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COMMENT

Zika reveals India's risk communication challenges and needs

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Abstract

India's approach to disseminating information about the first three cases of the Zika virus was criticised nationally and internationally after the issue came to light in May 2017 through a World Health Organization news release. We analyse the incident from a risk communication perspective. This commentary recaps the events and synthesises key arguments put forth by the news media and public health stakeholders. We use Peter Sandman's risk = hazard + outrage framework – also adopted by India's risk communication planners – to analyse India's risk communication response and contextualise it against the mandate of the National Risk Communication Plan and Integrated Disease Surveillance Programme. We conclude with recommendations for India's risk communication policymakers, including the need to develop capacity for risk communication research and scholarship in the country.

Introduction

The global decline of the Zika pandemic (1) provides an opportunity for India's public health community to reflect upon the management of its own Zika experience in 2017. The Indian government's opaque approach to communicating about the first three confirmed cases of Zika deserves retrospective reassessment, especially as it was widely criticised by the national and international media. This commentary will recap the events that unfolded, document India's response, and examine India's approach to communicating with international stakeholders and its own citizens. We will examine the challenges of communicating high risks to audiences with low perception of risks and

discuss the ethical dilemmas presented by such situations to policymakers, practitioners and researchers.

Zika in India

On May 26, 2017, the World Health Organization (WHO) released news about the first three confirmed cases of Zika, all of them in Ahmedabad, Gujarat (2). According to official reports by the Indian Council for Medical Research (ICMR) (3, 4) the first case was of a 34-year old woman who developed fever and chills after delivery. She tested positive for Zika virus after her blood sample was collected on November 14, 2016. The second case was detected during an antenatal care screening and was of a 22-year old woman in the 37th week of her pregnancy whose sample was collected on January 11, 2017. The intensified acute febrile illness (AFI) surveillance efforts after the first case led to the detection of the third case, of a 64-year old man whose sample was collected on February 3, 2017. [A fourth case too was detected on June 29, 2017, in Tamil Nadu, but the scope of this commentary is limited to the controversy surrounding the first three cases.]

The WHO news release soon amplified into a controversy with the national and international media raising several questions (5-7). For one, it was unclear why the information about the Zika cases, classified as a public health emergency of international concern (PHEIC), arrived from the WHO and not from the Indian government (8). Journalists and commentators questioned why it took the Indian government nearly six months after the first case to notify the WHO, when the International Health Regulations (IHR) (2005) oblige them to notify within 24 hours (9). Other reports highlighted potentially unethical practices during the AFI surveillance conducted after the first case. Specifically, the government was collecting an extra blood sample to test for Zika from patients being tested for malaria and dengue, without informing those being tested (10). Related accounts revealed that in many instances, even local civic officials were left uninformed about surveillance activities (11). Lastly, the motivations behind the failure to update the Zika cases on the Integrated Disease Surveillance Programme (IDSP) website – a government initiative for online disease reporting – were also questioned (12). The news media thus highlighted various gaps in the government's information and communication management of the situation, and questioned the motivation behind withholding information of vital importance to public health (13), while experts demanded ethical practices, transparency, and accountability (10).

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In response to the media coverage, the government's communication was passive and scattered. For instance, the Ministry of Health issued its first press release (14) on June 1, 2017, nearly four days after the WHO release, and more than six months after the first case was found. While several health officials responded individually to questions from a range of journalists, health ministers at the central and state levels used social media platforms like Twitter, to communicate about Zika. The only consistent message was that the government chose not to create panic by informing the public about Zika (11).

Communicating with the WHO

According to the IHR (2005) (15), member states such as India are obliged to notify the WHO of PHEIC cases within 24 hours of confirmation. Variances in the compliance of IHR (2005) by member states are normally attributed to surveillance-related resource constraints among other, more strategic reasons. India's surveillance system had however confirmed the cases. The authorities cited WHO's declassification of Zika as a PHEIC (16) on November 18 – days after the first case was found positive for Zika – to explain non-compliance with the IHR's 24-hour deadline. WHO officials contradicted the government's assertions, pointing instead to the government's responsibility to report cases as these pertained to epidemic-prone diseases. These divergent perspectives evoke questions about the ambiguities created by Annex 2 (the decision instrument) (15) to the IHR which allows governments' interpretation of the listed criteria to be driven by strategic priorities, and mechanisms that hold member states accountable for non-compliance if reasons for doing so are not resource-related. More importantly, India, as an emerging economic behemoth, could have utilised this opportunity to demonstrate responsible, compliant behaviour to its Asian neighbours and the international community at large. Instead, they invited criticism for imperilling their neighbours and international travellers, risked international goodwill with potential implications for tourism within the country, and undermined their ability to wield soft power outside of their shores.

