*INDIA’S ZIKA CONTROVERSY: COMMUNICATION ISSUES AT THE HEART OF TRANSPARENCY, PUBLIC HEALTH GOVERNANCE AND ETHICS*

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**Introduction**

In the midst of the 2017 World Health Assembly where Dr Tedros Adhanom Ghebreyesus was elected Director-General of the World Health Organization (WHO), the WHO released a situation report, on May 27, about the first three confirmed cases of Zika in India (1). Soon after, questions about the government’s silence on the issue started appearing on news media, and were shared through social media networks. The questioning was understandable given that the government had confirmed these cases in November 2016, January 2017 and February 2017. Effectively, the Indian government had reported the Zika cases to the WHO nearly six months after they confirmed the first case. The public had not been informed until March 2017 when a Member of Parliament shared information only about the first case, involuntarily, in response to a question. This exchange in Parliament did not lead to any further disclosures by the government, and went largely unnoticed by the media and the public. Lastly, yet lacking a public explanation, the government did not update the Integrated Disease Surveillance Programme (IDSP) website – a government initiative for online disease reporting – with information about the Zika cases. Indian and international media criticized the government’s management of the situation (2-4).

Over the ensuing week, news reports quoting senior officials at the national and state levels revealed the government’s rationale for their silence. The theme conveyed was that the government was in control of the situation, and they did not wish to create panic by informing the public about the cases. This approach however meant that even local civic officials were left uninformed, with staff and community members involved in surveillance given the impression that they were being tested for malaria, when they were in fact also being tested for Zika (5). State and national officials offered differing views on the need for people to know for what they were being tested (6).

The above events reveal fault lines in India’s communication management of epidemic-prone infectious diseases that lie at the sensitive intersection of transparency, public health governance and ethics. The aim of this commentary is to unpack the government’s communication approach by examining three issues. The first pertains to risk communication efforts by the government to the people. Here, we examine the government’s rationale using the analysis of social media outreach specific to Zika by the national and state entities, and public response to the same. Second, we examine which media channels and social connections Indians prefer to seek health information from during outbreaks. Lastly, we discuss the IDSP and the problems that lack of timely updates impose upon this initiative.

**Risk Communication for Zika in India**

The Zika controversy triggers two fundamental risk communication questions: 1) should the Indian government have disseminated Zika-related information to the public before the Zika cases were detected (preparedness phase)? 2) was the Indian government justified in not informing the public after the cases were detected (response phase)?

In the preparedness phase, public health agencies typically undertake a range of communication or educational activities. The recommended priorities vary across communication channels but broadly comprise developing and testing communication materials, cultivating awareness and trust by informing the public about the nature and level of the potential threat, and identifying potential online and offline opinion leaders (7). These activities strengthen the ability of policymakers to respond swiftly as and when cases surface, and prepare the public for the same (8). The response phase leverages the trust, credibility, and communication interventions that are now in place to manage public anxiety through constant communication, greater transparency, and clarity about uncertainties associated with the health threat – especially relevant in the case of Zika.

In keeping with these principles, India’s Ministry of Health and Family Welfare (MoHFW) released, in 2016, a National Risk Communication Plan (NRCP) for public health emergencies like Zika (9). Among other things, this plan mentioned the need for the public to be made aware before the first case is detected, and a combination of community outreach, traditional and social media to engage with the public in the preparedness and response phases. However, it appears that this plan was not put into practice given the scant evidence of Zika awareness campaigns using community outreach or traditional media both before and after the Zika cases were confirmed. Nevertheless, to what extent did the government use social media?

To examine this question, we extracted publicly available data from the Twitter handles of the Union Ministry of Health and Family Welfare (MoHFW-C), Gujarat state’s Ministry of Health and Family Welfare (MoHFW-G), Union Minister of Health Jagat Prakash Nadda (JPN) and Gujarat’s Minister of Health, Shankar Chaudhary (SC); and Facebook handles of JPN and SC. Facebook posts and tweets from January 30, 2016 (when the WHO declared Zika as a PHEIC) to July 18, 2017 were analysed by categorising them into a) preparedness phase (January 30, 2016 to November 8, 2016) and response phase (November 9, 2016 to July 18, 2017). Outreach was defined as the number of posts or tweets. Public engagement was captured through retweets and favourites for Twitter, and likes and comments for Facebook. We also compared Zika outreach with dengue as both are transmitted by the *Aedes* mosquito. The study was approved by Northumbria University’s Faculty Ethics Committee.

*Findings*: Table 1 indicates that of 13,444 messages posted across the six handles by the four entities, merely 20 mentioned Zika. Surprisingly, Zika-related tweets on the national handles dropped after the Gujarat cases when they might have been expected to increase.

