



SCHOLARSHIP REPORT

This report should be completed by recipients of awards and scholarships from the Royal College of Physicians and Surgeons of Glasgow on completion of the activity for which they received their award or scholarship. Please complete all sections of the report form.

Please return your completed report via email to: scholarships@rcpsg.ac.uk

Or via mail to: **Scholarships Committee Administrator, Royal College of Physicians and Surgeons of Glasgow,
232-242 St Vincent Street, Glasgow G2 5RJ, UK**

Please use typeface when completing this form.

SECTION 1 PERSONAL AND AWARD DETAILS			
Title	Dr	PID	17886
Surname	Allen	Forename(s)	Samuel
Scholarship/award awarded	FTM Triennial Scholarship	Amount awarded	£2000

SECTION 2 PROJECT/VISIT DETAILS	
Name/Title	Zika in NE Brazil
Location	NE Brazil
Aims and objectives	<ol style="list-style-type: none">1. To facilitate the mission of the annual heart caravan in providing specialist paediatric cardiological evaluations for children in NE Brazil.2. To develop the caravan model of health care delivery for evaluation of mothers and children affected by Zika virus infection in NE Brazil.3. To inform public health policy regarding the emerging status of ZIKV and its mosquito vector through research.4. To provide specialist training for community-based healthcare professionals in NE Brazil.

<p>Summary</p> <p><i>Include methodology, results and conclusions if applicable</i></p>	<p>The annual Heart Caravan was established as a scientific partnership program to detect and monitor congenital cardiac abnormalities in NE Brazil, a region with a high incidence of congenital heart disease and rheumatic fever. The caravan consists of a small convoy that each year travels across the State of Paraiba stopping off to deliver healthcare at 13 designated townships. These townships include the most remote and economically deprived communities. All the staff on the caravan are volunteers.</p> <p>Since 2015, a Zika virus epidemic has emerged followed by an unprecedented rise in reported congenital microcephaly. The caravan model of healthcare delivery was therefore adapted to facilitate the collection and recording of clinical laboratory data sets to further the understanding and epidemiology of Zika virus (ZIKV) infection.</p> <p>At each town, children and parents were taught about Zika, dengue and chikungunya and how to prevent disease transmission through mosquito avoidance and eradication of breeding sites. Pregnant mothers were screened for Zika virus infection and underwent ultrasound to record foetal head circumference. Children with microcephaly were assessed for neurological and physical milestone development.</p> <p>The caravan provided training and teaching for community-based healthcare staff in the region. Demonstration sessions were conducted at the local municipal hospitals on preparation of placental specimens for ZIKV testing.</p> <p>Over 1900 patients were assessed during the 2 week project. Assessment included ECHO, cardiac auscultation recording, streptotest, ophthalmology, odontology, sampling for ZIKV and other arbovirus infection as well as provision of physiotherapy, nutrition and social services. All services were provided free of charge.</p> <p>Approximately 300 pregnant women were screened for ZIKV infection and over 60 children with confirmed microcephaly were assessed. Blood and urine specimens will be analyzed at the LIKA Laboratory (Laboratorio de Imunopatologia Kaizo Asami), Universidad Federal de Pernambuco.</p> <p>ZIKV sequencing and qPCR results will be shared online with LIKA collaborators. The collaboration will aim to have a first large public release of ZIKV sequence data with ongoing data releases planned following future caravans.</p>
<p>Learning outcomes</p> <p><i>Detail here how the aims and objectives were met</i></p>	<p>ZIKV infection was established as being highly likely as the cause of the observed microcephaly in children born during 2015-16 in Paraiba state.</p> <p>Revision of estimates of infected patients is likely due to other arbovirus infections that are endemic in the region (chikungunya, dengue, mayaro) and inaccurate head circumference measurement eg. in premature.</p> <p>The Heart Caravan model of healthcare delivery was established as an efficient model for future Infectious Diseases surveillance and follow-up of the mothers and children affected by ZIKV.</p> <p>Training in placental pathology specimen preparation was provided at 12 hospital sites and nurse training courses were delivered in foetal ECHO, electronic auscultation, pre-natal care and microcephaly care.</p> <p>One neonate newly diagnosed with a critical congenital heart condition due to transposition of the great vessels was transferred to the regional cardiac unit for surgery.</p> <p>10,000 canisters of mosquito repellent were distributed.</p> <p>An Infectious Diseases caravan planned for the fourth quarter of 2016 will assess the survival and health status of children with birth defects caused by ZIKV infection. A qualitative questionnaire will be used to assess the expectations, knowledge and perceptions of families affected by infants with Zika virus infection related birth defects. The economic impact and the one year survival of infants born with Zika related microcephaly will also be assessed using tested questionnaire and survival survey.</p>

Evaluation

How has this scholarship/award impacted on your clinical/NHS practice or equivalent?

The FTM Triennial scholarship provided me an opportunity to carry out field surveillance for an evolving arbovirus epidemic.

I was able to revise my diagnostic clinical skills in paediatrics.

