

## Preventing the Next Pandemic

### What Can Local Governments Do?

#### Abstract

Infectious diseases have persistently challenged governments' capacity, especially during devastating outbreaks. Over the past three decades, more than 3,000 infectious disease outbreaks have occurred, resulting in millions of deaths across the globe. This article illuminates the crucial role of local governments in mitigating Emerging Infectious Diseases (EIDs). Instead of focusing on reactive responses, this article tackles how local governments can better prepare for future pandemics by delving into the case of Davao City, the largest city by land area and among the most densely populated cities in the Philippines.

Keywords: *Infectious diseases, COVID-19, Local government, Davao City, Philippines*



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Infectious diseases have long posed significant threats and continually challenge governments, especially during devastating outbreaks. Over the past three decades, more than 3,000 infectious disease outbreaks have been recorded globally (Liu et al., 2025), which include Emerging Infectious Diseases (EIDs) with the highest death tolls, such as HIV, AIDS, Spanish Flu, Ebola, SARS, and COVID-19. The recent COVID-19 pandemic, which claimed over seven million lives worldwide, taught us a painful lesson never to underestimate the lethal grip of the virus. Even states with the most advanced healthcare systems struggled to contain it, emphasizing that viruses, despite their microscopic nature, could weaken not only people but also institutions.

Frontline institutions, especially the local governments, should proactively address the issue before another pandemic begins.

In the wake of COVID-19, many governments have been compelled to invest in healthcare institutions, streamlining universal healthcare and telemedicine, and improving medical facilities (Kodali,

During the pandemic, the world witnessed how governments grappled with case isolation and mass vaccination. Some responded "proactively at best, while others were negligent at worst" (Lal et al., 2021). Five years later, scholars and practitioners are wary that it might not be the last pandemic (Feldscher, 2024; Frieden et al., 2021), as EIDs are rapidly evolving, especially with increasing ecological changes and human-wildlife interactions. In short, we are still at risk of entering another pandemic era in this lifetime.

2023; Lamberti-Castronuovo et al., 2022). While it presents a promising move, mitigating infectious diseases is treated with low salience, as most efforts are concentrated on managing diseases. This policy and research gap prompts policymakers and researchers to think of ways to shift from reaction to prediction. To get ahead of the next pandemic, we must first identify the hotspots to aid in long-term surveillance and EID monitoring. Scholars recognize the use of the Vulnerability Index (VI) as an assessment tool to identify and forecast areas with high economic and epidemiological risks (Macharia et al., 2020; Sands et al., 2016). This tool can inform policy choices of governments, helping them tailor interventions according to the needs of their constituents.



Day to day operations in Bankerohan Public Market, Davao City, Philippines. Photo by Frank Lloyd de la Cruz from Unsplash, [https://unsplash.com/photos/people-walking-on-market-store-\\_1DIKCetFFk](https://unsplash.com/photos/people-walking-on-market-store-_1DIKCetFFk). Free to use under Unsplash license.

In decentralized countries like the Philippines, the index can be far more useful when applied in local contexts. Damgo et al. (2023) adopt this method to examine the case of Davao City, the largest city by land area and among the most densely populated cities in the Philippines. Approximately 60% of EIDs stem from animals (Otte & Pica-Ciamarra, 2021), and the recent outbreak was widely linked to wildlife, livestock, and humans in changing environments (da Costa et al., 2020). Building on these previous studies, the researchers generated a VI for the 182 barangays (neighborhoods or villages) in Davao City by adopting four indicators: population density, livestock and domestic populations, climate factors, and human-animal interactions. The findings reveal that out of 182 barangays, 61 are highly vulnerable to EIDs, located in the districts of Talomo, Tugbok, Calinan, Buhangin, and Baguio. Highly vulnerable areas are concentrated mainly in villages with larger urban green spaces, higher animal populations, and multiple wet markets, areas that could heighten the risk of human-wildlife interactions and disruption of reservoir hosts.

Rapid urbanization and increased anthropogenic activities in Davao City necessitate pragmatic biosurveillance and disease prevention policies. While the city government has initiated programs related to climate change, air quality, and environmental sustainability (Mendoza, 2022), it has yet to fully address the challenge of mitigating EIDs. To effectively tackle this issue, it is imperative to advance

local policies that could prevent the propagation of EIDs and promote convergence among governments, constituents, and non-state actors, such as the academe, civil society organizations, and the private sector. Local governments, like in Davao City, can adopt the One Health Framework to develop programs and policies for EID mitigation. One Health is a unifying framework that recognizes the interdependence of the environment, animal, and human health in achieving sustainable and optimal health outcomes (Degeling et al., 2015). It acknowledges the need for multisectoral collaboration in addressing emerging health threats and the importance of an integrated biosurveillance, risk assessment, and capacity-building interventions to build safeguards against EIDs. Localizing the framework promoted by the World Health Organization, the Food and Agriculture Organization, and the World Organization for Animal Health by institutionalizing it as part of a local ordinance can serve as a blueprint and guiding principle in fighting zoonotic diseases at the city-level.