*(Insert Table 1 here)*

Table 2 reveals that, albeit few, JPN’s tweets and SC’s Facebook posts related to Zika in the response period attracted greater public engagement on average compared to dengue, demonstrating public interest in the issue. Even if we were to assume that the greater number of dengue-related posts/tweets were targeted at indirectly creating awareness of Zika, the decrease in dengue outreach after the Gujarat cases contradicts this assumption. In summary, the government’s social media outreach for Zika was sparse and inconsistent despite the potential online reach of the four entities and demand for this information.

*(Insert Table 2 here)*

Table 3 enlists the top five words used in each of the six handles and the associated frequencies for each word. Here we see that the national and state ministry handles were by and large populated with health-related themes. However, across the Twitter and Facebook handles of the ministers (JPN and SC), health or any health-related theme found place in the top three only once. The most frequently tweeted themes include India’s Prime Minister Narendra Modi, an Indian salutation, and the country and state’s names. It is essential to note that these numbers do not comprise a comprehensive, theoretically driven content or thematic analysis, but provides a descriptive assessment of themes that populate the social media handles of the entities being analysed across the Zika preparedness and response timeline. The analysis of words suggest that the national and state health ministers might be predominantly using these platforms for political communication, as opposed to exclusively providing information on health-related issues.

*(Insert Table 3 here)*

*Discussion*: Why the NRCP’s recommendations went unheeded for Zika preparedness is unknown, but the government’s communication in the response phase is debatable. Aside from not immediately informing the public after the first case was detected, the government waited three days after the WHO’s statement to issue a press release. In the interim, several senior officials explained that the government avoided creating public panic. But this strategy meant that even local civic officials in Ahmedabad were left uninformed. Consequently, staff and community members involved in surveillance efforts were given the impression that the tests were being conducted for malaria (instead of Zika).

When assessed against findings from the 2016 Zika ethics consultation between the Pan American Health Organization (PAHO) and WHO (10), the government’s actions evoke three ethical concerns: 1) not acknowledging the centrality of pregnant women to Zika efforts by disseminating adequate and timely information about its risks, to enable them to exercise appropriate choices during pregnancy 2) not making complete information about the epidemiological burden available to the public in a timely, transparent and comprehensible manner clarifying the uncertainties surrounding Zika-related risks, and 3) questionable ethical practices while conducting surveillance-related activities.

The government’s approach can be rationalized along three lines. The popular perception of Zika as a threat to pregnant women (11), vivid imagery of babies born with microcephaly, and Zika’s sexual transmissibility, form a narrative that could have caused confusion and anxiety in a country with nearly 26 million pregnancies annually. Media sensationalism combined with a haphazard uncoordinated risk communication response could lead to widespread hysteria as witnessed during the 2009 H1N1 pandemic (12). Lastly, three isolated cases posed a minimal threat and the surveillance campaigns revealed no clusters.

But each of these points are precisely the reasons that warranted public engagement, as “a new diagnosis of Zika is an important teaching moment (13)” . For instance, the sheer scale of pregnancies in India meant that this demographic group could have benefited from timely credible information about Zika, and managed fears by clarifying the inconclusive evidence about Zika’s causative link with microcephaly. The lessons from the media coverage during 2009 could have engendered more consistent engagement with the news media. Journalists could have been better sensitized to the importance of, and trained in, responsible reporting during public health emergencies like Zika, and pre-tested press releases. Finally, the limited number of cases provided the government an ideal, low-threat opportunity to build public trust, clarify uncertainty around Zika, and fortify relationships with the news media.

In summary, the government’s “public panic” explanation creates a circular argument at best. That the government expected panic implies that they expected the public to treat the situation seriously, in which case active outreach was warranted. If the situation was indeed less than serious, refraining from public outreach implies the government was not confident enough in its ability to effectively communicate uncertainty and risk, and manage anxiety. Quelling information of this nature is thus, a surprising strategy given that the Indian public has quick and wide access to news from nearly 70,000 newspapers and 400 news channels, online-only news media, and active social media networks.

**Health Information Seeking during Infectious Disease Outbreaks:**  In such a media-rich scenario, where or whom do Indians prefer to seek health information from during outbreaks? Previous studies have looked at online health information seeking behaviours among Indians (14), or niche population groups such as medical professionals (15). The wide socio-demographic and cultural diversities in India behove us to consider traditional media channels and social connections as potential health information sources among the general public.

