



# The Brazilian Journal of INFECTIOUS DISEASES

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## Letter to the Editor

# Inability to work due to Chikungunya virus infection: impact on public service during the first epidemic in the State of Ceará, northeastern Brazil

Dear Editor:

The Chikungunya virus is an RNA Alphavirus, with two glycoprotein envelope.<sup>1</sup> It is an arbovirus transmitted through the bite of an infected mosquito from the *Aedes* genus.<sup>1–4</sup>

The Chikungunya virus has returned to the Americas after more than two hundred years, when in 2013 an epidemic was detected in the Caribbean.<sup>2</sup> During the World Cup in Brazil in 2014, there were many tourists in the country, when the virus was probably introduced here and started the epidemic, with the first cases being reported as early as 2014 in the north and northeast regions of the country.<sup>3</sup>

The first epidemics were described in 1952 in Africa, in the region of Tanzania, where the local population called the affected people as “the one that bends” (in local language “Chikungunya”),<sup>4</sup> due to the severe arthralgia and physical incapacity caused by the infection.

The aim of this study was to investigate Chikungunya infection as a cause of absenteeism in the city of Fortaleza, state of Ceará, Brazil, during the first and greatest Chikungunya epidemic known to us. An ecological study was carried out using data from the official absenteeism notification systems in two public institutions located in Fortaleza, the units of the Integrated Health System of the Public Servant (SIASS) of the Ministry of Health and the Federal Institute of Education, Science and Technology of Ceará (IFCE). Absenteeism of public servants due to Chikungunya infection was assessed from January 2014 to July 2017, based on the International Code of Diseases (A-92, Chikungunya virus disease), when a growing increase in absenteeism was observed, mainly from 2016 onward (Figs. 1 and 2).

There were no reports of absenteeism due to Chikungunya fever in the years 2014 and 2015 in both SIASS units. From 2016 onward, reports of health leaves of absence for the treatment of Chikungunya fever started to appear. The most frequent complaints were fever and arthralgia, with the latter being the most common cause of disability.

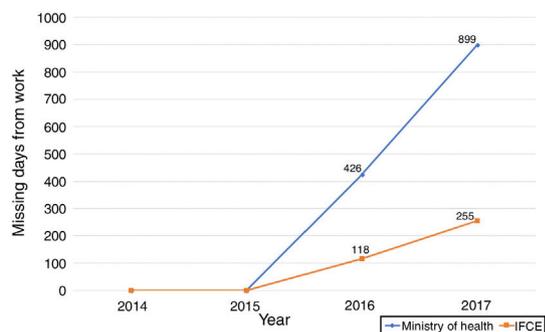
According to data from the medical assessment group of the Ministry of Health of Ceará, 16 servants were absent from work activities due to Chikungunya fever, totaling 426 lost days of work, on average 26.6 days lost per servant. In the IFCE, in that same year, 10 servants were on leave, totaling 118 lost days of work with a mean of 11.8 days per servant. When considering the lost days of work in these two large public agencies, we obtained a mean of 20.9 days of absenteeism per affected servant.

In 2017, we had the longest period of work disability for that reason, corresponding to an increase of 112% when compared to the same period of 2016. This result was corroborated by epidemiological data of the State Health Department (SHD). According to the SHD of Ceará, our state concentrated 66% of the cases of Chikungunya fever in Brazil during this period, with 57.4% of cases in Fortaleza alone, to the best of our knowledge the city with the greatest epidemic of the disease. Since the disease is incapacitating, the increasing absenteeism during the epidemic period drew attention of the government. In Brazil, the incidence rate of the disease was 90.1 cases per 100,000 inhabitants, while in the state of Ceará a disturbing incidence of 1497 cases per 100,000 inhabitants in 2017 was observed.<sup>5</sup>

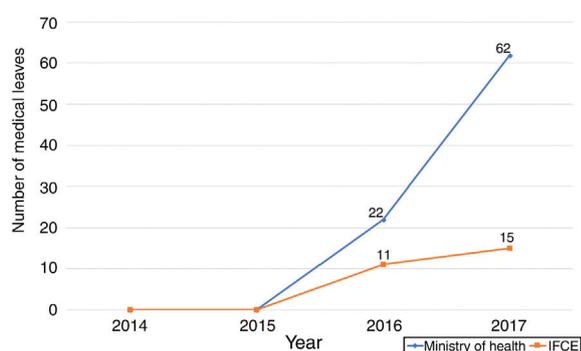
The number of days of absenteeism ranged from 11 to 20 days; however, some workers had more than one leave of absence period. In the year 2017, there was a prevalence of  $18.9 \times 10^3$  servants affected by Chikungunya fever in the SIASS of Ministry of Health, and  $4.1 \times 10^3$  in the IFCE.

From January to July 2017, 1154 days of work were lost due to Chikungunya fever in these two public institutions, while in year 2016, 544 days of absenteeism were recorded for this same reason. The mean number of work days lost per servant in 2017 was 20.6 days which represents twice as many servants on leave of absence compared to the previous year. These facts corroborate our hypothesis that this arbovirus as an important cause of absenteeism.

We show here the impact of the disease on the public sector in two federal institutions and conclude that Chikungunya fever is an important cause of work incapacity, so that dur-



**Fig. 1 – Missing days from work due to Chikungunya infection among workers of two public institutions in Fortaleza, Ceará, Brazil, 2014–2017.**



**Fig. 2 – Medical leaves from work due to Chikungunya infection among workers of two public institutions in Fortaleza, Ceará, Brazil, 2014–2017.**

ing epidemic periods it is necessary to be prepared also for the economic impact the disease has on the several sectors of society. The exact economic burden that the Chikungunya epidemic had brought to Brazil is still to be estimated, but one can suppose that it is huge. Educational and preventive measures against this arbovirus are urgent, not only in the work environment, but for society as a whole, since adequate control of this and other arboviruses is still far from achieving.

### Conflicts of interest

The authors declare no conflicts of interest.

### Acknowledgements

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