# P2-L10 Exposure to arboviruses among patients seeking primary health care northern-KwaZulu-Natal, South Africa, April 2018 to February 2020

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Arbovirus seroprevalence of 7.95% for at least one arbovirus type, DENV, USUV and ZIKV respectively was detected amongst participants. Travelling abroad, being older than 39 years and being in particular places were associated with increased arbovirus exposure

#### BACKGROUND

- In KwaZulu-Natal, a province in eastern South Africa that borders Mozambique, testing and diagnostic capacity for arboviruses.
- Awareness of vector ecology and exposure risk is lagging behind that

#### **RESULTS CONTINUED**

**Table 2:**Adjusted seropositivity estimates amongst patients at uMkhanyakude District, KwaZulu-Natal, April 2018 to February 2020 95%

Ν

%

confidence interval

Combined arboviruses(n=1874)

of malaria, a situation that is shared by the entire Sub-Saharan African region.

• The study presented the seropositivity of Zika virus (ZIKV), Dengue virus (DENV), and Usutu virus (USUV) and exposure factors.

#### **METHODS**

- Between April 2018 and February 2020, a clinic-based serolacksquareepidemiological study was conducted in a part of the northern KZN district of Umkhanyakude.
- ELISA was used to measure the DENV, USUV and ZIKV antibodies in recruited patients.
- Seroprevalence was estimated and multivariable logistic regression.



Participants tested and not suggestive to possible exposure	1725	92.04	0.89- 0.95
Participants tested positive for possible exposure to 1 arbovirus	94	5.02	0.03-0.07
Participants tested positive for possible exposure to 2 arboviruse	2.83	0.01-0.05	
Participants tested positive for possible exposure to 3 arboviruses 2		0.11	0.00- 0.01
Overall arboviruses(binary)(n=1874)			
Not suggestive of possible exposure	1725	92.04	.89- 0.94
Suggestive of possible exposure	149	7.95	.056- 0.11



Figure 2: Factors significantly associated with overall arbovirus seropositivity amongst patient at uMkhanyakude District, KwaZulu-Natal, April 2018 to February 2020

**ODDS RATIOS** 

## CONCLUSIONS

- The study showed that the participants had previously been exposed to DENV, USUV and ZIKV arboviruses.
- Traveling outside South Africa increased participants' odds of exposure to arbovirus infections, majority of which were to Mozambique.

Figure 1: Map Umkhanyakude Health District, and clinics Northern KwaZulu-Natal Province, South Africa during April 2018 to February 2020 (adapted from Paweska et al.)

## RESULTS

• The median age and interquartile range of participants was 35 (24-48) years and majority of participants were women (72.61%; (1357/1869).

## RECOMMENDATIONS

- The findings highlight the need for increased awareness of arboviruses as the cause of febrile, rash and other illness patients presenting to clinics.
- Improved surveillance in northern KZN, particularly among those who have recently visited Mozambique.

**Table 1:** Overall crude arbovirus seroprevalence amongst among patients seeking primary health care at uMkhanyakude District, KwaZulu-Natal, South Africa, April 2018 to February 2020

Demographic characteristics	Number of participants tested/enrolled	
	1874	
Health Care facilities(n=1874)		
Ndumo clinic+Mosvold hospital	493	
Bethesda hospital	355	
Makhathini clinic	339	
Mbazwana clinic	292	
Manguzi hospital+Mahlungulu clinic	216	
Mseleni hospital	179	
Travelled internationally in past 30 days	s (n=1857)	
no	1745	
yes	112	

Number of specimen suggestive of possible exposure for ZIKV, p-value **DENV and USUV(%)** 149(7.95)

50(**10.14**)

16(4.51)

31(9.14)

15(5.14)

21(9.72)

16(8.94)

127(7.28)

20(17.86)

0.011

< 0.001

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