

# Zika Virus Persistence in Body Fluids

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## BACKGROUND

- Most Zika virus (ZIKV) infections are transmitted by mosquitoes
- Mother-to-fetus, occupational, and sexual transmission have also been reported
- In semen, ZIKV has been detected up to 188 days after symptom onset
- The frequency of ZIKV RNA detection in various body fluids and the length of time that it remains detectable are not well understood

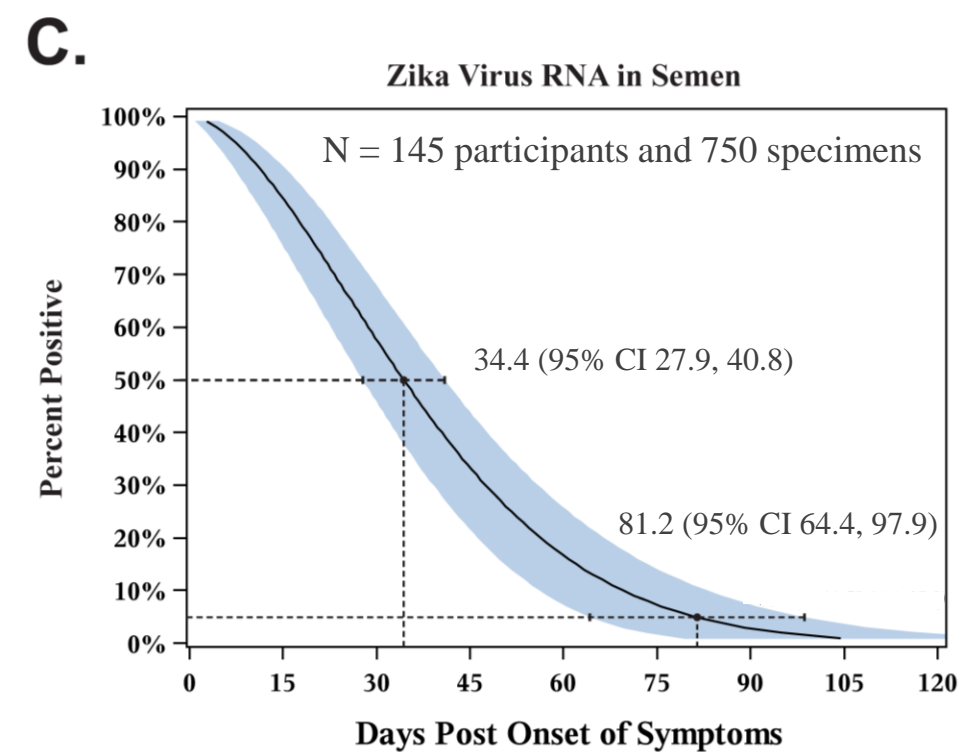
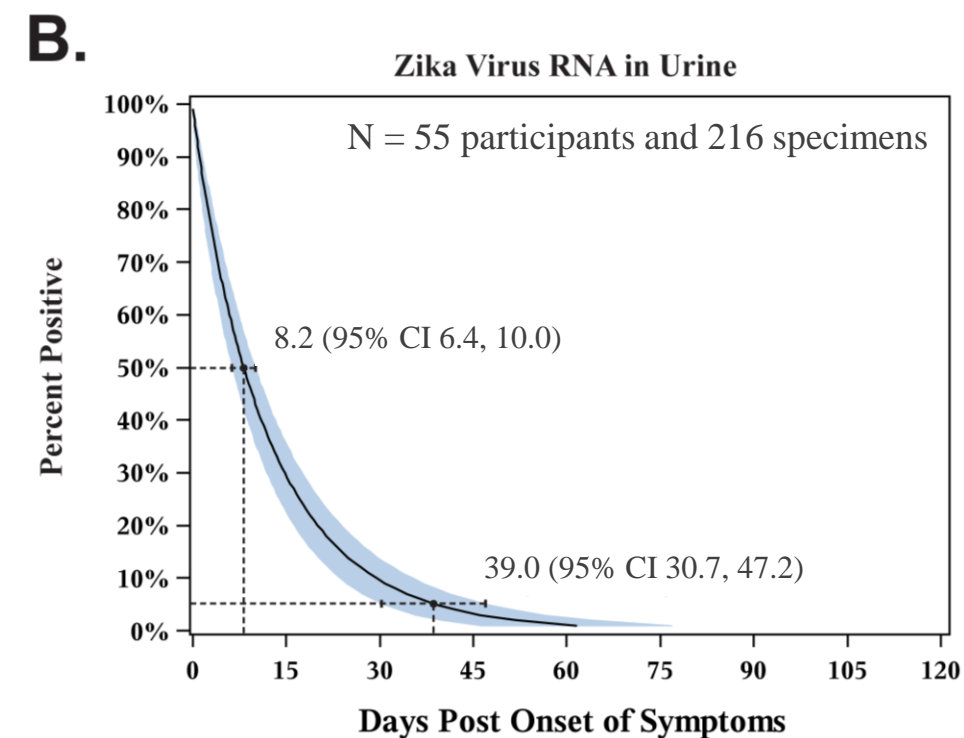
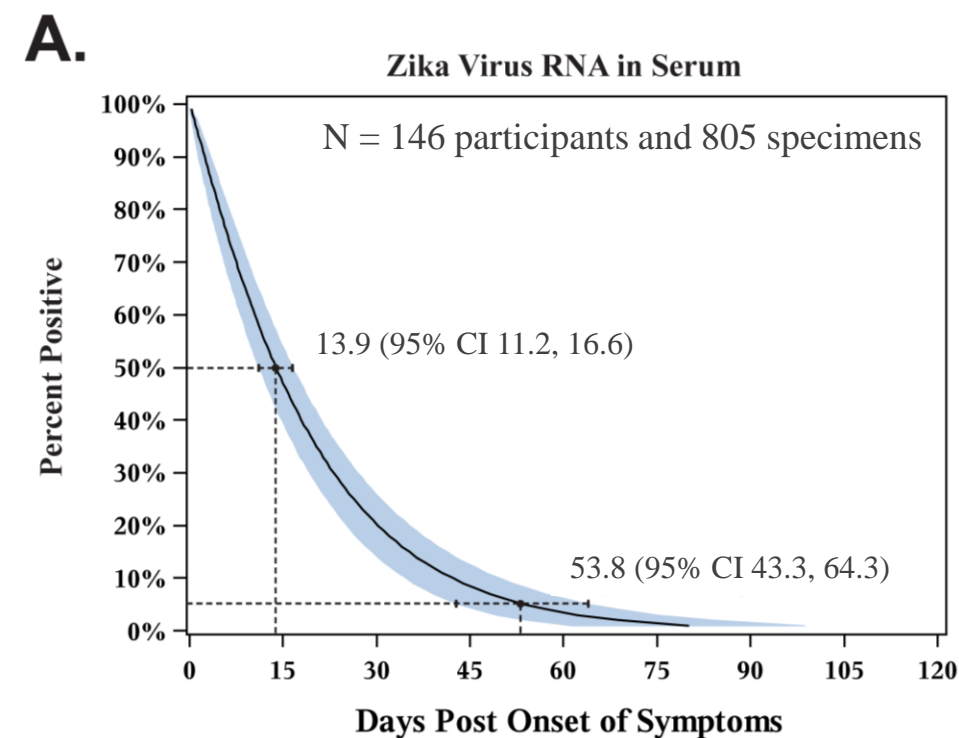
## OBJECTIVE

