Journal of Travel Medicine

International Society of Travel Medicine
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Journal of Travel Medicine, 2019, 1–3
doi: 10.1093/jtm/tay141
Editorial

Editorial

Venezuela's migration crisis: a growing health threat to the region requiring immediate attention

Submitted 23 November 2018; Editorial decision 30 November 2018; Accepted 5 December 2018

Venezuela has endured an unprecedented and worsening humanitarian crisis that has forced 2–3 million people to flee the country over the past 2 years alone. The resulting public health crisis is appalling. Health outcomes are approaching emergency levels. According to the World Health Organization, Venezuela's mortality rate for children under 5 years of age in 2016 reached levels comparable to war torn countries, a Grade 3 emergency. Moreover, Caritas, a non-governmental relief organisation estimated that 11.4% of children below 5 years suffer from moderate or severe acute malnutrition. This is above the 10% criteria for 'high public health concern' established by the UN High Commissioner for Refugees.[1]

This bleak situation is compounded by the departure of vast numbers of skilled doctors and nurses, creating a significant brain drain in Venezuela's health sector.[2] Venezuela's Medical Federation estimates that roughly one-third of the country's physicians have left. Venezuela's current crisis involves complex socio-economic, political, logistics and humanitarian components. In recent years, this predicament has determined a growing massive migratory wave of great impact, difficult to measure in its magnitude, due in part to lack of access to official epidemiological information, irregular legal status of this population, and unavailable figures regarding the cost of healthcare services and resources spent by receiver countries. A recent publication in the *Journal of Travel Medicine* by Tuite *et al.* estimated the expected population flows from Venezuelan to major Latin American and Caribbean cities, by means of two parameter-free mobility models, as a way to assess the international mobility patterns of this migrant population and the infectious disease risks posed by it.[3] Models that predict human migration may be useful tools to rapidly estimate population movement and help focus limited public health resources and prevent the spread of communicable diseases. Understanding where migrants are relocating is critical, given the association between human mobility and the spread of infectious diseases within the context of increased global connectivity. The relative magnitude of the recent Venezuelan diaspora is better appreciated by looking at rates of migrants in relation to the total population of the receiver countries during the last 2 years, where even comparatively moderate numbers of migrants may represent a major burden to countries with low numbers of inhabitants (Figure 1).

Venezuela has traditionally been a long-term recipient of immigrants, in contrast to most countries in the region which were steady exporters of emigrants, at least until recently. This reversal in roles is a key factor to understanding the current dynamic, as such new pattern entails significant adjustments from receiver countries, for which they were largely unprepared, in terms of logistics, and financial resources.

Risk of disease outbreaks

Besides ongoing epidemics of malaria, measles and diphtheria, Venezuela is experiencing greater than expected activity of other infectious diseases, but because of the imperviousness of official figures, the exact situation remains unknown. This generates an unequivocal risk closely related to the following two factors: (i) intensity of local disease activity and (ii) magnitude of the migration, as shown by some models that put into context these risks from a probabilistic perspective.[4]

- *Measles*: According to the Pan American Health Organization (PAHO), as of 24 October 2018, a total of 8091 cumulated cases have been reported in Latin America, of which Brazil registered 2192 cases, Colombia 129, Peru 38, Ecuador 19 and Venezuela 5525 (68% of all cases).[5] Most cases in the neighbouring countries are imported from Venezuela, such as in Colombia where 93% of the cases were either imported or closely related to cases among Venezuelan migrants and/or Colombian repatriates from Venezuela. About 75% of the regional infections belong to viral lineage D8 that circulates widely in Venezuela. Indigenous ethnic groups in the Brazil–Venezuela border exhibit strikingly high attack rates and case fatality rates (CFR) above the continental average.[5] Suggested control measures include increasing local vaccine-preventable disease (VPD) coverage rates and serological screening to identify patients in need of vaccination among incoming Venezuelan migrants.[6]
- *Diphtheria*: PAHO's epidemiological update of 29 October 2018 indicates that the large diphtheria outbreak of Venezuela remains untamed. In total, 2170 suspected cases have been reported and 1249 confirmed. The cumulative CFR among confirmed cases reached an astounding 23%.[6] Of note, out of eight diphtheria cases reported in Colombia, six were Venezuelan migrants and two Colombian nationals, with exposure in bordering departments of great binational activity.[7]
- *Malaria*: Although not transmitted by direct contact, malaria presents a similar risk of regional spread. As parasitized individuals

