

SPECIAL ARTICLE



Monkeypox: What are we Waiting for to Act? Monkeypox: o que estamos esperando para agir?

Alexandra Crispim Boing^I , Maria Rita Donalísio^{II} , Tânia Maria de Araújo^{III} , Ana Paula Muraro^{IV} , Jesem Douglas Yamall Orellana^V , Ethel Leonor Maciel^{VI} , Comissão de Epidemiologia da Associação Brasileira de Saúde Coletiva (ABRASCO)^{VII}

^IUniversidade Federal de Santa Catarina, Postgraduate Program in Public Health – Florianópolis (SC), Brazil.

^{II}Universidade Estadual de Campinas, Medical Sciences School, Postgraduate Program in Public Health – Campinas (SP), Brazil.

^{III}Universidade Estadual de Feira de Santana, Postgraduate Program in Public Health – Feira de Santana (BA), Brazil.

^{IV}Universidade Federal de Mato Grosso, Institute for Public Health, Postgraduate Program in Public Health – Cuiabá (MT), Brazil.

^VFundação Oswaldo Cruz, Leônidas and Maria Deane Institute – Manaus (AM), Brazil.

^{VI}Universidade Federal do Espírito Santo, Postgraduate Program in Public Health – Vitória (ES), Brazil.

^{VII}ABRASCO Epidemiology Commission: Alessandra Valle Salino, Alicia Matijasevich, Amanda de Moura Souza, Amaury Lélis Dal Fabbro, Ana Paula França, Ana Paula Sayuri Sato, Bárbara Campos Silva Valente, Bernardo Lessa Horta, Bianca Borges da Silva Leandro, Cassia Maria Buchalla, Claudia Leite de Moraes, Cynthia Boschi-Pinto, Daniel Umpierre, Danielle Souto de Medeiros, Deisy de Freitas Lima Ventura, Denise Siqueira de Carvalho, Edson Zangiacomi Martinez, Elaine Cristina Marqueze, Eliseu Verly Junior, Enirtes Caetano Prates Melo, Erika Barbara Abreu Fonseca Thomaz, Ernani Tiaraju de Santa Helena, Fernando José Herkrath, Filipe Ferreira da Costa, Flávia Bulegon Pilecco, Fredi Alexander Diaz-Quijano, Gabriel Rodrigues Martins de Freitas, Geraldo Bezerra da Silva Junior, Gerusa Gibson, Giselle Bianca Tófoli, Heloisa do Nascimento de Moura Meneses, Isabel Cristina Gonçalves Leite, João André Tavares Álvares da Silva, João Simão de Melo Neto, Kionna Oliveira Bernardes Santos, Larissa Fortunato Araújo, Leandro F. M. Rezende, Ligia Regina de Oliveira, Lisandra Serra Damasceno, Marcelo Demarzo, Marcio Sacramento de Oliveira, Marcos Pereira, Margareth Guimarães Lima, Maria Aparecida Araújo Figueiredo, Maria Cynthia Braga, Maria de Jesus Mendes da Fonseca, Maria Fernanda Tourinho Peres, Marina Smidt Celere Meschede, Marly Augusto Cardoso, Rafael da Silveira Moreira, Rejane Christine de Sousa Queiroz, Renata Bertazzi Levy, Rosa Livia Freitas de Almeida, Sérgio Viana Peixoto, Sheila Maria Alvim de Matos, Taynãna César Simões, Vanessa Moraes Bezerra, Vivian Siqueira Santos Gonçalves, Wallisen Tadashi Hattori.

CORRESPONDING AUTHOR: Alexandra Crispim Boing. Rua Campus Universitário Reitor João David Ferreira Lina, s/n, Trindade, CEP: 88040-970, Florianópolis (SC), Brasil.
E-mail: acboing@gmail.com

CONFLICT OF INTERESTS: nothing to declare.

HOW TO CITE THIS ARTICLE: Boing AC, Donalísio MR, Araújo TM, Muraro AP, Orellana JDY, Maciel EL, et al. Monkeypox: What are we Waiting for to Act? Rev Bras Epidemiol. 2022; 25:e220020. <https://doi.org/10.1590/1980-549720220020>

This is an open article distributed under the CC-BY 4.0 license, which allows copying and redistribution of the material in any format and for any purpose as long as the original authorship and publication credits are maintained.