In this section, we report findings from a 2013 survey conducted among 1,000 adults in Kolkata, Madras, Hyderabad, Mumbai and Delhi.[[1]](#footnote-1) This study was part of a larger project commissioned to understand characteristics (one of which was related to health) of the middle-of-pyramid (MOP) population in India. The main questionnaire was arranged in six sections: demographics, media use, community engagement, general health perceptions, tuberculosis and malaria. This article examines specific insights related to health information seeking gleaned from the general health perceptions section. We captured two sub-components of health information seeking during outbreaks and/or emergencies that emerged from our consultations with experts in India: information about the public health issue sought from, or delivered by media sources (public channel), and seeking medical advice from individuals (private channel). For the first sub-component, we captured health information seeking preferences from print, broadcast and digital media. For the second, we focused on main interpersonal sources of health information as gleaned from past literature (16) and local experts.

*(Insert Table 4 here)*

*Findings*: *Media Types* (Table 4): We found statistically significant differences among respondents from the five cities in terms of their preferred choice of media for seeking health information. Television was the most preferred choice of media type with a minimum score of 4.27 across all the five cities. The widest variation belonged to radio, which meant that while respondents from Chennai reported the highest score of 4.31 (SD=0.65), Delhi reported the lowest preference for this medium (M=1.23, SD=0.58). From print media, newspapers were found to be the most consistently preferred choice across all cities with a high of 4.57 (SD=0.61) among Chennai’s respondents and a low of 3.34 (SD=1.44) among Delhi’s respondents. Preference for posters/pamphlets was highest among respondents in Mumbai (M=4.12, SD=0.73) and lowest among those in Delhi (M=1.58). Preference for seeking health information using the Internet (via computers) was relatively limited across all cities, with Chennai reporting the highest (M=3.79, SD=0.79) and Hyderabad the lowest score (M=2.04, SD=1.18). Preference for seeking health information using mobile phones was relatively higher across all cities, with Chennai reporting the highest (M=4.62, SD=0.54), followed by Mumbai (M=4.29, SD=0.65) and Delhi reporting the lowest (M=2.32, SD=1.18).

*(Insert Table 5 here)*

*Social Connections* (Table 5): In terms of social connections, we observed the greatest consistency in seeking health information from doctors (or family physicians) with a highest score of 4.83 (Delhi) and lowest of 4.02 (Hyderabad). The second most consistent preference was shown for friends with a high of 4.61 (Chennai) and a low of 3.81 (Hyderabad). Respondents also preferred seeking health information from family members with a high of 4.78 (Chennai) and a low of 3.44 (Hyderabad). Preference for seeking health information from traditional medicine practitioners (such as practitioners of Ayurveda or Homeopathy) was highest among respondents in Chennai (M=4.40, SD=0.67) and lowest among those in Delhi (M=1.38, SD=0.81). In comparison, pharmacists were more consistently preferred with a high of 4.23 (Chennai) and a low of 2.23 (Delhi). Respondents widely varied in terms of their preference to seek health information from local government authorities with those from Chennai reporting the highest (M=4.53, SD=0.52) and Delhi the lowest (M=1.41, SD=0.85).

*Discussion:*Like the rest of the world, television is a widely popular medium for seeking health information in India. The relatively limited preference for desktop-based Internet as opposed to the high preference for mobile phones is consistent with the unprecedented penetration of mobile services in India. For information dissemination during public health emergencies, mobile phones provide wide reach at minimum cost and grounds for innovative outreach and engagement: opportunities that the government has thus far failed to optimize.

Interpersonal communication channels function as repositories of information and individuals “often gain information about health issues from those in their interpersonal networks.” (17). These findings enhance the need for transparent, efficient communication from the government during health events like Zika. In its absence, people are likely to seek health information from their relatives and friends; social interactions that might well prove fertile ground for misinformation and rumours to gain ground.

Surprisingly, the preference for health information from local government authorities was the lowest in Delhi, the political capital of the country. It is possible that this preference, or lack thereof, is mediated by psychosocial factors such as political trust that could have possibly eroded in the aftermath of a series of corruption cases in the capital over the years preceding the survey (18). Irrespective of political establishment or ideology, these findings speak to the need for public health agencies to develop trust during non-outbreak periods, so that information dissemination and utilization of such information can be better facilitated during public health emergencies, like Zika.

**The Integrated Disease Surveillance Programme (IDSP) Conundrum**:

Launched in 2004, the IDSP was conceived to facilitate timely detection and reporting of infectious disease outbreaks. According to the IDSP website, the programme’s mission is: *“To strengthen the disease surveillance in the country by establishing a decentralized State based surveillance system for epidemic prone diseases to detect the early warning signals, so that timely and effective public health actions can be initiated in response to health challenges in the country at the Districts, State and National level.”* Using online capabilities for coordination and information sharing between health agencies at these different levels is thus clearly a mandate of the IDSP. However, Zika updates failed to appear on the publicly available disease maps through the IDSP website, raising two concerns pertinent to this effort.

