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Prepared for the ‘unexpected’? Lessons from the 2014–2016 Ebola epidemic in West Africa on integrating emergent theory designs into outbreak response

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How prepared were we for this most recent Ebola outbreak? Real-time emergent research is imperative for successful response to global health emergencies. While innovative biomedical interventions are certainly important,[1] local on-the-ground realities during the 2014–2015 West African Ebola epidemic demanded a different though complementary set of research skills. Effective response required deep, sensitive understandings of emergent local dynamics and flexible, emergent solution. *Emergency* intervention called for evolving, flexible *emergent* methods that produced and translated rapid knowledge throughout the crisis. Yet, the need for emergent theory methodologies such as ethnography that actively witness and document the *unforeseen* consequences of emergencies and their response receives little attention in preparedness strategies.[2]

Summary box

- Even seemingly straightforward interventions, such as vaccine delivery, require real-time awareness of emergent on-the-ground local (‘field’) realities.
- Outbreak response requires thoughtful engagement that include local communities from the start.
- Methodologies to actively witness, document and integrate unexpected events and consequences of implementations in response are needed.
- Emergent theory designs hold important disciplinary and methodological implications for implementing and delivering interventions.
- Emergent theory designs, such as ethnography, are an essential part of effective outbreak response, capturing emerging barriers and facilitators in real time and bridging local and global realities.

Global health community preparedness and response largely hinges on the rapid financialisation and development of innovative medical interventions.[3–5] However, even seemingly straightforward interventions, such as vaccine delivery, require real-time awareness of emergent on-the-ground local (‘field’) realities. Research that legitimately engages with communities in crisis to genuinely localise interventions demands dialogue with and by communities. Such research is often narrowly conceptualised as ‘communication’,[6 7] which ignores the socioeconomic, political and historical nature of vulnerability to disease and its transmission.[8] The limits of communication, when conceived as a top-down deployment of knowledge by national and international actors, have been identified as one of the main shortcomings of the response to other epidemics of our time, such as the HIV/AIDS pandemic. At the beginning of the West African Ebola epidemic, anthropologists cautioned against approaches that would draw on overly simplistic interpretations of risky behaviours and traditional practices.[9]

Beyond the hopes placed on new treatments and vaccines, reinforced by communication and sensitisation strategies, there is a need for preparedness in mechanisms, that is, methodologies to *actively witness and document unexpected events and unforeseen consequences of implementations and ways to integrate those factors in the response*. This has received little attention. Unexpected pre-existing social factors, as well as unintended consequences of the response itself are inevitable. *Emergencies* necessarily call for *emergent* methodological approaches that involve flexible adaptations that will rapidly produce effective scientific knowledge about sociopolitical structures and human behaviours in local and national field contexts for an effective response.

Emergent research designs, such as ethnography, involve data collection and analytical procedures that evolve over the course of

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an outbreak[10] and entail a constant iterative research process allowing for the inclusion/capturing of unpredictable factors that characterise emergencies. Countless examples of emergent approaches proved effective during the Ebola crisis.

In West Africa, as in many cultures around the world, proper mourning and burial is necessary for a dignified passage after death. At the beginning of the outbreak, frightened and without prior experience of the disease, some Guineans, Liberians and Sierra Leoneans reacted violently when sick family members were removed from their communities, not to be seen again. After anthropological interventions mediated emergency response teams and bereaved communities, safe and dignified burial practices were implemented.[11–14]

Discrepancies between expectations and actual practices posed a different set of challenges for Guinean Muslims (90% of the population) with regard to vaccination. Although vaccination is permitted according to most Muslim scholars, more than half of the Guineans interviewed during the crisis considered vaccination for the clinical trials of the candidate Ebola vaccines impious during Ramadan fasting. With the assistance of imams, context-sensitive accommodations were negotiated to assuage these emergent concerns.[15]

The negotiation of trust and the need for an understanding of local micropower dynamics became essential as the response unfolded. Trust is probably the most decisive condition for successful health interventions and has been shown to be key for strategies such as vaccinations. The start of a vaccine trial in Sierra Leone revealed the unexpected inability and unwillingness of local leaders to act as spokespeople for the trial in their communities, as they had witnessed the subversion of their power by national and international organisations responding to the outbreak.[16] In Guinea, in order to involve Ebola virus disease survivors in a convalescent plasma trial as providers of the experimental therapy, gaining trust from survivors' communities and their networks was a condition to the effective implementation of the trial and entailed a complex negotiation process between several micropowers, local partnering institutions and the research team which had to be constantly rebuilt/maintained throughout the implementation and post-trial phase. Anthropologists contributed to documenting those processes and 'monitoring' the relationships during the trial, with the close involvement of a key interlocutor. Taking into account what are essential but often hidden and unspoken power relations within communities was fundamental to effective communication and implementation. Regular interactions with people in communities at every level, from villages, to local and national leaders, to multilateral boardrooms, allowed the definition of adapted strategies to these emerging barriers and pointed to overly shallow interpretations associated, for example, with recurring violence attributable to ethnic specificities.

The need for emergent theory designs holds important disciplinary and methodological implications for implementing and delivering interventions and are an essential part of effective outbreak response, capturing emergent barriers and facilitators in real time, bridging local and global realities and contributing to alleviating suffering during epidemics.[17]

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