

Pengembangan Model Pengendalian Wabah Penyakit Berbasis Risiko Wilayah: Studi Kasus Pandemi COVID-19 di Jawa-Bali

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Abstrak

<div style="text-align: justify;">Kejadian pandemi virus corona SARS-CoV-2 di dunia meningkatkan kesadaran bahwa pengendalian wabah penyakit di suatu daerah sangat berkaitan dengan karakteristik wilayah epidemik. Determinan sosial kesehatan dapat dijadikan sebagai kerangka kerja untuk memprediksi penyebaran penyakit dan mengusulkan upaya pengendalian wabah pada tingkat populasi berdasarkan penilaian risiko. Penelitian ini bertujuan mengembangkan model pengendalian wabah penyakit berbasis risiko wilayah. Metodologi: Studi kasus dilakukan terhadap pandemi COVID-19 saat gelombang Delta tahun 2021 di Indonesia. Untuk menjawab tujuan penelitian, dilakukan studi faktor risiko terhadap 128 kabupaten/kota di Jawa-Bali dengan analisis regresi linier. Penilaian risiko diukur dengan pemodelan kompartemen penyakit menular SEIRD (Susceptible, Exposed, Infected, Recovered, Dead). Usulan upaya mitigasi risiko, respon, kesiapsiagaan dan rehabilitasi dibangun berdasarkan hasil penilaian risiko. Seluruh analisis dikontrol berdasarkan tahapan pandemi yang terdiri dari pra, naik, turun, dan pasca. Hasil: terdapat 31 faktor determinan sosial kesehatan yang secara signifikan berpengaruh terhadap indikator wabah yakni kerentanan, penularan, kesembuhan, dan kematian. Hasil simulasi model diperoleh 17 faktor determinan sosial yang memiliki risiko signifikan berdasarkan vulnerability, capacity, exposure, dan hazard. Upaya pengendalian pandemi yang diusulkan ternyata memiliki perbedaan berdasarkan tahapan pandemi dan karakteristik wilayah kabupaten/kota. Kesimpulan: penelitian ini telah menghasilkan model pengendalian wabah berbasis risiko wilayah yang dapat diterapkan untuk mengatasi masalah krisis kesehatan lainnya pada tingkat lokal, regional, hingga global</div><hr /><div style="text-align: justify;">The COVID-19 pandemic has raised awareness that the control of disease outbreaks in a region is closely linked to the characteristics of the epidemic region. Social determinants of health can be used as a framework to predict the spread of disease and propose outbreak control efforts at the population level based on risk assessment. This study aims to develop a risk region-based disease outbreak control model. Methodology: A case study was conducted on the COVID-19 pandemic during the Delta wave in 2021 in Indonesia. To answer the research objectives, a risk factor study was conducted on 128 regencies/cities in Java-Bali using linear regression analysis. Risk assessment was measured using the SEIRD (Susceptible, Exposed, Infected, Recovered, Dead) infectious disease compartment modeling. Proposed risk mitigation, response, preparedness, and rehabilitation efforts were built based on the results of risk assessment. All analyzes were controlled based on the stages of the pandemic, consisting of pre, increase, declining, and post. Results: There were 31 social determinants of health factors that significantly affected outbreak indicators, namely vulnerability, transmission, recovery, and death. The results of the model simulation showed 17 social determinants of risk based on vulnerability, capacity, exposure, and hazard. The proposed pandemic control efforts actually differ based on the stages of the pandemic and the characteristics of the regencies/cities. Conclusion: This study has resulted in a risk region-based disease outbreak control model that can be applied to address other health crisis problems at the local, regional, and global levels</div>