Risk communication during high hazard and low outrage

The onus of managing infectious disease events in India is shared by the Centre and the States, a federal framework that commands constant coordination and communication between agencies at both these levels. Based on the Zika ethics consultation between the Pan American Health Organization (PAHO) and the WHO (17), the Indian public health policy establishment's actions have triggered at least three ethical concerns by keeping the public, the media, and local civic officials in the dark: (i) not acknowledging the centrality of pregnant women to Zika efforts by disseminating adequate and timely information about its risks, so as to enable them to exercise appropriate choices during pregnancy. This becomes particularly

relevant as anxieties are bound to rise among pregnant women since news of the Zika cases became public; (ii) 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 (iii) questionable ethical practices while conducting surveillance-related activities, such as obtaining additional samples for Zika without informing the public about the reasons for doing so (10).

At a combined level, these concerns refer to a risk communication challenge that confronts health policymakers in similar situations: what is the appropriate course of action when the risk is high and public outrage (or concern) is low? To deconstruct this question, it is important to establish that its two primary conditions, *high hazard* and *low outrage* are met. Hazard is defined as the magnitude and probability of undesirable outcomes (in this case, being infected with the Zika virus), while outrage can be simply understood as the level of public concern.

Even though, the small number of three cases would lead us to believe otherwise, a 2016 analysis of travel patterns and resident populations in Zika transmission areas by Bogoch and colleagues (18) determined that India along with the Philippines, Indonesia, Nigeria, Vietnam, Pakistan and Bangladesh, faced a high risk of local transmissibility of Zika leading to a major impact on population health. Among the main contributing factors is *Aedes Aegypti*, the Zika-transmitting vector that also causes thousands of dengue-related deaths, a public health threat that India has thus far unsuccessfully combated. The magnitude of the Zika threat led Indian public health experts to call for strengthening surveillance capacity and increasing public awareness through robust risk communication preparedness (19, 20). In terms of outrage, no published evidence documenting Zika-related fears or concerns among the Indian public is available, which, of course, does not imply that Zika was absent from public consciousness. In the absence of such data, we looked at social media to provide a reasonable, though limited insight into the public's interest in the issue¹. Our analysis of Facebook and Twitter data presented in Table 1 found limited public response (in terms of shares and likes) to Zika-related tweets and Facebook posts by India's leading health policymakers, demonstrating low levels of interest; a possible indication of low levels of concern.

Communication challenges in high risk, low outrage contexts

Risk communication scholars have long acknowledged the communication and ethical challenges during high-risk, low-outrage situations, a scenario originally characterised by Peter Sandman who formulated risk as a function of hazard and outrage (21); and whose work informs the government's risk communication plan. In such a scenario,

Table 1: Comparison of public response to social media outreach for Zika and dengue by Ministries and Ministers of Health at the Centre and Gujarat State

	Total Means		Zika Means		Dengue Means	
	Prep	Resp	Prep	Resp	Prep	Resp
<i>Favourites (Twitter)</i>						
MoHFW-C	32.44	36.79	14.00	0.00	17.97	44.19
JPN	93.64	75.24	35.40	80.00	146.67	64.90
MoHFW-G	0.00	0.19	0.00	0.00	0.00	0.00
SC	73.04	149.79	0.00	0.00	0.00	0.00
<i>Retweets (Twitter)</i>						
MoHFW-C	29.09	75.06	15.00	19.00	21.74	41.74
JPN	66.15	353.65	39.20	75.00	136.28	72.20
MoHFW-G	72.00	118.94	0.00	81.00	0.00	0.00
SC	353.30	705.10	0.00	81.00	0.00	0.00
<i>Likes (Facebook)</i>						
JPN	975.27	1304.53	156.00	417.00	585.00	1203.25
SC	1245.04	2745.87	0.00	682.00	0.00	0.00
<i>Comments (Facebook)</i>						
JPN	33.39	43.55	10.00	12.00	19.33	28.75
SC	49.05	78.95	0.00	27.00	0.00	0.00

