Distribution of the primary vectors of Zika and West Nile viruses in residential backyards across San Antonio, Texas: New information and challenges in a city without vector control

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San Antonio, Texas is the seventh largest city in the United States and is located approximately 100 miles from the Mexico border. Unlike other large cities in Texas, San Antonio has no mosquito control or surveillance district. In fact, much of what is known about mosquito distribution in this area has been related to military installations rather than areas where most people come in contact with mosquitoes. With local transmission of Zika, West Nile, Chikungunya, and Dengue all recorded in Texas, our ability to monitor and determine the distribution of the vectors of these viruses in areas where humans are most likely to be exposed to mosquitoes has become even more important. In the summers of 2015 and 2016 we conducted two systematic surveillance studies in residential backyards across San Antonio. Our goal was to provide missing and relevant information on mosquito species distribution in this important gateway city. In short, we found the most prevalent species in residential areas are the primary arbovirus vectors: *Aedes aegypti*, *Aedes albopictus*, and *Culex quinquefasciatus*. In this presentation I will discuss how the two studies differed and how those differences impact our ability to interpret potential risk of disease transmission in residential areas. I will also discuss the temporal and spatial distribution of these and other species and how factors such as interspecific competition, location and socioeconomic status of neighborhoods, and individual home maintenance can influence mosquito distribution. Finally, I will comment on the role that my lab at Texas A&M-San Antonio has played in city-wide preparedness for a response to local Zika transmission.