Aerial view of Davao City. Photo by patrickroque01 from Wikimedia Commons, <https://w.wiki/FM5q>. CC-BY-SA-4.0.

Instead of fragmentarily addressing social and health problems, the local government can foster a more consolidated effort to prevent EIDs, especially at the village level. To make this work, they should first address the potential information gaps that could arise from the residents' lack of knowledge of EIDs. One way to address confusion and misinterpretation of regulations is to involve multisectoral groups in public awareness campaigns. A more durable solution is to create and integrate an EID council or a policy body that could consistently monitor and assess the situation on the ground, and inform the government's policy choices. This mechanism can enhance coordination between the locals and the government, which is vital in ensuring the success of policy implementation.

Scholars highlight that metros and urban centers are often highly susceptible to becoming an EID reservoir due to their dense population (Alirol et al., 2011; Neiderud, 2015). As a highly urbanized center, Davao City should take precautions by enforcing infectious disease surveillance and establishing strategic biosecurity checkpoints in hotspot areas for wildlife, livestock, and domestic animals to minimize disease transmission. It is crucial to revisit local policies on wet markets to reduce the risk of disease emergence, as wet markets are the most susceptible viral transmission hubs (Webster, 2004). While other countries have enacted stringent regulations (Woo et al., 2006), policies regarding sanitation and hygiene in wet markets are generally taken for granted in the Philippines (Collado et al., 2015). The city government must strictly implement these policies and, at the same time, incentivize market vendors

to adhere to the regulations on market goods handling, sanitation, and proper waste segregation to safeguard public health. Moreover, regarding commercial farms, a comprehensive review of the City Land Use Plan (where the allowed proximity of farms and residential areas is explicitly stated) and other relevant policies is necessary to minimize the risk of cross-contamination. Incorporating animal biosecurity measures such as quarantine facilities, buffer zones, perimeter control, air filtration, and other biosafety protocols into local ordinances can strengthen the regulation on farms, wet-markets, and urban green spaces, which are considered high-risk EID transmission zones.

EIDs are microscopic, and to this date, millions of people have lost their lives to these “invisible threats”. Experts remind us that the fight against epidemic and pandemic diseases is not yet over; in fact, the next one could be more deadly. This call should galvanize local leaders and advocates to pursue a sound agenda and contribute to the achievement of the Sustainable Development Goals by prioritizing health and well-being, upholding sustainable environmental policies, and fostering partnerships across sectors. No place is safe from EIDs, especially dense urban centers, which are the most vulnerable to becoming EID arenas. Without enabling policies and strong stakeholder support, these areas could potentially become the epicenter for outbreaks. Frontline institutions, especially the local governments, should proactively address the issue before another pandemic begins. 

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**Arianne** is a scholar and practitioner of Public Policy, specializing in local governance, politics, and Mindanao studies. She earned her Ph.D. from the National Graduate Institute for Policy Studies (GRIPS) in Tokyo, Japan, where she was consecutively awarded the ADB-JSP and MEXT scholarships for master's and PhD studies. She works on topics encompassing reform politics, grassroots and civic innovation, and local transformation, with her most recent work published in the journal, *Policy Studies*. Before pursuing doctoral studies, she worked for the Provincial Local Government of Davao de Oro in Southern Philippines, leading digital innovations and supporting advocacy programs related to zero hunger, food security, women empowerment, and public health. [LinkedIn](#)

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### References

Alirol, E., Getaz, L., Stoll, B., Chappuis, F., & Loutan, L. (2011). Urbanisation and infectious diseases in a globalised world. *The Lancet Infectious Diseases*, 11(2), 131–141. [https://doi.org/10.1016/S1473-3099\(10\)70223-1](https://doi.org/10.1016/S1473-3099(10)70223-1)

Collado, L., Corke, H., & Dizon, E. (2015). Food safety in the Philippines: Problems and solutions. *Quality Assurance and Safety of Crops and Foods*, 7(1). <https://www.ukdr.uplb.edu.ph/journal-articles/2047>

da Costa, V. G., Moreli, M. L., & Saivish, M. V. (2020). The emergence of SARS, MERS and novel SARS-2 coronaviruses in the 21st century | *Archives of Virology*, 165, 1517–1526.

