

ABSTRACT

Cervical cancer is one of the leading causes of death among women in Indonesia, with a high incidence rate largely due to the low coverage of early detection. The lack of information systems capable of interactively visualizing the distribution of pre-cervical cancer cases remains one of the obstacles in prevention and control efforts. This study aims to develop a web-based information system integrated with WebGIS to display the distribution map of pre-cervical cancer cases in West Java Province. The system is designed to assist relevant stakeholders, such as the Health Office, medical personnel, and local government, in monitoring and making data-driven decisions.

The system was developed using the Laravel framework, MySQL as the database, and Leaflet.js for interactive map visualization, employing the Waterfall development method. System testing was conducted in two stages: performance testing using hey with six main parameters (Hits per Second, Latency, Response Time, Response Code, Error Rate, and Throughput), and user experience testing through a Google Form questionnaire distributed to 20 respondents, including healthcare workers and relevant university students.

The performance testing results showed that implementing caching increased the average Hits per Second by 15–25%, reduced Latency by up to 30%, and improved Throughput by approximately 20%, with a very low error rate (0–0.5%) and response times under two seconds. The user experience testing indicated a high level of satisfaction, with more than 90% of respondents giving positive ratings on ease of use, interface navigation, clarity of map information, and visual quality. Based on these findings, the system is considered feasible for implementation as a supporting tool for cervical cancer prevention and to enhance public health literacy.

Keywords: *Cervical Cancer, WebGIS, Laravel, Performance Testing, User Experience.*