

Re-emergence of neglected tropical diseases in Venezuela

Once lauded for its vector-control efforts, Venezuela faces a crisis in its management of NTDs.

Talha Burki reports.

Almost everywhere in the Americas, malaria is on the decline. Colombia, where control efforts are hampered by a long-running civil war, has reduced its disease burden from some 120 000 cases in 2005 to around 50 000 cases in 2013. Over the same period, Brazil saw its caseload fall from over 600 000 to fewer than 180 000. But in Venezuela the trend is moving in the opposite direction. Last year, the country saw about 80 000 cases of malaria. This year the burden could approach 100 000, almost five times the 1998 level. And with concurrent epidemics of dengue and chikungunya, neither of which show any sign of abating, it seems likely that mosquitoes will continue to cause serious problems in the Andean state.

Venezuela was once lauded for its vector-control efforts. Much of its success was attributable to the mid-century regional DDT spraying campaigns, which were targeted at both *Anopheles* spp and *Aedes aegypti*, the latter in response to yellow fever rather than dengue. By 1962, dengue had been eradicated from 18 continental countries, although not Venezuela. But after the spraying campaigns ended, dengue soon resettled. Over the past three decades cases have spiked. "Venezuela is typical of the region", affirmed WHO's Raman Velayudhan. "It has outbreaks of dengue and chikungunya when there are outbreaks in neighbouring countries." As *The Lancet Infectious Diseases* went to press, Brazil had reported 460 502 cases of dengue for 2015, and Colombia had seen some 275 000 cases of chikungunya since the virus entered the country last summer. Nonetheless, Venezuela faces strictures that are proving particularly detrimental to its control efforts.

"Really we are talking about a profound humanitarian health crisis in the country", explains Alfonso J Rodríguez-Morales (Universidad Tecnológica de Pereira, Colombia). "The problem is that the socioeconomic depression is affecting significantly the healthcare situation." He believes that the current difficulties have their origins in long-running underinvestment in health care that began under the administration of Hugo Chavez and has continued under his successor Nicolás Maduro. "Money has been diverted from important areas of health and research to other areas", said Rodríguez-Morales. The country has seen four ministers of health in the past 2 years. Matters have been further exacerbated by a profound economic crisis. Inflation is said to be running at 50%. There are strict currency controls, making it extremely difficult to acquire US dollars. Imports have dwindled, and there are widespread shortages of vital goods.

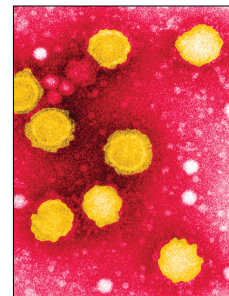
"Dengue programme funding has been decreasing by roughly 20% each year—the mosquitoes are spilling all over the country and yet less and less money is available"

"There is not enough of anything, from food to medicines to insecticide", stated Adriana Tami (Universitair Medisch Centrum Groningen, Netherlands). It is not clear how much Venezuela owes international pharmaceutical companies, but some reports suggest it could be as much as US\$4 billion. Moreover, antimalarials can only be prescribed by the malaria control programme, and it is facing acute budget problems. "There is not enough personnel, they don't have enough vehicles to go where people at

risk of malaria are, when vehicles break down, spare parts are difficult to find, and there is a shortage of antimalarials and of reagents for diagnostics", said Tami. She adds that indoor residual spraying campaigns are inconsistent and there has been no concerted effort to distribute insecticide-treated nets.

Compounding the problem is the fact that the malaria epidemic is driven by illegal mining in the remote border regions of the southern state of Bolívar. The pools of stagnant water that accompany such activity are ideal environments for *Anopheles* spp. "Many miners are illegal aliens, they are Colombian or Brazilian, and it is very difficult in that setting to give them treatment", explains Julio Castro (Tropical Medicine Institute, Universidad Central de Venezuela). There is scarcely any infrastructure anyway, and illegal miners are often reluctant to enter health care. They sleep in overcrowded and open conditions, and migrant workers come and go. It is a long-running problem, but has never been adequately tackled, and it amounts to something of a perfect storm for malaria transmission.

Dengue, by contrast, is largely an urban phenomenon. Reported cases for 2014 were in excess of 75 000 in Venezuela, but experts have called the Government's commitment to tackling the disease into question. "Dengue programme funding has been decreasing by roughly 20% each year—the mosquitoes are spilling all over the country and yet less and less money is available", points out Castro. Venezuela's water supply is irregular, so people have taken to storing water. "It means that the amount of breeding sites for *A. aegypti* have increased enormously", said Tami. A study by Castro found that 50% of houses in one district



O. Schwartz, M. Sourisseau, MC Prewett, Institute Pasteur/Science Photo Library

had vector reservoirs. Moreover, whereas dengue transmission was previously largely restricted to the rainy season, it is now a perennial affair.