Key: MoHFW-C: Union Ministry of Health and Family Welfare
 MoHFW-G: Gujarat state's Ministry of Health and Family Welfare Jagat
 JPN: Jagat Prakash Nadda, Union Minister of Health
 SC: Shankar Chaudhary Gujarat's Minister of Health

Sandman recommends "precaution advocacy", which involves communicating to arouse a sense of urgency in the public and mobilising them into taking preventive action. While lauding the US Centers for Disease Control and Prevention (CDC) for expertly clarifying uncertainties during the 2009 H1N1 pandemic, Sandman highlighted their main shortcoming: the CDC appealed to the public to maintain public hygiene without providing them specific actions or tasks to undertake (22).

While communicating risks during infectious disease events such as Zika, Sandman advises policymakers not to over-reassure the public, as it "can lead to anger and skepticism as well, and to loss of essential credibility if the truth turns out more serious than predicted" (23). To put Sandman's forewarning into context, repeated reassurances by national and state-level officials in India that there was no need to panic and that the situation was under control could have backfired if the situation had swelled into a major outbreak. The subsequent questioning of those in authority and identifying actors to attribute the blame – natural public responses during epidemics – might have eventually eroded public trust, widely acknowledged as the key determinant of the effectiveness of risk communication efforts (24, 25).

In summary, the government should have taken the lead role

in explaining the threat of Zika to the public based on the global situation and clarified the uncertainty surrounding the extent to which it will affect the Indian population. They should have recommended specific actions for the public to undertake to protect themselves, and provided frequent updates of the situation even if few cases were found. These measures should have been implemented through a specialised risk communication team with a dedicated, trusted and trained spokesperson and involved formal engagement with the news media. The efforts should have been underpinned by extensive risk communication preparedness efforts at the central, state, and district levels, specifying communication strategies for communities, and identified key actors who would be involved in responding if Zika cases were to be found: considerations whose importance increases given the wide variances in cultural constructions of disease, media habits, and health-seeking behaviours from state to state.

India's National Risk Communication Plan

The National Risk Communication Plan (NRCP) (26) drafted by the National Centre for Disease Control (NCDC) offered recommendations similar to the strategy described above. Tellingly, none of these recommendations appear to have been implemented. One such recommendation is Annexure 3B (p 41) which discusses the challenges with communicating uncertain risks such as Zika's causative links with microcephaly, and states: "Insofar as possible, disseminating this information before actual cases are diagnosed will help mitigate initial concerns." With no evidence about Zika awareness campaigns in the preparedness phase, health officials were quoted saying that they consciously chose not to inform the public despite being aware of the cases - "We thought there is no need to create a hue and cry or create a situation where people start panicking." (8).

The most obvious rationale for this gap between planning and execution is that the NRCP provides a generic and rather theoretical overview of risk communication principles and practices as opposed to providing specific, clear and actionable recommendations. In fact, some portions of the document present worrisome, simplistic generalisations. For instance, section 1.3.1.1 suggests the "silver lining" in a high-hazard low-outrage scenario being: "there is little need to listen, or to address audience concerns, reservations, or objections; this audience has few if any." One of the possible drivers of low outrage among the public could be apathy, the type of indifference that might present a formidable barrier to future communication interventions. By consequence, it is important to identify psychological drivers of apathy such as lack of political trust, ignorance about Zika, or a possibly misplaced sense of control over the situation. These drivers help to develop communication strategies that can effectively infuse a sense of urgency in the population without causing

anxiety (27). Essentially, the NRCP provides minimal nuance about the specific challenges of, or recommendations for, risk communication in the demographically and culturally diverse Indian context beyond a clear articulation of the country's risk communication structures.

