

To The Subcommittee on Oversight and Investigation:

I have reviewed the additional questions by the esteemed members of the Subcommittee on Oversight and Investigations and will address each one in the following paragraph. I would like to thank you again for the opportunity to testify regarding Zika virus infection and the medical, economic and social effects on reproductive age women.

The Honorable Tim Murphy: Following our testimony on March 2nd, many things have changed regarding Zika virus infection, as you would expect with an evolving epidemic. Many of these concerns were raised at the Zika Action Plan Summit in Atlanta and are available in the meeting summary. Specific areas affecting reproductive age women that need to be mentioned are as follows and the federal response for these mainly focuses on making monies available to complete the needed research.

1. The causal link of Zika infection and the abnormal fetal findings reported in the last several months is now established. The confirmation of the strong association should provide legislators with enough evidence to move forward with funding to further investigate Zika infection in pregnant women with regards to modifying factors such as gestational age of the pregnancy at infection. Prevention strategies including vaccination development is also vital to the global management of this disease. Finally, as we understand better the pathophysiology of fetal Zika infection, therapeutic measures can be developed and tested to try and prevent or at least attenuate the fetal response.
2. Sexual transmission is also now established so focus should be on improving not just the current tests but the availability of the tests to allow for screening of males that have traveled, regardless of symptoms. Many women interested in becoming pregnant or who are already pregnant are now not traveling – their male partners however are traveling and better ascertainment of the risks of transmission to their partners is needed to help control the spread of this disease. This is particularly true in developed nations such as the U.S. where mosquito control is better and we will have a higher proportion of infections occurring from the sexual transmission route.
3. Reproductive endocrinologists focusing on Assisted Reproductive Techniques for infertility management are expressing concerns regarding the safety of egg and sperm donation – guidelines are now in place regarding screening and donation exclusion criteria but there is a paucity of research to inform these guidelines.

The Honorable Marsha Blackburn: There is significant concern among the reproductive age population regarding travel to Brazil, both for and outside the 2016 summer Olympics. Brazil is working with several international organizations to control the mosquito population, including assuring a safe living facility for the athletes and aggressive mosquito spraying. It is a daunting task to significantly improve mosquito

control secondary to the poverty and overcrowding in many of the areas in the large cities. As to genetically modified mosquitos, I will defer to my colleagues as I am not current on the literature.

The Honorable Gus Bilirakis: I share your concern about ZIKV and fetal anomalies and the CDC has now come out confirming the link as discussed above. I address subpoint (a) above but subpoint (b) concerns everyone working on the front line, seeing patients and counseling those women regarding risks. We just do not know the long term consequences regarding the infection. We have good data about microcephaly and long term care and have been using that as a springboard for counseling. That being said, fetal Zika infection is not just microcephaly but a whole range of neural abnormalities and that makes counseling more difficult. The other huge gap in our knowledge relates to those infants born to infected mothers who do not have obvious abnormalities. "Will these infants develop intellectual disabilities or developmental delay secondary to viral effects that did not result in microcephaly or another obvious abnormality?" is a question that we cannot yet answer. The infants born to Zika affected mothers are being followed-up so hopefully in a few years we will have an answer to that question.

Sincerely,

A handwritten signature in black ink, appearing to read 'JS Sheffield', with a stylized flourish at the end.

Jeanne S. Sheffield, M.D.
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Professor, Gynecology and Obstetrics