

## PUBLIC HEALTH INFORMATION ANALYZER: A SOLUTION THROUGH R OPEN SOURCE TECHNOLOGIES

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Healthier people represent the social, economical, psychological, and spiritual strength of a nation. The Public health system of a nation prevents health issues, outbreaks and communicable diseases before they occur to improve the quality of life and life expectancy. In achieving the above goals of Public Health domain needs timely, accurate and complete information and the ability to measure and monitor health indices. The Sri Lankan Public Health information sector faces various challenges in achieving the aforementioned goals specially, in disseminating communicable diseases due to lack of proper information monitoring ability. Therefore, objective of this research was to provide statistical assistance and public healthcare monitoring facility using a web based statistical tool for public healthcare data elements in both temporal and geographical perspective simultaneously. Even though commercial statistical software packages are available in the world, license cost of those is a major problem for a developing country like Sri Lanka. Therefore, we used open sourced technologies like R, java, html, java script and mysql database for tool development, where R, is a GNU project, a powerful open source statistical environment and a programming language. The web based statistical tool was specially developed for public health professionals by simplifying the usage and novelty of this tool is, it is embedded to a database containing public health information. Also our system has the ability to access data through an intranet and we provide statistical functions classified under different categories to support users with different levels in statistics and other technical knowledge. The Public Health data monitoring dashboard facility facilitates the users to monitor the behaviour of each data element which will be helpful in communicating disease outbreaks to analyse the impact and predict implications in the future at different geographical levels. The system is validated through cross- field and parameter dependencies defined at interface level and reports are generated through healthcare professionals' expert opinions.

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