Received on: 07/26/2022

Accepted on: 07/28/2022



On May 7 2022, the World Health Organization (WHO) was informed of a confirmed case of Monkeypox, caused by the Monkeypox virus (MPXV), in the United Kingdom, in a patient who had traveled to Nigeria¹. Since then, several cases have been reported in countries where the disease is not endemic, with rapid spread: on July 24, 2022, there were 16,000 cases confirmed in 75 countries². On July 23, 2022, The WHO established the disease as a public health emergency of international interest³.

Monkeypox is an endemic zoonosis in Central and West Africa caused by an orthopoxvirus, hitherto largely ignored globally⁴. Although it is still called Monkeypox, the name is not adequate, since monkeys are not its main vector. It is, therefore, urgent that the disease and the virus have their names reclassified to avoid stigmatizing and discriminatory labels, as well as animal extermination actions with no effect in combating the disease.

The number of cases has increased over the years in endemic regions, with outbreaks in non-endemic countries related to travel and animal imports since 2003⁵. It is usually a self-limiting disease and its case fatality ratio varies from 1 to 10% between the West Africa and Congo Basin in Central Africa, respectively⁶. Although there is a similarity between the genomic sequence of recent cases of 2022 (Europe and the Americas) and the West African clade, more than 40 mutations have already been reported in the viral genome, possibly related to increased inter-human transmissibility⁷. Since 2017, the few reported deaths were associated with young age and immunosuppressed patients⁶. Data indicate that person-to-person transmission occurs through direct contact with skin lesions, body fluids, respiratory droplets, during close physical contact such as sexual intercourse and crowds². Transmission also occurs through contact with contaminated animals, surfaces or personal objects such as clothing, glasses, plates, cutlery or bed and bath linen². An analysis of a series of cases reported between April and June 2022 in 16 countries found that 98% of infected people were men who have sex with men (MSM) or bisexuals, with a median age of 38 years⁸. Systemic features such as fever, lethargy, myalgia, headache and lymphadenopathy have been reported before the rash, which occurred in 95% of cases, with no deaths reported⁸. However, there are still gaps in knowledge regarding transmission, risk factors and clinical characteristics⁸.

The first case imported into Brazil was confirmed on June 9, 2022. In less than a month, on July 25, there were already 813 cases confirmed and community transmission registered in the country⁹. This escalation of cases occurs amid the scenario of COVID-19 pandemic, which remains a significant health challenge that sustains the importance of the Unified Health System (SUS) and puts the country's fragility in facing a health emergency in the spotlight.

However, negligence and slowness in responding to disease are worrisome. There is a lack of laboratory structure

for the rapid diagnosis of Monkeypox, as well as a breakdown of surveillance services, which have low capacity to identify cases and difficulties in isolating cases in a timely manner. There are also the limitations of establishing a transparent, agile health information system capable of recording and disseminating data in real time, limited training actions for health workers, and insufficient communication initiatives for the population and in to combat stigma. Quick and coordinated actions are urgent and essential.

In this scenario, efforts are needed to:

- define clinical protocols and therapeutic guidelines for the health care network;
- implement a unified information system to record confirmed and suspected cases, considering clinical, epidemiological and sociodemographic aspects, ensuring the transparency of health information for the population and health professionals, as well as its decentralization to the three federated entities;
- expand resources for structuring, qualification and decentralization of epidemiological and laboratory surveillance services. Case investigation and contact tracing are essential to provide necessary clinical care, isolate cases (to stop transmission), and monitor contacts. Despite the increase in diagnostic capacity during the COVID-19 pandemic, laboratory diagnosis of Monkeypox is performed in only four reference institutions in the Southeast Region, which makes it difficult to identify cases in a timely manner, especially in historically neglected locations such as the vast Brazilian Amazon;
- invest in MPXV genomic surveillance and integration with epidemiological surveillance. Increase and articulate partnerships to systematically organize orthopoxvirus genomic surveillance in the country;
- train and educate health professionals on epidemiological and clinical profile of the disease, as well as to establish devices for monitoring scientific evidence;
- design and organize communication campaigns and actions aimed at health risks for the population addressing the disease, its signs, symptoms, preventive measures and the fight against stigma, with the active participation of communities; to incorporate these actions aiming at the public at greater risk in this initial stage of disease spread, basing actions on rights and scientific evidence that can avoid stigmatization;
- continuously monitor, plan and evaluate prevention measures, incorporate vaccines and existing medicines, their use and define priority groups while planning actions to the population as a whole;
- with proactivity of the Ministry of Health, approve and acquire medicines and vaccines and/or investments in the national production of the immunobiological agent; and
- invest in research on epidemiological diagnosis, monitoring and evaluation of social impacts.