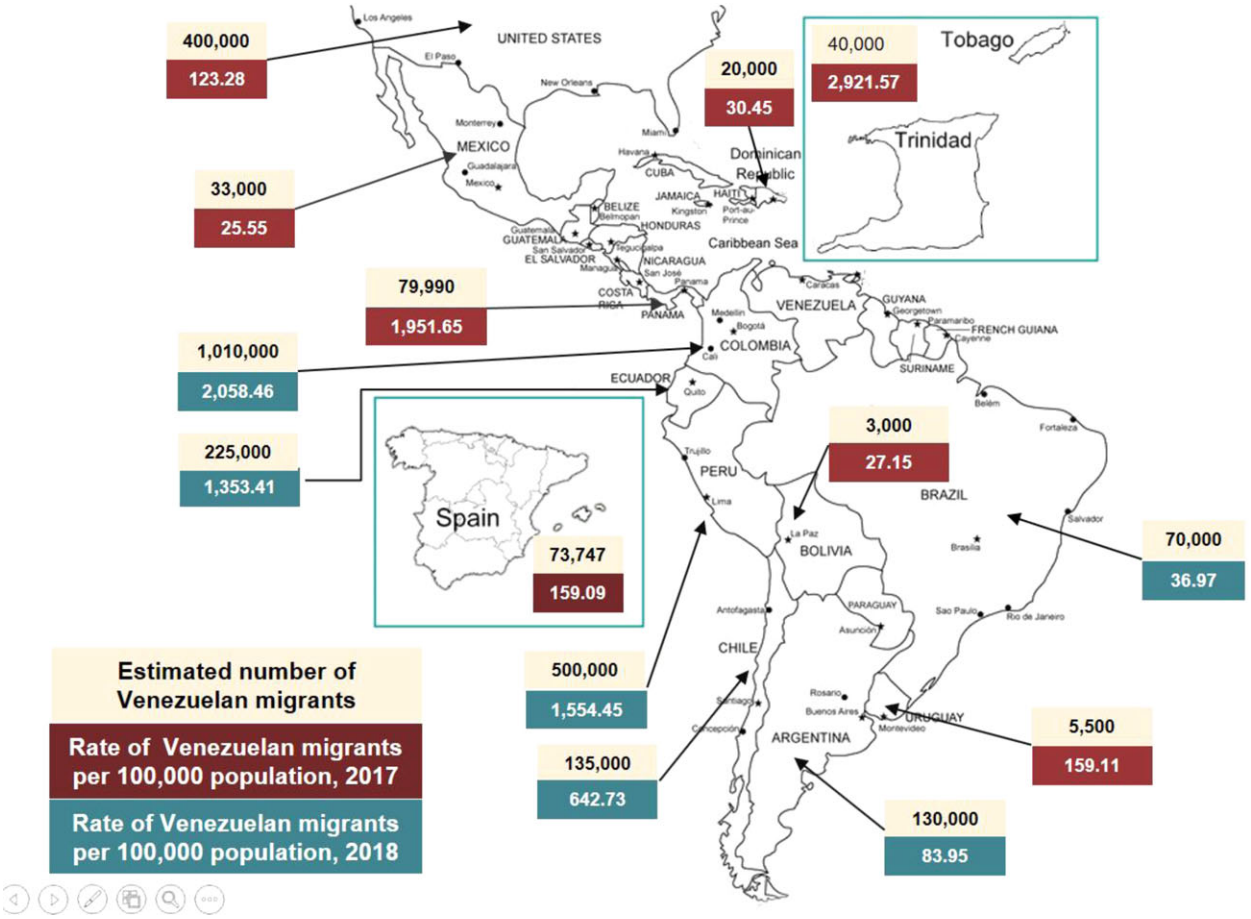

Figure 1. Comparative magnitude of the migrating wave of Venezuelan nationals to other countries during the 2017–2018 period, according to the total population of receptor countries. Source: Public documents from the Office of United Nations High Commissioner for Refugee (UNHCR) and Observatorio Latinoamericano de Desarrollo Sostenible. https://www.olds2030.org/2018/03/cartografia-diaspora-venezolana-2017.html

move to other suitable environments with susceptible anopheline populations, there is a potential for reintroduction of this disease. The latter has already occurred in Venezuela recently where strong mobilisation of people back and forth between illegal mining areas triggered outbreaks in regions that had remained controlled for over 40 years. At least 5172 cases of malaria imported from Venezuela were reported by other South American and Caribbean countries up until 31 October 2018, 80% of them only in Brazil and Colombia (JF Oleta, personal communication).

