



Editorial

Preventing Reoccurrence of Outbreaks: Medical Anthropologists' Contribution to Identifying the Root Cause of an Outbreak and the Community's Adoption of Culturally and Context Appropriate Interventions

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In the complex and interconnected world of responding and controlling infectious diseases, understanding the what, when, where and how of an outbreak is no longer enough. To effectively halt transmission and prevent future resurgence, we must also understand the why—why people behave as they do during outbreaks, why certain interventions succeed or fail, and why disease spreads differently across seemingly similar communities. These questions lie at the intersection of epidemiology and medical anthropology.

Disease epidemiologists bring the critical technical expertise to identify the proximal causes of outbreaks: the etiologic agent, modes of transmission, and whether the outbreak is spreading. However, medical anthropologists aide epidemiologists in uncovering the root causes—social, cultural, economic, and behavioral factors that create the conditions for disease emergence and spread. These include housing and sanitation practices, health-seeking behaviors, local interpretations of symptoms, stigma, gender roles, culture, political structure and more.^{1,2}

This integrated approach is not hypothetical. The Institute of Epidemiology, Disease Control and Research (IEDCR) in Bangladesh routinely includes medical anthropologists as part of their field outbreak investigation teams. These interdisciplinary teams use a mixed methods approach to investigate outbreaks of Nipah virus, dengue, chikungunya, anthrax, and other diseases. The epidemiologists search for cases, generate hypotheses, and conduct studies to test their hypotheses. The anthropologists conduct community interviews and focus groups, observe behaviors, and explore local health beliefs and culture to complement the epidemiologic findings. Their contributions have helped reveal not only the routes of transmission but also the underlying factors that sustain or interrupt those routes—leading to more precise and accepted recommendations.^{3,4}

The benefits of this collaboration are clear:

- Appropriate, culturally sensitive questions that yield responses which help identify the root cause of the outbreak.
- Faster identification of transmission drivers, especially when they are socially, behaviorally, culturally or politically mediated and faster adaptation of interventions that control the spread of the outbreak.
- Improved community engagement and trust, which is essential for surveillance, contact tracing, isolation, vaccination, and other interventions.⁵
- Tailored recommendations that account for cultural norms and resource constraints, increasing the likelihood of compliance and long-term behavior change.
- Stronger insight into health system dynamics, such as why people delay seeking care or turn to informal providers or reluctant to adopt recommendations.

- Deeper understanding of context, identifying root causes like marginalization, misinformation, or historical trauma that fuel outbreaks and complicate response.^{6,7}

To fully realize the potential of this interdisciplinary model, efforts should be made to recruit, train, and retain anthropologists as integrated members of outbreak investigation teams. While anthropologists are experts in cultural interpretation and human behavior, they typically receive little to no training in outbreak response. Introducing foundational public health and epidemiology principles—such as transmission dynamics, case definitions, and study design—into anthropological training programs, and conversely, incorporating social science concepts into epidemiology curricula, would build a shared language and operational understanding of not only the contribution of each discipline to resolving the outbreak but also the synergy when both collaborate to describe and solve a problem.^{2,6} Trained anthropologists can play key roles in developing culturally relevant questionnaires, identifying behavioral patterns that contribute to disease spread, and crafting locally appropriate, actionable recommendations. Just as epidemiologists refine their ability to interpret laboratory and surveillance data, anthropologists can be equipped to navigate the field realities of public health emergencies. Building this workforce will enhance not only outbreak investigations but also overall community engagement and resilience.^{5,7}

Recent outbreaks of Ebola, COVID-19, and mpox have further demonstrated the importance of integrating social science expertise into public health. Behavioral drivers, misinformation, and community mistrust have repeatedly emerged as major factors influencing the effectiveness of outbreak response. Addressing these factors early and systematically through anthropologic methods can make the difference between containment and escalation.

In conclusion, including medical anthropologists on outbreak investigation teams strengthens public health practice by ensuring that interventions are not only scientifically sound but also socially informed and culturally grounded. As the IEDCR model in Bangladesh shows, this interdisciplinary collaboration is both practical and impactful. I encourage other countries and institutions to embrace the IEDCR model and include anthropologists as their partner in an outbreak response.

References

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