The most rewarding legacy of the scholarship will be the founding of Brazil's first Microcephaly Support Group which will be known as the 'Mother of Angels'.

Strong friendships with international collaborators have been established.

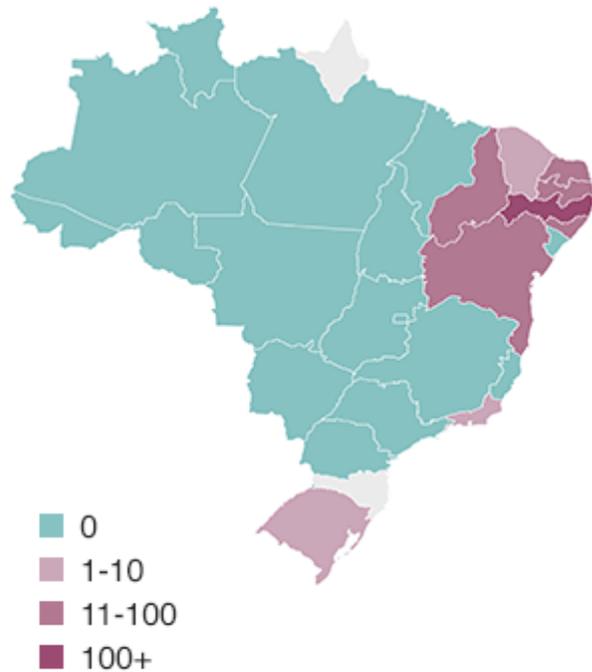
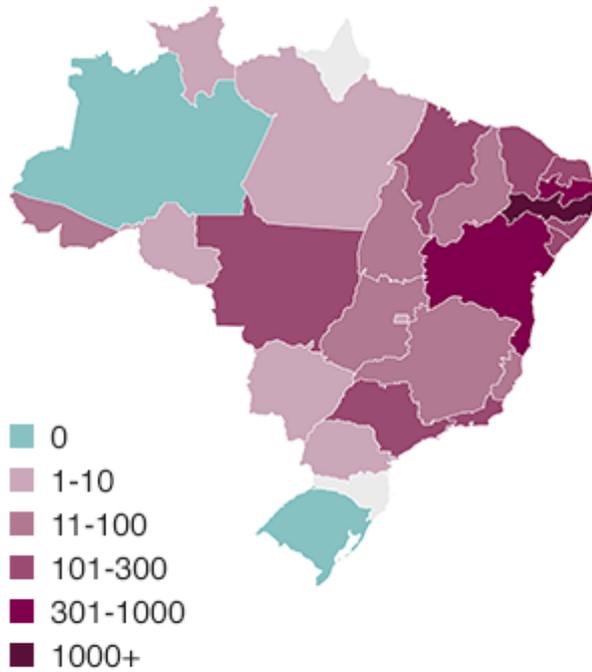
The impact on my daily practice will be in the awareness of Zika in travellers returning from affected countries and the recognition of risk to travelers or their partners and the potential for Zika virus infection to appear in other countries where Aedes spp is established.

I am indebted to the Faculty of Travel Medicine for enabling me to participate in this fascinating project.

Microcephaly in Brazil

Suspected cases of Microcephaly
3,670

Confirmed cases of Microcephaly
404



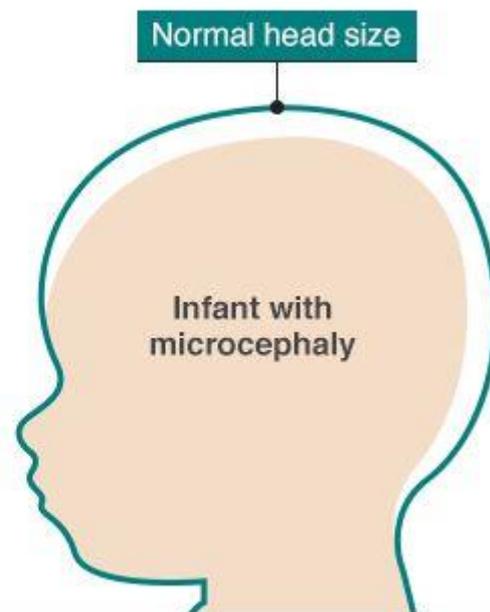
Note: Figures from 22 Oct 2015 - 30 Jan 2016

Source: Brazilian Ministry of Health

BBC

Microcephaly

- Symptoms include below-average head size
- Often caused by failure of brain to grow at normal rate
- Head circumference measuring **less than 31.5-32cm** at birth
- Affects **25,000 children** in US each year



Source: ADAM, WHO

BBC



SECTION 4 | EXPENDITURE

Breakdown of expenditures

Please demonstrate how the scholarship/award funding was used to support your project/visit

Return air fare £840

Transfers £40

Accommodation £120 on arrival/prior to departure from Brazil

Travel /accommodation during the project £860 (subsidised by the project)

SECTION 5 | PUBLICATION

Scholarship/award reports may be published in College News. Please tick here if you agree to your report being published.

I give permission for my report to be published in College News

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