First, if the IDSP portal intends to facilitate electronic information sharing between agencies, providing incomplete or inconsistent information – with some diseases reported and others not – defeats the mandate of the programme. Second, the IDSP established in 2008 a Media Scanning and Verification Cell (MSVC) (19) to detect unusual health events through an electronic monitoring of national and international news media sources – a strategy consistent with recent innovations in digital disease detection at a global level, such as ProMED-mail and HealthMap (20, 21). However, this incident – where the media remained in the dark about Zika until they received information from the WHO – reveals a curious interdependency between the news media and digital disease detection initiatives. That is, if the media fails to report disease cases that have somehow missed their radar, the missing reports will adversely affect the reliability of national and global digital disease detection initiatives like the MSVC and ProMED-mail to capture and visually portray public health events through disease maps. Therefore, trusting the media to detect health events but being unwilling to trust them as useful resources of dissemination reflects a strategic equivocation in terms of engaging them as partners in preparedness and response efforts.

**Conclusion**

On July 10, the Tamil Nadu state government confirmed a Zika case within 11 days of detection and immediately made the information public. While this approach provides a promising contrast with the situation in Gujarat, it creates more questions than answers. First, varying approaches in the two states makes it unclear whether public communications related to Zika is a prerogative of the Centre or the states. Second, if states are tasked with this responsibility, the lack of uniformity reflects guidelines that are either inconsistent or non-existent. Third, such inconsistencies create information asymmetries across states, as communities are unclear as to when and from whom they can expect updates about important public health emergencies.

The lessons from this commentary are clear. The ministers and ministries of health at the national and state (Gujarat) levels actively use social media platforms but barely used it to create awareness about Zika. They deliberately chose to not communicate to the public to avoid a “low hazard, high outrage” scenario, demonstrating the limited confidence in their ability to manage panic, if any ensued at all (22). Reasons as to why the IDSP portal was not updated with Zika cases, and whether the government’s silence surrounding the Zika cases in Gujarat was simply the result of an uncoordinated, lackadaisical system or was a deliberate strategy shaped by strategic interests (23) is as yet unknown.

In conclusion, the Gujarat Zika controversy has revealed communication-related issues at the public and inter-state levels – that require immediate attention. News of the first of 260 microcephaly cases in India (since February 2016) finally being tested for Zika now has reinvigorated calls for more transparency (24). As India seeks to assume greater regional and global leadership on a range of issues including climate change (25) – intricately linked to vector-borne diseases like Zika – adopting a responsible and transparent approach to timely disease reporting and risk communication will contribute to their international standing. With a billion over population, residing in *Aedes*-friendly conditions at risk of Zika (26), India’s public health system is now in urgent need of bolstering the trifecta of good governance – ethics, transparency and accountability – through a communications approach that is, at the very least, responsible. Not only to itself, but also to the region and globally.

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**References**

1. World Health Organization. Zika virus infection: India 2017 [Available from: <http://www.who.int/csr/don/26-may-2017-zika-ind/en/>.

2. *The Hindu*. Zika cases in India: A shocking cover-up 2017 [Available from: <http://www.thehindu.com/opinion/editorial/zika-cases-in-india-a-shocking-cover-up/article18619615.ece>.

3. Biswas S. Did India hide its first cases of Zika virus? : BBC; 2017 [Available from: <http://www.bbc.co.uk/news/world-asia-india-40081524>.

4. Kar A. The sting of Zika 2017 [Available from: <http://indianexpress.com/article/opinion/columns/the-sting-of-zika-4681667/>.

5. Vora P. In Gujarat, government tested blood samples for Zika virus but told patients it was for malaria 2017 [Available from: <https://scroll.in/pulse/839372/in-gujarat-government-tested-blood-samples-for-zika-virus-but-told-patients-it-was-for-malaria>.

6. Vora P. Zika in Ahmedabad: 'This is not a public health crisis', claims Gujarat health commissioner 2017 [Available from: <https://scroll.in/pulse/839074/interview-this-is-not-a-public-health-crisis-says-gujarat-health-commissioner-about-zika>.

7. Vijaykumar S, Jin Y, Nowak G. Social media and the virality of risk: The risk amplification through media spread (RAMS) model. Journal of Homeland Security and Emergency Management. 2015;12(3):653-77.