Damgo, M., Bacus, M., Bernido, J. D., Evangelio, S., Ligue, K. D., Estaña, L. M., Dela Torre, V. C., Murao, L. A., & Alviola, P. (2023). Vulnerability Assessment of Emerging Infectious Diseases in Davao City, Southern Philippines: Utilizing Global Predictors to Develop Localized Interventions. *Philippine Journal of Science*, 152(5). <https://doi.org/10.56899/152.05.04>

Degeling, C., Johnson, J., Kerridge, I., Wilson, A., Ward, M., Stewart, C., & Gilbert, G. (2015). Implementing a One Health approach to emerging infectious disease: Reflections on the socio-political, ethical and legal dimensions. *BMC Public Health*, 15(1), 1307. <https://doi.org/10.1186/s12889-015-2617-1>

Feldsher, K. (2024, September 12). The next pandemic: Not if, but when. *Harvard T.H. Chan School of Public Health*. <https://hsppharvard.edu/news/next-pandemic-not-if-but-when/>

Frieden, T. R., Buissonnière, M., & McClelland, A. (2021). The world must prepare now for the next pandemic. *BMJ Global Health*, 6(3). <https://doi.org/10.1136/bmjgh-2021-005184>

Kodali, P. B. (2023). Achieving Universal Health Coverage in Low- and Middle-Income Countries: Challenges for Policy Post-Pandemic and Beyond. *Risk Management and Healthcare Policy*, 16, 607–621. <https://doi.org/10.2147/RMHP.S366759>

Lal, A., Erondu, N. A., Heymann, D. L., Gitahi, G., & Yates, R. (2021). Fragmented health systems in COVID-19: Rectifying the misalignment between global health security and universal health coverage. *The Lancet*, 397(10268), 61–67. [https://doi.org/10.1016/S0140-6736\(20\)32228-5](https://doi.org/10.1016/S0140-6736(20)32228-5)

Lamberti-Castronuovo, A., Valente, M., Cretu, A., & Dal Molin, A. (2022). Decentralization of healthcare during crises: Riding the wave of post-pandemic health system reforms to rethink health workforce. *International Journal of Disaster Risk Reduction*, 76, 103040. <https://doi.org/10.1016/j.ijdrr.2022.103040>

Liu, Q., Liu, M., Liang, W., Li, X., Jing, W., Chen, Z., & Liu, J. (2025). Global distribution and health impact of infectious disease outbreaks, 1996–2023: A worldwide retrospective analysis of World Health Organization emergency event reports. *Journal of Global Health*, 15, 04151. <https://doi.org/10.7189/jogh.15.04151>

Macharia, P. M., Joseph, N. K., & Okiro, E. A. (2020). A vulnerability index for COVID-19: Spatial analysis at the subnational level in Kenya. *BMJ Global Health*, 5(8). <https://doi.org/10.1136/bmjgh-2020-003014>

Mendoza, I. F. C. (2022, October 23). Groups propose local laws on environment, sustainability. *SunStar Publishing Inc*. <https://www.sunstar.com.ph/davao/local-news/groups-propose-local-laws-on-environment-sustainability>

Neiderud, C.-J. (2015). How urbanization affects the epidemiology of emerging infectious diseases. *Infection Ecology & Epidemiology*, 5(1), 27060. <https://doi.org/10.3402/iee.v5.27060>

Otte, J., & Pica-Ciamarra, U. (2021). Emerging infectious zoonotic diseases: The neglected role of food animals. *One Health*, 13, 100323. <https://doi.org/10.1016/j.onehlt.2021.100323>

Sands, P., Turabi, A. E., Saynisch, P. A., & Dzau, V. J. (2016). Assessment of economic vulnerability to infectious disease crises. *The Lancet*, 388(10058), 2443–2448. [https://doi.org/10.1016/S0140-6736\(16\)30594-3](https://doi.org/10.1016/S0140-6736(16)30594-3)

Webster, R. G. (2004). Wet markets—A continuing source of severe acute respiratory syndrome and influenza? *The Lancet*, 363(9404), 234–236. [https://doi.org/10.1016/S0140-6736\(03\)15329-9](https://doi.org/10.1016/S0140-6736(03)15329-9)

Woo, P. C., Lau, S. K., & Yuen, K. (2006). Infectious diseases emerging from Chinese wet-markets: Zoonotic origins of severe respiratory viral infections. *Current Opinion in Infectious Diseases*, 19(5), 401–407. <https://doi.org/10.1097/01.qco.0000244043.08264.fc>

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