

**Development of a Website-Based Geographic Information System (GIS) for
the Spread of Tuberculosis (TB) in Probolinggo City**
Andri Permana Wicaksono, S.ST., M.T. (Supervisor)

Dia Priyani
Health Information Management Study Program
Health Department

ABSTRACT

Tuberculosis (TB) is an infectious disease caused by bacteria known as Mycobacterium tuberculosis. This bacteria is spread through the air. When a TB patient coughs, sneezes, or spits, the TB bacteria are spread into the air and can be inhaled by people nearby. Based on the Probolinggo City Health Profile, tuberculosis cases in Probolinggo City fluctuate. The incidence rate, case fatality rate, and prevalence continue to increase, indicating that tuberculosis transmission is still active in the community. This study aims to create a geographic information system for the distribution of tuberculosis based on the number of cases, age, gender, and population density in Probolinggo City from 2023 to 2025. This research is a Research and Development (R&D) project that uses a waterfall system design and uses the Quantum GIS application for map creation and MySQL as a database. Furthermore, the application was tested using black-box testing. The results of this study are a geographic information system that can display a website-based map of tuberculosis distribution based on high, medium, and low prevalence categories, as well as age, gender, and population density. This system is used as a medium for education and information regarding the spread of TB and as an effort to implement early prevention to break the chain of tuberculosis transmission among the community, especially in Probolinggo City.

Keywords: *Tuberculosis, WebGIS, Geographic Information System.*