8. Organization WH. World Health Organization outbreak communication planning guide. 2008.

9. Welfare MoHaF. National Risk Communication Plan 2016 [Available from: ncdc.gov.in/writereaddata/mainlinkfile/File593.pdf.

10. Pan Americal Health Organization, World Health Organization. Zika ethics consultation: Ethics guidance on key issues raised by the outbreak2016 June 24, 2017. Available from: <http://iris.paho.org/xmlui/bitstream/handle/123456789/28425/PAHOKBR16002_eng.pdf>.

11. Organization WH. Zika virus, microcephaly and Guillain-Barré syndrome situation report. 2016.

12. Ramaswamy R. Exploring H1N1 risk communication in India. In: Moor R, Rajeev Gowda MV, editors. India's Risks: Democratizing the Management of Threats to Environment, Health, and Values. New Delhi: Oxford University Press; 2014.

13. Basnyat B. Zika in India --the case for prompt reporting: BMJ; 2017 [Available from: <http://blogs.bmj.com/bmj/2017/06/09/buddha-basnyat-zika-in-india-the-case-for-prompt-reporting/>.

14. Lee ST, Lin J. A Self-Determination Perspective on Online Health Information Seeking: The Internet vs. Face-to-Face Office Visits With Physicians. Journal of health communication. 2016;21(6):714-22.

15. Dasgupta N, Yadav AK, Dasgupta S. Information-Seeking Behavior of Medical Professionals in the Digital Age in Kolkata, India. Journal of Electronic Resources in Medical Libraries. 2017;14(1):1-16.

16. Mokhtar IA, Goh J-E, Li KJ, Tham CX-L. Medical and health informatin seeking among Singapore youths: An exploratory study. Singapore Journal of Library and Information Management. 2009;38:49-76.

17. Dutta-Bergman MJ. Primary Sources of Health Information: Comparisons in the Domain of Health Attitudes, Health Cognitions, and Health Behaviors. Health Communication. 2004;16(3):273-88.

18. Sukhtankar S, Vaishnav M. Corruption in India: Bridging research evidence and policy options. 2015.

19. Sharma R, Karad AB, Dash B, Dhariwal A, Chauhan L, Lal S. Media scanning and verification system as a supplemental tool to disease outbreak detection & reporting at National Centre for Disease Control, Delhi. The Journal of communicable diseases. 2012;44(1):9-14.

20. Brownstein JS, Freifeld CC, Reis BY, Mandl KD. Surveillance Sans Frontieres: Internet-based emerging infectious disease intelligence and the HealthMap project. PLoS medicine. 2008;5(7):e151.

21. Yu VL, Madoff LC. ProMED-mail: an early warning system for emerging diseases. Clinical infectious diseases. 2004;39(2):227-32.

22. Sandman P. Responding to Community Outrage: Strategies for Effective Risk Communication Fairfax, VA: American Industrial Hygiene Association; 1993 [Available from: <http://www.psandman.com/book.htm>.

23. Outlook. Fearing adverse travel advisory during Vibrant Gujarat, did state government delay Zika virus news? 2017 [Available from: <https://www.outlookindia.com/website/story/fearing-adverse-travel-advisory-during-vibrant-gujarat-did-state-government-dela/299132>.

24. Krishnan V. Govt. finally goes ahead to test microcephaly-Zika link 2017 [Available from: <http://www.thehindu.com/todays-paper/tp-national/govt-finally-goes-ahead-to-test-microcephaly-zika-link/article19034631.ece>.

25. Times TE. India, China already showing strong leadership to combat climate change: UN environment cheif 2017 [Available from: <http://economictimes.indiatimes.com/news/environment/global-warming/india-china-already-showing-strong-leadership-to-combat-climate-change-un-environment-chief/articleshow/58958024.cms>.

26. Bogoch II, Brady OJ, Kraemer MU, German M, Creatore MI, Brent S, et al. Potential for Zika virus introduction and transmission in resource-limited countries in Africa and the Asia-Pacific region: a modelling study. The Lancet infectious diseases. 2016;16(11):1237-45.

1. *Respondent Profile* (Table 1): Distributed equally across each of the five cities, we surveyed 1,000 respondents of which 46% were men and 54% women as shown in Table 1. Nearly 36% of respondents were 30 years of age or younger and approximately 44% between 31-50 years old. A vast majority of our sample was married (79%) while nearly 58% had obtained secondary or pre-university education. About 40% of respondents reported a monthly household income of INR 10-20,000 (USD 187-374). Overall, our sample was generally reflective of the Indian urban population. [↑](#footnote-ref-1)