How all of this is affecting the caseload is impossible to quantify—the Venezuelan Government has not produced an epidemiological bulletin since November, 2014. The bulletin should contain regional and national data on at least 75 notifiable diseases; its absence enormously complicates the practice of public health. Without official statistics, experts have to work on assumptions and projections. “Our network of epidemiologists in Venezuela has calculated that the accumulated cases of chikungunya for 2014 were around 2 million”, said Tami.

The epidemiological bulletin disappeared around the same time as the onset of the chikungunya

epidemic. It has added to widespread suspicions that the authorities are attempting to obscure the extent of the outbreak. Chikungunya landed in South America in late 2013, after which it was inevitable Venezuela would be affected. The disease eventually struck the country in June, 2014. “In the 6 months or so they had to prepare, they did very little”, Tami said. Chikungunya was not made a notifiable disease until October. The president of Aragua state’s college of physicians was accused of a terrorist campaign by the Government after he drew attention to eight deaths that bore the hallmarks of chikungunya. Physicians became wary of publicly discussing the disease. Castro co-authored a paper that documented four lethal cases of chikungunya, and noted that it had been strongly implicated in at least 20 deaths. “It is

plausible that the recognised deaths are only a small fraction of the real number”, the paper concluded.

Given that this is South America’s first wave of chikungunya infection, it is tricky to predict its course. Velayudhan expects it to slowly subside over time, as the population becomes inured to the virus. WHO reckons a vaccine might be available for dengue within the next decade or so. But in the meantime it remains an intractable prospect—four serotypes, with no cross-immunity. “The Government really has to take matters in hand by supplying personnel, equipment, and medicines, and educating the population on epidemic diseases, otherwise we may see a repetition of what we saw last year with chikungunya”, warns Tami. Reinstating the epidemiological bulletin would be a good start.

Talha Burki

For more on the Castro co-authored paper see *ID Cases* 2015; 2: 6–10

Infectious disease surveillance update

Meningitis in Niger

Between Jan 1, 2015, and April 25, 2015, WHO was notified of 1543 suspected cases of meningococcal disease, including 147 deaths, by the Ministry of Public Health Niger. These cases are spread across seven of the eight regions in Niger; outbreaks have also been confirmed in Dosso and Niamey. Several districts in these regions have exceeded the epidemic threshold. In Dosso region, 282 cases have been reported including 27 deaths. In Niamey, 944 suspected cases have been reported so far including 88 deaths. Laboratory tests have confirmed the predominance of *Neisseria meningitidis* serogroup C; additionally, serogroup W was identified in several samples. A national epidemic committee and international organisation staff are assisting Ministry of Health Niger with the outbreak investigation and surveillance activities. The Government of Niger is also being

supported to implement mass vaccination campaigns.

Hepatitis A in the USA

As of May 1, 2015, 27 cases of hepatitis A have been reported in US travellers returning from Tulum, Mexico. All the reported cases were in individuals who travelled to Tulum between Feb 15 and March 20, 2015. Hepatitis A is spread through the faecal–oral route and is vaccine preventable. Returnees from the area are advised to have hepatitis A vaccination on their return, which can lessen symptoms or prevent illness if given within 14 days of exposure.

Diphtheria in South Africa

The National Institute for Communicable Diseases South Africa reported that a child died from diphtheria and two more children were strongly suspected of having the illness. The cases were reported from Durban, KwaZulu-Natal

province. The 8-year-old boy who died was transferred to a central hospital from a secondary hospital where he was admitted on March 15, 2015, having had fever for 3 days. After initial signs of improvement, unexpected complications led to his death on March 22. As of April 29, the two children (aged 8 and 9 years) who were strongly suspected of having the disease were admitted to hospital and were receiving treatment. Diphtheria is vaccine preventable requiring children to be vaccinated at 6, 10, and 14 weeks, with booster doses at 18 months, and 6 and 12 years old. All the children in this outbreak had not received their booster doses. The Department of Health did a catch-up vaccination campaign in the area to prevent further cases. Before these cases, diphtheria had not been reported in Durban for 26 years.

Ruth Zwizwai

For more on meningitis in Niger see <http://www.who.int/csr/don/29-april-2015-niger/en/>
For more on hepatitis A in the USA see <http://www.promedmail.org/direct.php?id=3338598>
For more on diphtheria in South Africa see <http://www.promedmail.org/direct.php?id=3333702>