

## THE PREVALENCE OF MICROCEPHALY AS PART OF CONGENITAL ZIKA SYNDROME WORLDWIDE

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**Introduction:** In 2015, the Ministry of Health in Brazil became aware of the increasing number of neonates with microcephaly, temporally associated with an ongoing outbreak of Zika, which latter was declared as a Public Health Emergency of International Concern. The objective of this study is to describe the prevalence of microcephaly as part of congenital Zika syndrome (MCZS) worldwide, and in regions within Brazil and to propose reasons for the variations.

**Results:** Until October/2016 23 countries have reported MCZS potentially associated with Zika infection. Most of the countries that have reported cases of MCZS are localized in Americas (70%). Until November/2016 there were 2,330 cases of MCZS in America; of those, 2159 occurred in Brazil. Brazil concentrates 92% of the cases of MCZS; however the prevalence, defined as number of cases per live births in an year is more than 3 times higher in French Guiana and Martinique than in Brazil (0.7/1000 live births). The prevalence of MCZS was higher than Brazil in Cabo Verde and French Polynesia. The prevalence of MCZS was lower than Brazil in, Colombia, Dominican Republic varied from 0.07-0.09/1000 live births. Over time the proportion of MCZS reported by Northeast region was diminished (Mar/2016-78%; Nov/2016-66%). The Southeast region experienced the highest growth from 11% in Mar/2016 to 20% in Nov/2016. Only the Northeast region of Brazil had reported cases before the causal link was established.

**Discussion:** The prevalence of MCZS per live births in the general population was different between countries. This should not be conflated with the risk of MCZS given Zika infection during pregnancy, which does not depend on the intensity of the epidemic. The difference in proportion of births with MCZS in countries and regions may be caused by the stage of the epidemic: (It is likely for example that the outbreak is over in the northeast of Brazil but ongoing and still spreading to new areas. Other reasons for the differences in proportions include pregnancy terminations (legal or illegal but certainly more frequent now causality is established) unreported/misdiagnosed cases, and variations in diagnostic criteria as there is no agreed surveillance case definition, and finally that the risk of CZS given infection with Zika during pregnancy is modified by some factor. The risk of CZS given infection in pregnancy, and whether it varies across settings will only be estimated once several studies estimate it and report it in different settings