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Event: Zika virus infection and probable links to congenital and neurological complications

Notified by: Emerging Infections and Zoonoses (EIZ), Travel and Migrant Health (TMHS), Rare and Imported Pathogens Laboratory (RIPL)

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PHE NIRP Level: NA

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Update to Briefing Note [2015/088](#) published 8 December 2015

Background and Interpretation:

The outbreak of Zika virus (ZIKV) in the Americas continues to expand with eight new countries (Barbados, Ecuador, French Guiana, Guyana, Haiti, Martinique, Puerto Rico and Saint Martin) reporting autochthonous cases since December 2015. This is in addition to the ten countries (Brazil, Colombia, Suriname, Guatemala, El Salvador, Paraguay, Mexico, Venezuela, Panama and Honduras) that have reported outbreaks since May 2015. Further countries in the Americas are likely to be affected in the coming weeks/months. Please refer to the [PHE Zika virus page](#) for information on affected countries.

Probable association of ZIKV infection with congenital microcephaly

In October 2015, the Brazilian Ministry of Health reported an unusual increase in the number of babies born with microcephaly [1] and declared a public health emergency in November 2015. As of 9 January 2016, 3,530 (284/100,000 live births) cases of microcephaly including 46 deaths have been reported across 21 states in Brazil [2] compared to the expected 150-200 cases per year that were reported 2010 - 2014 (5.7/100,000 live births in 2010) [3].

The increase in microcephaly cases started within nine months of the emergence of ZIKV in northern Brazil. The Ministry of Health of Brazil has suggested this increase is associated with the ongoing ZIKV outbreak. There is increasing evidence to support this hypothesis but investigations to establish whether there is a causal relationship continues. The virus has now been demonstrated to cross the placental barrier and has been detected in blood and tissues of seven affected fetus/infants; the mothers of six of these cases presented with symptoms consistent with ZIKV during pregnancy.

An increase in cases of microcephaly has yet to be reported from other countries affected by ZIKV but an increase of central nervous system malformations in fetuses and new-borns was reported in French Polynesia following an epidemic of ZIKV infection. At least 17 such cases were reported in 2014-2015, coinciding with the ZIKV outbreaks on the French Polynesian islands. Four women were tested and had detectable IgG antibodies to flavivirus; further tests are ongoing [3]. Although this evidence does not prove causality, it seems increasingly likely that the increase in microcephaly in Brazil may be associated with the ongoing ZIKV outbreak.

Guillain-Barré Syndrome

A number of countries, including Brazil, French Polynesia and El Salvador have also reported cases of Guillain-Barré Syndrome in individuals with a history of symptoms consistent with ZIKV infection [1].

UK travellers to Central/South America and the Caribbean

Between 2010 and 2014, almost 1.4 million UK residents travelled to South and Central America and the Caribbean on average each year; 25% (335,809) of these were women of childbearing age (16-44 years). Of these, and over the same time period, an average of 25,625 UK resident females aged 16-44 travelled to Brazil each year (25% of the average annual total of 101,680).

The vectors of ZIKV (*Aedes* mosquitoes, predominantly day-biters often found in urban environments) are not present in the UK. To date, four confirmed cases of ZIKV have been reported in UK travellers (one ex Cook Islands in 2014, two at the end of 2015 (one returned from Colombia and the other from Suriname and Guyana [NB. ZIKV had not yet been reported in Guyana at the time] and one in 2016 who returned from Colombia). There is evidence that ZIKV can persist in semen during/after infection. There has only been one documented case of ZIKV transmitted sexually.



Advice to travellers, in particular pregnant women

All travellers to the Americas should seek travel health advice from their GP or a travel clinic well in advance of their trip and consult the National Travel Health Network and Centre (NaTHNaC) website <http://travelhealthpro.org.uk/> for up to date information on current outbreaks and country information.

Travellers to the Americas should follow standard mosquito protection advice [4]. Since the vectors of ZIKV are predominantly day-biters, advice to avoid being bitten during the daytime should be emphasised. Protection against night time biting mosquitoes may also be necessary in areas where malaria is a risk.

Pregnant women, in any trimester, should consider avoiding travel to an area where an active ZIKV outbreak is reported. If travel is unavoidable, or they live in areas where an active ZIKV outbreak is being reported, they should take scrupulous [insect bite avoidance measures](#), during the day and night. They should inform their obstetrician or midwife if they have recently travelled to a country where ZIKV is known to occur.

Women planning to become pregnant should discuss their travel plans with their healthcare provider to assess the risk of infection with ZIKV and receive advice on mosquito bite avoidance measures.

Tailored advice for pregnancy and travel is available at: <http://travelhealthpro.org.uk/pregnancy>

Implications and recommendations for PHE Centres

PHE Centres and Health Protection Teams should be aware of the increase in ZIKV cases in areas where UK residents frequently travel or countries from which people frequently visit the UK and the probable association between ZIKV infection and congenital and neurological complications.

Implications and recommendations for PHE sites and services

In addition to the advice above, infectious disease physicians and microbiologists are advised to consider ZIKV in travellers with a febrile illness returning from regions where ZIKV is known to occur.

Referring diagnostic laboratories should send appropriate samples for testing (**including a full travel and clinical history, with relevant dates**) to the Public Health England, [Rare and Imported Pathogens Laboratory](#).

The [Imported Fever Service](#) can provide advice on the clinical recognition and differential diagnosis for travellers for affected areas who present with fever. The IFS can be reached 24 hours a day on 0844 7788990.

Implications and recommendations for obstetricians and neurologists

Contact has been made with the appropriate professional organisations who have agreed to cascade to their members information on the potential risk of ZIKV and the appropriate investigations to be requested for those with a relevant travel history.

References/ Sources of information

1. Pan American Health Organization. 17 January 2016: Neurological syndrome, congenital malformations, and Zika virus infection. Epidemiological Update. Available at: http://www.paho.org/hq/index.php?option=com_docman&task=doc_view&Itemid=270&gid=32879&lang=en
2. Brazilian Ministry of Health. 12 January 2016: Weekly epidemiological update on suspected microcephaly cases (12 January 2016) Available at: <http://portalsaude.saude.gov.br/index.php/cidadao/principal/agencia-saude/21677-novos-casos-suspeitos-de-microcefalia-sao-divulgados-pelo-ministerio-da-saude> (In Portuguese)
3. ECDC. 10 December 2015: Rapid Risk Assessment: Zika virus epidemic in the Americas: potential association with microcephaly and Guillain-Barré syndrome. Available at: http://ecdc.europa.eu/en/publications/_layouts/forms/Publication_DispForm.aspx?List=4f55ad51-4aed-4d32-b960-af70113ddb90&ID=1413
4. NaTHNaC. Zika virus: update and advice for pregnant women (updated 19 January 2016). <http://travelhealthpro.org.uk/zika-virus-update-and-advice-for-pregnant-women/>