Testimony on Interim Charge concerning Infectious Disease
Public Health Committee of the Texas House of Representatives
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What Texas needs to adequately address emerging and neglected diseases

In 2015, this committee heard my testimony on House Bill 2055, introduced by Representative Sarah Davis. Thanks to your support, this bill passed in the Texas House and Senate and is now law. HB 2055 provided the first step for Texas to begin to properly address emerging and neglected diseases. It mandates that the Department of State Health Services implement sentinel surveillance for these diseases. The new law also ensures that physicians have the knowledge necessary to diagnose and treat patients. As the first state in the U.S. to enact such legislation, Texas is setting the bar for addressing these important public health issues at the state level.

A sentinel surveillance system will utilize a subset of healthcare workers within the state, and focus the resources necessary to conduct active disease surveillance on these selected health workers. For emerging and neglected diseases in particular, sentinel surveillance is critical. Because we don’t currently have the robust infrastructure and technology necessary to easily identify these diseases, it is impractical to implement traditional active surveillance that would involve all healthcare workers. For the same reasons, it would not make sense to implement passive surveillance measures that provide little resources or incentives for healthcare workers to report these diseases. Sentinel surveillance is a cost-effective approach to protecting public health.

Once this sentinel surveillance system is in place, we will be able to gather better quality data on the prevalence of these diseases throughout the state. In addition, we will be able to detect an outbreak occurring before it reaches a dangerous epidemic status. This data will allow the scientific community and healthcare professionals to prioritize resources for disease prevention, diagnosis and treatment. It will also be useful when setting research priorities as for many of these conditions the only diagnostic and treatment options are subpar, expensive, toxic, or difficult to access, if they exist at all.
When we think about disease control, having reliable incidence and prevalence data is certainly an important factor. Another thing we often consider is what is the most effective way to address human disease in terms of preserving human health in a cost-effective manner. In most cases, the most cost-effective intervention is vaccination. Because of vaccination we were able to eradicate small pox in all areas of the world, a diseases that was previously one of the most common and devastating human diseases. However, most emerging and neglected diseases have no vaccines.

This represents a public health opportunity. Texas has some of the best research capabilities in the world, including exceptional expertise in emerging and neglected diseases. However, these talented researchers need resources to develop the vaccines that will ultimately protect Texans and many others from these diseases. This is where you, as our policymakers have the opportunity to find ways to ensure that these resources are made available.

In a way, what happened with Ebola in 2014-2015 is case in point. The Galveston National Laboratory has some of the top Ebola experts in the world who contributed to the technology necessary to develop and Ebola vaccine. However, the academic scientists lacked the resources necessary to produce the vaccine and follow it through clinical trials. Typically, this is left up to pharmaceutical companies. However, pharmaceutical companies function using a profit-based business model. And for Ebola and other neglected diseases, there is little to no financial incentive to develop products, and so the technology sits on the shelf for years. Until a threat to the U.S. was perceived, there was a lack of resources and incentives to produce a vaccine. By the time these resources were made available, it was too late to have a significant impact.

I say perceived threat, because as many of you already know, it was highly unlikely for Ebola to establish a widespread outbreak in the U.S. the way it did in West Africa. The reason is because we, and other developed nations, have well-developed health systems. And for a disease that is (contrary to popular belief) not very contagious and hard to transmit, like Ebola, we have the ability to contain cases that occur and adequately protect the public.

However, we have other concerns that are real and are here now. Zika virus, for example, is one of many public health threats that we should not ignore, especially in Texas. Zika must be taken seriously. Zika is spread by the *Aedes aegypti* and *Aedes albopictus* mosquitos, which enjoy an established foothold in the Southern U.S. I am sure that each one of us has experienced those warm, humid, Texas days in which the mosquitos are nearly intolerable.

One of the things that is truly scary about the Zika virus, is how little we know about it. It has recently been associated with Guillian Barre Syndrome and severe birth defects, including microcephaly (a condition in which the head is abnormally small and can result in severe developmental delays). But we have yet to show how and
why these effects occur, in what frequency they occur, how long the effects last, and a series of other important questions remain unanswered. The reason is because there have been little resources devoted to studying a disease that decades ago seemed to be isolated in Africa. However, the last few years have been like a repeating lesson to us that we cannot separate local public health from global health.

Undoubtedly, the population that will be most affected by Zika are the most vulnerable among us, who are unable to adequately protect themselves from mosquitos. Therefore, in the short-term, mosquito control and increased investment in R&D are necessary to protect the public, until we are able to develop a safe and effective vaccine.

I know that this committee understands and appreciates the significance of these issues because of your support of HB 2055 last session. I hope that the committee will consider the importance of devoting resources toward emerging and neglected disease threats like Zika, dengue, chikungunya, Chagas disease, leishmaniasis, toxoplasmosis, toxocariasis, cysticercosis, echinococcosis, and a variety of other diseases that are difficult to pronounce, but are having negative health and economic consequences on our communities right now.

I look forward to working with you and your staff, as well as the Department of State Health Services, to assist with the implementation of this bill. Thank you for your time. I would be happy to answer any questions you may have.