

**Title:**

**The Grand Magal of Touba in the era of Monkeypox being a Global Public Health  
Emergency of International Concern - reducing risk for all epidemic prone infections**

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## EDITORIAL

The spread of a range of epidemic-prone infections pose perennial public health risks to global health security(1). Mass gathering religious, sporting and festival events are the focus of host countries and the World Health organization(WHO) since they attract millions of people from across the world and are known to create optimal conditions for importation, acquisition, transmission, and onward spread of infectious diseases(2,3). Recent global attention is focused on monkeypox (MPX). On 14<sup>th</sup> and 15<sup>th</sup> September 2022, one of the world's largest, recurring annual mass gathering religious pilgrimage event, The Grand Magal of Touba, will be held in the city of Touba, 200 kilometres east of the capital Dakar, Senegal(4). Around 4 million pilgrims will arrive in Touba from across West African countries, USA, Europe and Middle East. Pilgrims will live together performing religious rituals including partial circumambulation of the central mosque, and visit to the mausoleum of Cheikh Amadou Bamba founder of the Mouride brotherhood.

Whilst over the past two decades West African countries have experienced intermittent outbreaks of other epidemic-prone zoonoses such as Lassa Fever, Ebola, Yellow Fever and Marburg, currently, the focus of global public health authorities is now on the unprecedented monkeypox (MPX) epidemic(5). On 23rd July 2022, MPX was declared a Public Health Emergency of International Concern (PHEIC) by WHO(6). It is the seventh time such a declaration for an epidemic has been made. Previous PHEICs included 2009 H1N1 (swine flu), 2014 polio, 2013-2016 Ebola, 2015-16 Zika virus epidemic, the 2018-2020 Kivu Ebola epidemic, the COVID-19 in 2020(7). Monkeypox cases and clusters continue to be reported concurrently from both non-endemic and endemic countries in widely disparate WHO geographical areas. Between 1st January and 23rd July 2022, 16 016 laboratory confirmed cases of MPX, with five deaths, have been reported to WHO from 75 countries across all continents (5).

Cases reported from outside Africa have been mostly among gay, bisexual and men who have sex with men (MSM). Of 528 confirmed MPX cases studied in Europe, 95% were MSM (8). However, there has also been a significant rise in MPX cases reported from West and Central Africa over the past 3 years. Between September 2017 and 10 July 2022, Nigeria recorded over 800 cases of MPX in men women and children(5). Sexual transmission may have been overlooked in the 2017-2018 MPX outbreak in Nigeria(9) where 68% of patients had genital lesions, much higher than previously reported 3%-25% from the Democratic Republic of Congo and United States(10,11).

Whilst the WHO currently does not recommend any travel restrictions in lieu of the ongoing MPX outbreaks it has issued specific recommendations related to the optimal use of preventive public health and social measures, including the 3-step risk evaluation, risk mitigation and risk communication approach when planning mass gathering events(5). Mass gatherings attendees are expected to apply individual-level responsibility based on the risk-based approaches.

During the peak of COVID-19 pandemic, the 2020 and 2021 Grand Magal pilgrimages in Senegal went ahead as usual without any restrictions or scaling down, despite anticipated new waves of COVID-19 infections, onward global transmission with possible super spreader events. Importantly, the Senegalese government promoted social distancing and other safe practices and worked closely with WHO together with religious leaders through educational exercises for risk reduction(12,13), influencing pilgrims' behaviours in sensitive ways in the spirit of the religious gathering. A small cohort study at The Grand Magal in 2020 showed no significant increase in COVID-19(14). These invaluable experiences should be utilised also for the MPX context during the forthcoming 2022 Grand Magal of Touba pilgrimage. The WHO and the international community must urgently make available Monkeypox diagnostics, treatments, vaccines and resources for administration to pilgrims and local populations in West and Central Africa should suspected cases of MPX occur. It becomes important that if cases of MPX occur at The Grand Magal of Touba, contact tracing and, if possible, MPX vaccination of close contacts is instituted. Since MSM in Senegal is illegal, this mode of transmission will most probably be missed.

Compared to two other large annual mass gathering religious events, The Hajj in Saudi Arabia and the Kumbh Mela in India(15), The Grand Magal of Touba, despite having over 4 million attendees, has not yet featured prominently in the global dialogue on mass gathering events. Over 90% of research publications on Muslim religious events are related to the Hajj(16). Since The Grand Magal is one of the world's largest annually recurring events, and West African countries are epicentres of zoonotic disease outbreaks including MPX, it is vital that it features prominently on the radar of global public health authorities. This will also enable global public health authorities, countries hosting mass gathering religious events to benefit from shared experiences and drive priority research to obtain the best evidence-based public health prevention measures for all epidemic prone infections, including MPX. The issue of MSM, transmission of MPX and other sexually transmitted infections at all mass gathering religious events also requires frank and open discussion.

