Evaluating emergency health and medical responses to disasters and public health emergencies

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Background

Epidemiologists have traditionally preferred experimental and quasi-experimental methods to evaluate health and medical interventions. The challenge for disaster epidemiologists is neither approach is suitable for examining phenomena about the effect of health responses in the real-world context where they occur.

This study applied a unique methodology to empirically examine questions of how and why health and medical responses reduced injury, morbidity, and mortality for six large-scale disaster events, including earthquake, typhoon, flood, smoke haze, thunderstorm asthma and the COVID-19 pandemic.

Source: The Guardian (https://www.theguardian.com/world/gallery/2019/sep/24/indonesian-forest-fires-burn-causing-toxic-haze-across-south-east-asia-in-pictures)

Methods

A qualitative multi-case study methodology was applied, using evidence-based theoretical programme logic models to analyse the effect and impact of emergency health and medical responses.

Data analysis included the comparison of inputs, activities, investigation of transitions, effect of contextual factors and tests for rival explanations. Official reports were analysed from nine different author types, using directed content qualitative data analysis.

Events were case bounded by date, greater than 9,000 casualties, author involvement, and local agencies provided health and medical care.

Results

Four themes emerged critical to efficacy of response: governance, resources, partner influence, and policy.

Where policy provided clear separation of powers, systems delineated roles and responsibilities, provided clarity and process for assessment, resource acquisition, and operational mandates.

Where dedicated local networks were established and included non-health related organizations, the accelerated coordination of crucial health functions for rapid mobilization and prioritization of affected populations was achieved.

No event established overall delivery or quality targets nor identified healthcare workers as the highest order vulnerability. Access and quality of care determinants were influential in communities most severely affected. Disaster declarations were not always declared prior to the impact despite the certainty and risk to life understood.

Conclusions

Qualitative case study methodology is robust and flexible for examining characteristics of emergency health and medical response to disasters.

The methodology provides high compatibility for interrogating phenomenon in the real-world context in which they occur, and linking program logic, data collection and analysis to specific question being investigated.

Disaster response policy must orientate toward exposure mitigation, inclusion of non-traditional health actors, partnership building, and establishing health delivery targets for timeliness and coverage based on vulnerability stratification.

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Additional key information

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