The Integrated Disease Surveillance Program (IDSP)

The failure to update the Zika cases on the IDSP website (<http://idsp.nic.in>) continues to be similarly puzzling. Launched in 2004, the IDSP was conceived to facilitate timely detection and reporting of infectious disease outbreaks. Zika updates failing to appear on the publicly available disease maps through the IDSP website have however raised two concerns pertinent to this effort. First, if the IDSP portal is intended to disseminate information publicly, providing incomplete or inconsistent information – with some diseases reported and others not, defeats the mandate of the programme. Second, the IDSP established a Media Scanning and Verification Cell (MSVC)(28) in 2008 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 launched elsewhere(29). 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. Essentially, if the media fails to report disease cases on account being left uninformed by public health agencies, the missing reports will adversely affect the reliability of digital disease detection initiatives to capture and visually portray public health events through disease maps. Also, trusting the media to detect health events but being unwilling to trust them as allies in the dissemination process reflects a strategic equivocation in terms of engaging them as partners in preparedness and response efforts.

Conclusions

Risk communication during infectious disease events is a complex, tricky challenge and, in that spirit, the government's approach can be rationalised along three lines. The popular perception of Zika as a threat to pregnant women, 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 childbirths annually. Media sensationalism combined with a haphazard uncoordinated risk communication response could have led to widespread hysteria as witnessed during the 2009 H1N1 pandemic. Lastly, three isolated cases posed a seemingly minimal threat and the surveillance campaigns revealed no clusters, and hence did not qualify as an "outbreak". But in adopting a passive and reactive approach multiple health officials proffered the "no need to panic" phrase, an approach widely established by risk communication experts as inappropriate and counter-productive. In fact, people tend to panic especially when they are advised not to. Such an approach left the journalistic community – who

should have been proactively engaged – speculating on strategic and political motives behind the lack of transparent communication, even drawing critical analogies to China's withholding news of the 2003 SARS outbreak (7). Similarly, the public were left wondering if more cases remained to be revealed as experts lamented the public health establishment's lackadaisical approach.

Though the government can use the benefit of hindsight to claim that they successfully controlled the situation, it can be safely argued that India dodged a bullet. While the timely intensification of surveillance activities must be rightfully recognised, the risk communication surrounding the event leaves substantial room for improvement across three fundamental areas.

Recommendations

First, the NRCP might acknowledge risk communication as an important pillar in the country's infectious disease strategies. But, its relevance can only be established if it manages to blend the vast reserves of West-centric scientific evidence with local thinking and insights to develop recommendations and action plans tailored specifically to the Indian context. Second, it is the public health establishment's responsibility to develop public trust through an ecosystem of transparency and knowledge based on an integrated communications approach. For instance, the ICMR, NCDC, IDSP all disseminate Zika-related fact sheets and reports on their respective websites, but it is unclear which of their websites must serve as a central portal for the public to access. It is worthwhile learning from the strategies adopted by the US CDC and Singapore's National Environmental Agency to examine whether some of these models could be adapted and tested in India. Once developed, these initiatives should not be restricted to providing key information such as situation updates, but the learnings from the establishment's efforts need to be systematically documented and disseminated through various media platforms that can be easily accessed by the public, public health practitioners and policymakers elsewhere, and by the scientific community. Lastly, the Zika situation, and many outbreaks preceding it (such as H1N1), repeatedly point to the urgent need to address the lacuna in risk communication research in India. At the micro level, this will mean developing a dynamic repository of scientific evidence chronicling the history of risk communication in India, identifying effective and not-so-effective communication interventions, an in-depth understanding of India's diverse audiences, their communication needs and preferences and psycho-behavioural responses to different kinds of communication stimuli. This effort would benefit through interdisciplinary collaborations involving researchers from communication studies, public health, and behavioural science, and inter-sectoral collaborations between researchers, practitioners and policymakers. At the meso level, academic investments in building scientific capacity (technical, human, and structural)

in risk communication research will be critical and can benefit from collaborative arrangements between Indian and international researchers. Such initiatives will contribute towards developing future generations of risk communicators who can not only effectively manage public health crises, but also engage with public health practitioners and policymakers on an ongoing basis to help translate research into policy. At the macro level, political support to create enabling structures such as research funding mechanisms devoted to risk communication and establishing centers of excellence can strengthen interdisciplinary thinking in this area, and help contribute India-specific evidence in risk communication and perception research to the growing, global state of science.

Notes

¹ 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.

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