For VPD, the risk of transmission from Venezuelan migrants involves several specific features, such as a poorly vaccinated population with high mobility, exposure of large number of people and difficulty in locating potential patients. Moreover, migrants interact with indigenous local populations in remote border areas with low immunisation coverage rates and typically face weak health services. Additionally, the creation of improvised refugee shelter centres generates favourable conditions for the spread of communicable diseases not only among migrant population but also to locals and health personnel involved in humanitarian work. Particularly worrisome is the possibility of breeding conditions favourable to endemic transmission that would perpetuate circulation of re-introduced infectious pathogens. The case of measles, which until recently had been controlled in the continent, is emblematic. The impossibility of reaching high enough vaccine coverages in some areas poses a real threat, demanding coordinated continental initiatives, otherwise importation to other countries will only increase.

The real extent of disease burden related to migration is complex to estimate because of the nature of the phenomenon itself. According to the information from Colombian health authorities, during the first quarter of 2018 at least 132 cases of malaria, 42 TB, 34 dengue, 28 HIV, 24 acute hepatitis, 22 pertussis, 20 measles and 22 congenital syphilis cases were registered among Venezuelan migrants, and 86 535 vaccines administered in border posts.[8] Overall, the Venezuelan diaspora caused a 300% increase of requirements in healthcare of the Norte de Santander Department during 2017, in comparison to the prior year.

Diseases such as TB and HIV are of particular relevance since their treatment is also an important part of the control strategy. The limited access to anti-tuberculous and ant-iretroviral medications in Venezuela increases the risk of transmission from migrants to host communities. Similarly, the possibility of transferring more resistant pathogens to new geographic areas exists, although it may not be as significant in regions of intense historical population exchange with Venezuela (e.g. Norte de Santander, Colombia) as in less traditional destinations (e.g. State of Roraima, Argentina, Peru, etc.)

In recent years, the difficulty to access programs, such as HIV, organ transplantations, immunological and oncological diseases in Venezuela, have been an important motivator for migrants to seek healthcare in other countries.[9] Unfortunately, most migrant patients do not qualify or are unaware of the mechanisms regulating access to healthcare coverage in other countries. Specialised treatments are expensive and generate a heavy burden to healthcare systems of receiver countries, both in terms of budget and logistics (appropriate infrastructure, specially trained physicians and specialised laboratories).

Lack of medicines and the precariousness of basic services unevenly affect the most vulnerable groups of society, which therefore are most likely to require health services and have less capacity to withstand extreme situations such as malnutrition, extreme temperatures and long walks. Although international monetary resources have been allocated recently, the amounts involved remain limited and only partially cover the increasing financial needs. Many health services provided in the border areas are under tutelage of non-governmental humanitarian aid organisations that receive funds from donations, some primarily oriented to healthcare and others intended to help the refugees and migrants in a generic way, usually in social and logistical aspects. Sometimes these institutions have to transitorily assume roles as primary healthcare providers, or alternatively, through paid private healthcare services or voluntary activities of collaborators. Some aspects regarding international humanitarian law need to be resolved, such as the situation of children of migrant Venezuelan mothers born in other countries, who according to the law of receiver countries cannot be considered nationals, and because of their irregular condition are also not legally Venezuelan citizens, becoming therefore stateless persons.

Current trends suggest the possibility of perpetuation of the Venezuelan migration crisis, as all indicators show a tendency to a worsening economic and political situation in the near future, and the sustainability of necessary additional healthcare investment by the recipient countries may be too challenging. In the absence of an integrated strategy involving considerable financial support from international agencies and effective aggressive health strategies of containment of cases in the country of origin, the risk of spillover of various infectious diseases from Venezuela to other countries as documented by Tuite *et al.*[3] will, therefore, remain high. The re-emergence of measles in the Americas and elsewhere,[5,10] and the seriousness of diphtheria outbreaks in conflict situations as highlighted in other migrant settings[11,12] are stark reminders that the Venezuela's migration crisis is a health threat that demands immediate attention.

Conflict of interest: None declared.

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