

# Assessing Nurse Practitioner Knowledge of Zika Virus

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## ABSTRACT

Zika virus infection is a rapidly evolving disease currently spreading in the Americas and the Caribbean. It is important to assess the current level of Zika virus infection knowledge in nurse practitioners (NPs) to identify gaps that may impact patient and community health. The aim of this study was to assess the level of NP knowledge about Zika virus infection using a 13-question survey that was created and administered via paper/pencil to a convenience sample of 559 NPs. Variables included age of NP, years in NP practice, territory of NP practice, and type of NP specialty. Additional educational interventions are needed to address the knowledge deficits identified.

**Keywords:** knowledge, nurse practitioner, Zika

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## INTRODUCTION

Zika virus infection is a rapidly evolving disease currently spreading in the continental United States and in US territories, the Caribbean, North America, Central America, and South America. The current outbreak has been in the news regularly since the Pan American Health Organization identified the first case in May 2015.<sup>1</sup> The US Centers for Disease Control and Prevention (CDC) predicted that the high volume of travel to Brazil for the Olympics would increase Zika distribution worldwide, with the potential to increase the regions of spread in the current outbreak by 19 countries.<sup>2</sup> With potential expansion of regions with infection, native spread identified in Florida, and the rainy season peaking in Puerto Rico, it is important to assess the current level of knowledge in nurse practitioners (NPs) to identify gaps that may impact patient and community health.<sup>3</sup> The purpose of this study was to assess the current level of NP knowledge about Zika virus infection to allow for informed creation of educational offerings to increase the accuracy and safety of patient care during this global health crisis.

## BACKGROUND

The need for NPs practicing throughout the US to be able to identify key components of prevention and diagnosis is accentuated by the volume of patients exposed to Zika in Puerto Rico and the native spread of the disease in Florida.<sup>3</sup> As changes in the patterns of disease and distribution are observed, recommendations from the CDC and World Health Organization (WHO) are modified to reflect the most current epidemiologic data available. These ongoing, necessary modifications in recommendations necessitate that health care providers remain attentive to changes that will impact patient care. A literature search of PubMed for scholarly articles pertaining to Zika showed that 736 scholarly articles had been published between June 2015 and June 2016. The articles covered various aspects of Zika virus infection, with only 3 focused on evaluating the knowledge level of any health care provider. The health care worker knowledge studies surveyed dental practitioners in India, and doctors, nurses, and medical students in Colombia. No articles addressed NP knowledge.<sup>4-6</sup>

With the propensity of media coverage and scholarly studies, NPs should have been exposed to the information needed to achieve a requisite level of knowledge of Zika. To determine what level of knowledge of Zika virus infection NPs demonstrate, a 13-question survey was created. The survey was

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designed to explore the various areas of knowledge about the current outbreak and recommendations to determine whether age, type of specialty, years in practice, or locale of practice would have any impact on NPs' level of knowledge.

### Research Questions

The following research questions were addressed by this survey:

1. What is the current level of knowledge of Zika virus infection in this NP sample?
2. What areas of knowledge deficit of Zika virus infection exist in this NP sample?
3. Are age of the NP, years in practice, location of practice, and/or NP specialty related to the level of knowledge of Zika virus infection?
4. What specific areas of knowledge deficit of Zika virus infection are related to age of the NP, years in practice, location of practice, and/or NP specialty?

## METHODS

### Instrument

In June 2016, the author developed a 13-question multiple-choice survey covering the following aspects of Zika: epidemiology; diagnosis; complications; transmission; and patient education. The questions were created utilizing the CDC guidelines as of June 10, 2016. The survey was then distributed to a panel of 15 experts to determine face validity. These specialists included NPs in the fields of travelers' health, adult gerontology primary care, adult gerontology acute care, family, pediatrics, and psychiatric mental health. Phrasing of questions and responses was modified in response to feedback from the expert panel. The final survey was submitted along with all research documents to the institutional review board of Saint Louis University for approval before distribution of the survey.

### Sample

The survey was distributed in paper form at a national NP conference from a booth dedicated to travelers' health. A convenience sample of NPs attending the conference was obtained. As NPs approached the booth, they were asked to participate in a survey about Zika. Of the approximately 5,000 conference participants, 559 completed the paper-and-pencil

survey. The geographic distribution included NPs from all 50 states, Canada, Spain, the United Kingdom, and the United Arab Emirates.

### Procedure

If the individuals agreed to participate, they were provided with a clipboard containing a formal recruitment letter and the survey. Upon completion of the survey, participants were provided with a link to a website that contained the current Zika recommendations and additional educational resources. Participants were also given an opportunity to enter their name and contact information into a drawing for a \$50 gift card. The information for the drawing was collected separately from the survey to ensure that participants' personal information was not attached to the survey content or completion in any way. Participants who declined participation in the survey were still offered the opportunity to enter the drawing for the gift card.

### Data Analysis

Data from the 559 surveys were transferred from the questionnaires into MS Excel (2011) spreadsheets and double entered to ensure data entry accuracy. Forty-nine surveys were not included in the analysis because of a missing component of the survey or a geographic practice region outside of the United States. A total of 510 surveys were included in the analysis. The spreadsheet data were imported into SPSS Statistics (SPSS version 23; IBM SPSS, Inc., Armonk, NY) for analysis.

The responses to each question were evaluated and compared by specialty, age, years in practice, and geographic location of practice to determine whether there were any significant differences. Location was collected by state of practice and then compared as states that were highly impacted by Zika compared with lesser impacted states. As of June 2016, the CDC case counts documented 2 states with a total of 756 persons, representing 46% of total Zika cases in the US. New York (449/27%) and Florida (307/19%) currently have the highest percentages of patients with Zika when compared with total cases nationwide.<sup>1</sup> NPs who listed these 2 highly impacted states as their geographic practice area were classified as highly impacted for the purpose of analysis. NPs

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