Although initially the disease is mild in healthy patients and the risk of complications is greater in children, preg-

nant women and immunocompromised patients, the lack of coordinated and planned measures is very worrying in a country marked by social inequalities. Brazil, immersed in a health, economic and political crisis, keeps making the same mistakes while managing this new health emergency—mistakes that produced dramatic impacts on the health of Brazilians and resulted in hundreds of thousands of preventable deaths associated with COVID-19.

As in the fight against COVID-19, the distribution of medicines and vaccines already approved and administered in European countries and the United States is unequal, and developing regions suffer without access to these resources. Thus, in addition to national, there are also international inequalities.

Measures are urgently needed to adequately address this health emergency, with the coordination of multilateral agencies such as the WHO, so that all countries with cases of community transmission can respond to it. The lessons of the COVID-19 pandemic cannot be neglected, nor should the same mistakes be made, both nationally and internationally. Ensuring equal access to available resources to fight the disease is essential in the face of yet another public health emergency due to a communicable disease.

REFERENCES

1. World Health Organization. Monkeypox – United Kingdom of Great Britain and Northern Ireland [Internet]. 2022 [cited on Jul 22, 2022]. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON381>
2. World Health Organization. Enhance surveillance, public health measures for monkeypox: WHO [Internet]. 2022 [cited on Jul 24, 2022]. Available at: <https://www.who.int/southeastasia/news/detail/24-07-2022-enhance-surveillance--public-health-measures-for-monkeypox--who#:~:text=Globally%2C%20over%2016000%20cases%20of,been%20reported%20from%2075%20countries.>
3. World Health Organization. Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox [Internet]. 2022 [cited on Jul 23, 2022]. Available at: [https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-\(2005\)-\(ihr\)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox](https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox)
4. Titanji BK. Monkeypox-not doing enough is not a option. *BMJ* 2022; 378: o1631. <https://doi.org/10.1136/bmj.o1631>
5. Bunge EM, Hoet B, Chen L, Lienert F, Weidenthaler H, Baer LR, et al. The changing epidemiology of human monkeypox-A potential threat? A systematic review. *PLoS Negl Trop Dis* 2022;16 (2): e0010141. <https://doi.org/10.1371/journal.pntd.0010141>
6. World Health Organization. Multi-country monkeypox outbreak in non-endemic countries: update [Internet]. 2022 [cited on Jul 24, 2022]. Available at: <https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON388>
7. Kumar N, Acharya A, Gendelman HE, Byrareddy SN. The 2022 outbreak and the pathobiology of the monkeypox virus. *J Autoimmun* 2022; 131: 102855. <https://doi.org/10.1016/j.jaut.2022.102855>
8. Thornhill JP, Barkati S, Walmsley S, Rockstroh J, Antinori A, Harrison LB, et al. Monkeypox virus infection in humans across 16 countries - April-June 2022. *N Engl J Med* 2022. <https://doi.org/10.1056/NEJMoa2207323>
9. Brasil. Ministério da Saúde. Informe diário de Monkeypox. nº 07-25/07/2022, SE30. Situação Epidemiológica no Brasil. Distribuição dos casos confirmados de Monkeypox no Brasil até 25 de julho, 12h [Internet]. 2022 [cited on Jul 26, 2022]. Available at: <https://www.gov.br/saude/pt-br/composicao/svs/resposta-a-emergencias/sala-de-situacao-de-saude/sala-de-situacao-de-monkeypox/atualizacao-dos-casos-no-brasil/card-situacao-epidemiologica-de-monkeypox-no-brasil-ndeg-7-se-30-25-07-22/view>

AUTHORS' CONTRIBUTIONS: Boing, A.C.: conceptualization, writing – first draft, writing – review & editing, investigation, validation. Donalísio, M.R.: conceptualization, writing – review & editing, investigation, validation. Araújo, T.M.: conceptualization, writing – review & editing, investigation, validation. Muraro, A.P.: conceptualization, writing – review & editing, investigation, validation. Orellana, J.D.Y.: conceptualization, writing – review & editing, investigation, validation. Maciel, E.L.: conceptualization, writing – review & editing, investigation, validation.

FUNDING: none.



© 2022 | *Epidemiologia* is a publication of

Associação Brasileira de Saúde Coletiva - ABRASCO