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## Zika Virus and Global Health Security

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## Zika virus and global health security

A recent poll found that 77% of the US public is not seriously concerned about Zika virus.<sup>1</sup> Congress went on summer recess without authorising President Obama's US\$1.8 billion emergency Zika appropriation request. By Aug 30, 2016, the US Centers for Disease Control and Prevention had spent \$194 million of the \$222 million allocated to respond to the Zika virus outbreak.<sup>2</sup> WHO's \$122 million strategic plan for response, to be implemented until December, 2017, grossly underestimates the resources required. Still worse, WHO has raised only \$14.2 million in direct contributions for a worldwide response.<sup>3</sup> WHO's emergency contingency fund has a meagre balance of \$31.5 million, spread thinly among ongoing health threats.<sup>4</sup> Consequences of fiscal apathy can be measured in lives lost and long-term disabilities. Therefore, prevention of Zika virus infection is a matter of global health security.

A major epidemic of Zika virus infection is ongoing in Latin America and the Caribbean including Puerto Rico, a US territory. Thousands of cases of Zika virus infection in continental USA are an early warning. Local mosquito transmissions in multiple communities in Florida are just a few of many potential hot zones in a large swathe of the south and Gulf coasts.

The epidemiological pattern in the USA will probably mirror inequalities seen in the region, with low-income pregnant women bearing disproportionate burdens, living without screens or air conditioning in trash-laden, humid neighbourhoods. Health authorities have advised young women to delay pregnancy. Impoverished women, however, do not have reliable access to contraception, are subjected to acts of sexual violence, and cannot afford testing or basic health services. Many Latin American countries have highly restrictive abortion laws. Additionally, US jurisdictions often ban late-term abortion even if the fetus has substantial impairments.

The unequal distribution of Zika virus infections could be exacerbated in the USA, with nearly half of the 5.75 million pregnancies a year unintended. Zika-affected states have among the highest rates of unintended pregnancy and poverty, coupled with miniscule resources for mosquito abatement. Health coverage for millions of undocumented immigrants is denied and many governors refuse to expand Medicaid (health insurance for the poor) under the Affordable

Care Act. These policies make reproductive, maternal, and health services unaffordable or inaccessible. Poor women often have long waits for Zika virus testing, maternal, and other health services.

Up to 6% of Zika-virus-infected pregnant women will miscarry or have stillborn deliveries.<sup>5</sup> Actual rates might be even higher. Surviving infants have as much as a 13% chance of Zika-virus-related microcephaly and associated mental, ocular, and hearing impairments.<sup>6</sup> Recent studies suggest that Zika virus infection can cause severe joint damage and genitourinary, cardiac, and digestive complications among affected infants.<sup>7</sup> Many could be impaired in less obvious ways, with disabilities appearing later in a child's development.

Continued global transmission foretells the rise of a so-called Zika generation.<sup>8</sup> Zika virus's impacts are already seen in large population centres in Brazil, Colombia, Mexico, and Peru. The spectre of a Zika generation is reminiscent of thalidomide-affected children in Europe during the 1960s. The social, political, and economic implications represent a major global public health failure.

The Zika virus outbreak is an unprecedented health crisis affecting more than 65 countries with staggering societal costs. Accurate estimates of the outbreak's global fiscal impacts are not possible until the epidemic's trajectory becomes clearer.<sup>9</sup> The World Bank estimated 2016 Zika-related economic losses in Latin America alone to be \$3.5 billion,<sup>10</sup> but authorised only \$150 million in offsetting loans.<sup>11</sup> Its projection presumes coordinated global efforts will limit the impact of the outbreak, which have yet to materialise.<sup>12</sup>

Health care for Zika-infected infants over their lifetimes will exceed hundreds of billions of dollars.<sup>13</sup> Large insurers are bracing for new waves of Zika-related claims.<sup>14</sup> Untold costs and hardships for families of disabled children defy accurate measurement. Beyond direct costs, tourism and travel industries report multibillion-dollar economic losses across the Americas, including Puerto Rico and Florida.<sup>15</sup> Employers are absorbing expenses to relocate employees of reproductive age.<sup>16</sup> If fears associated with Zika virus lower pregnancy rates, they could diminish productivity and economic growth.

The west African Ebola virus epidemic showed that collective costs could result in reduced trade and political instability—similar to the HIV/AIDS epidemic

in sub-Saharan Africa. In 2014, President Obama spearheaded a UN Security Council resolution calling the Ebola virus outbreak a threat to international peace and security, and sent US military to Liberia to combat it. In March, 2016, WHO Director-General Margaret Chan remarked, “the world remains woefully ill-prepared to respond to outbreaks that are both severe and sustained...[due in part to] complacency”.<sup>17</sup>

Since early January, 2016, President Obama has been meeting with national security advisors to strategise on Zika virus. In February, US Health Secretary Sylvia Burwell declared, that “Zika has a significant potential to...affect national security or the health and security of US citizens”. US Vice Presidential candidate Tim Kaine classified the Zika virus outbreak a “national security issue” in early July. Other countries in the region (Brazil, Ecuador, and Cuba) have deployed the military to fight the outbreak.

Characterising the rise in Zika virus infections as a national and global security threat could galvanise governments to devote greater resources. Fast moving epidemics have consequences similar to humanitarian crises, climate change, and war. Yet, the international community downplays epidemic threats and underinvests. This kind of apathy and short-sightedness must change.

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## Low risk of a sexually-transmitted Zika virus outbreak

Although Zika virus is a mosquito-borne flavivirus, reports have begun to emerge of its possible sexual transmission. Isolation of infectious virus from semen<sup>1</sup> lends credibility to these reports, and there is now concern that this alternative transmission route will expand the at-risk population beyond the tropical confines of the mosquito vectors and the current outbreak.<sup>2</sup> Whether

Zika virus can have sustained transmission in the absence of a vector population remains unknown.

The evidence base for assessing risk of Zika virus sexual transmission is limited but burgeoning; all but one case detailed in the literature were reported this year.<sup>3-9</sup> All but one sexually transmitted case originated from men (only one asymptomatic index case has been reported),