- Estimate the presence and duration of detection of ZIKV RNA in body fluids including blood, semen or vaginal secretions, urine, and saliva among people positive for ZIKV by PCR

## METHODS

- The Zika Virus Persistence (ZiPer) study is a prospective cohort study that started in May 2016
- Patients with fever, rash, conjunctivitis, or arthralgia seeking care at an emergency room and outpatient clinic in Ponce, Puerto Rico, had their urine and blood tested for multiple etiologies, including ZIKV, as part of ongoing surveillance
- Those positive (+) for ZIKV by Real Time RT-PCR (index patients) were offered enrollment in ZiPer
- At enrollment and at all subsequent visits, participants provided serum, urine, saliva, and for adults, semen or vaginal swabs
- Each index patient's household members were invited to participate and if ZIKV RNA +, were enrolled in the cohort
- Specimens were collected weekly for 1 month, then at 2, 4, and 6 months for those who were no longer + at week 4, and every 2 weeks for those who were still + at week 4
- Specimens were tested with the CDC TrioPlex RT-PCR assay
- Weibull regression models estimated median and 95<sup>th</sup> percentile time to loss of RNA detection since symptom onset
- We present interim analysis results: n = 150 through 9/2016

## RESULTS



- 127 index patients and 23 household contacts (19 symptomatic)
  - Asymptomatic contacts excluded from models
- 56% male and 89% ≥ 18 years
- 92% diagnosed within 7 days post onset of symptoms
- 10% had RNA detected in urine but not in serum

### Detection of ZIKV RNA in Symptomatic Participants number/total number (percent)

Serum	128 / 146	(87.7)
Urine	90 / 145	(62.1)
Semen	31 / 55	(56.4)
Saliva	13 / 143	(9.1)
Vaginal swab	1 / 49	(2.0)

## LIMITATIONS

- Participants positive for ZIKV only in IgM were not recruited, which may have biased our sample towards persons who have longer duration of ZIKV RNA detection
- The detection of ZIKV RNA does not necessarily correlate with having infectious virus, need virus isolation assays
- For the models, we assumed that all participants had ZIKV RNA in all specimens at symptom onset, which resulted in shorter duration estimates than analyses limited to participants with detectable ZIKV RNA

## CONCLUSIONS

- We found higher prevalence and longer time to loss of RNA detection in serum vs. urine
- Detection of RNA in semen past 3 months was uncommon
- We found low detection in saliva and vaginal secretions

## IMPLICATIONS

- Data support current recommendations to test paired serum and urine up to 2 weeks, cannot rely on urine testing only
- Data support CDC sexual transmission recommendations for men to use condoms or abstain for at least 6 months
- No clear evidence to change recommendations for healthy reproductive age women to delay pregnancy beyond 8 weeks

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