SEMINARI RICERCA E FORMAZIONE

Giovedì 05 Febbraio 2026
ore 11:00-12:00
SALA SEMINARI INFORMATICA (C192)
https://meet.google.com/zqs-fvpa-imp

Modeling the Influence of Fear and Patients' Attitudes on Transmission Dynamics of TB

Maranya Mayengo (Ph.D)

School of Computational and Communication Science and Engineering (CoCSE) at The Nelson Mandela African Institution of Science and Technology (NM-AIST)

In this study we discussed the ongoing global health challenge of tuberculosis (TB), which is caused by the Mycobacterium tuberculosis bacteria. While in several studies, the transmission dynamics of TB were examined, it is noted in this work that the impacts of social processes like disease-induced fear and patient attitudes toward hospital treatment have been receiving a poor discussion on understanding the disease transmission and its control. In this paper we present and discuss a deterministic mathematical model to investigate how these social processes influence the transmission dynamics of TB. The basic reproduction number is calculated and used to examine the stability of steady states. Additionally, we conducted a sensitivity analysis which tells what are the parameters that most significantly affect . The key findings from the analytical and numerical simulations indicate that high levels of disease-induced fear in the population, coupled with positive attitudes toward hospital treatment, can significantly reduce TB prevalence. Based on these results, the study recommends implementing control programs that address these social processes as part of the ongoing efforts to combat the TB burden.
Il seminario è promosso dal Prof. Giancarlo Ruffo

SEMINARIO/CORSO APERTO A: Docenti | Teachers, Borsisti | Research Fellows, Assegnisti | Postdoctoral researchers, Dottorandi | PhD students, Studenti | Students
SEMINARIO/CORSO IN LINGUA: inglese

Aggiungi gli eventi
al tuo calendario
https://tinyurl.com/yw5lxyy5