- and R strains DRC and Rwanda

Frequency

Year

WGS_RR

Absent_probe_E

Frequency

ProbeA

ProbeA_ProbeE_delayed

ProbeB_delayed

ProbeC

ProbeD

ProbeE_ProbeA

Xpert Class

Dit is de omschrijving

Attend the defence

<https://www.youtube.com/watch?v=WRPqkTAR86E&feature=youtu.be>

Supervisors

- Prof. Dr. Bouke de Jong (ITM)
- Prof. Dr. Frank Cobelens (Universiteit of Amsterdam)
- Prof. Dr. JuliÀ González-MartÀn (Universitat de Barcelona, Spain)
- Dr. F.C.M. van Leth (University of Amsterdam)

Abstract

Bridging diagnostic gaps may help reduce the global burden of rifampicin-resistant tuberculosis (RR-TB) transmission. Inaccurate diagnoses result in false RR-TB patients receiving toxic and less effective drugs, while false rifampicin-susceptible-TB patients continue to transmit RR-TB in the community which may lead to RR-TB outbreaks. Early detection of RR-TB outbreaks entails rapid and systematic analysis of RR data at the population level. The increasing use of Xpert MTB/RIF as a frontline diagnostic test for all presumptive TB patients provides an opportunity to utilize routinely produced RR-TB data for timely detection of RR-TB clusters. Currently, there is no system in place capable of performing this analysis.

The PhD thesis of Kamela Charmaine S. Ng entitled "Utilization of molecular resistance test results as tools to support public health efforts for improved control of RR-TB" has improved the understanding of routine diagnostic data and provided policy implications on addressing diagnostic challenges that affect interruption of RR-TB transmission.

Furthermore, this thesis developed an early warning tool which harnessed the full potential of routine Xpert data for improved RR-TB surveillance. This tool utilizes both projected site-specific numbers of RR-TB diagnoses and frequency of Xpert probe(s) which represents circulating RR-TB mutations in the setting. The National TB Control Program is then prompted to investigate further on Xpert site(s) with unusual RR-TB clusters, and tailor active case finding and initiate effective treatment to reduce the transmissibility of TB. This thesis demonstrates as a proof-of-concept, that routine Xpert data contain actionable information that could improve country surveillance of RR-TB.