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**Author Declarations:**

All authors have an interest in high consequence pathogens and mass gatherings. All authors declare no conflicts of interest (COI forms have been submitted to BMJ). The views expressed in this comment are the authors' own and not of their institutions

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## References

1. Al Rabeeah A, Memish ZA, Zumla A, Shafi S, McCloskey B, Moolla A, et al. Mass gatherings medicine and global health security. *Lancet*. 2012 Jul 7;380(9836):3-4. doi: 10.1016/S0140-6736(12)61073-3. PMID: 22770444.
2. Petersen E, Memish ZA, Zumla A, Maani AA. Transmission of respiratory tract infections at mass gathering events. *Curr Opin Pulm Med*. 2020 May;26(3):197-202. doi: 10.1097/MCP.0000000000000675. PMID: 32149751.
3. Zumla A, Traore T, Amao L, Ntoumi F, Sharma A, Azhar EI, et al. Reducing the threat of epidemic-prone infections at mass gathering religious events. *Lancet*. 2022 Jul 9;400(10346):80-82. doi: 10.1016/S0140-6736(22)01194-1. Epub 2022 Jun 27. PMID: 35772412.
4. Serigne DS, Mbacke S, Cultural Commission of Mourides. Grand Magal of Touba: The Ritual Acts of the Thanksgiving on the Occasion of the Magal of Touba. 2004 1-42. ISBN-10 : 1503278344, ISBN-13: 978-1503278349. Publisher: CreateSpace Independent Publishing Platform.
5. WHO. 2022: Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox. <https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--2---25-july-2022> -accessed 8th August 2022.
6. WHO 2022: WHO Director-General's statement at the press conference following IHR Emergency Committee regarding the multi-country outbreak of monkeypox - 23 July 2022. <https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-the-press-conference-following-IHR-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox--23-july-2022> -accessed July 23rd 2022.
7. WHO 2019: Emergencies: International health regulations and emergency committees. <https://www.who.int/news-room/questions-and-answers/item/emergencies-international-health-regulations-and-emergency-committees> (Accessed 23rd July, 2022)
8. Thornhill JP, Barkati S, Walmsley J, Rockstroh A, Antinori L.B, Harrison et al. Monkeypox Virus Infection in Humans across 16 Countries – April-June 2022. *New Engl J Med* 21 July 2022. DOI: 10.1056/NEJMoa2207323
9. Ogoina D, Iroezindu M, James HI, Oladokun R, Yinka-Ogunleye A, Wakama P et al. Clinical Course and Outcome of Human Monkeypox in Nigeria. *Clin Infect Dis* 2020; 71:e210-14. DOI: 10.1093/cid/ciaa143
10. Jezek Z, Szczeniowski M, Paluku KM, Mutombo M. Human monkeypox: clinical features of 282 patients. *J Infect Dis*. 1987; 156:293-8.
11. Huhn GD, Bauer AM, Yorita K, et al. Clinical characteristics of human monkeypox, and risk factors for severe disease. *Clin Infect Dis* 2005; 41:1742-51.
12. WHO 2021: Safe practices during the Pilgrimage to the Grand Magal of Touba in Senegal during the COVID-19 Pandemic.

<https://www.who.int/about/accountability/results/who-results-report-2020-mtr/country-story/2020/safe-practices-during-the-pilgrimage-to-the-grand-magal-of-touba-in-senegal-during-the-covid-19-pandemic> -accessed July 20th, 2022

13. Sokhna C, Mboup BM, Goumbala N, Dieng M, Sylla AB, Raoult D, et al. Establishing Medical Coverage and Epidemiological Surveillance during the Grand Magal of Touba in Senegal: A Public Health Need. *J Epidemiol Glob Health*. 2020 Dec;10(4):247-249. doi: 10.2991/jegh.k.200620.001. Epub 2020 Jun 26. PMID: 32959622; PMCID: PMC7758853.

14. Goumballa N, Sambou M, Bassene H, Dieng M, Aidara A, Fenollar F, et al. High influenza A prevalence but no SARS-CoV-2 among 2021 Grand Magal pilgrims in Touba, Senegal. *Travel Med Infect Dis*. 2021 Nov-Dec;44:102189. doi: 10.1016/j.tmaid.2021.102189. Epub 2021 Oct 22. PMID: 34695566.

15. Memish ZA, Steffen R, White P, Dar O, Azhar EI, Sharma A et al. Mass gatherings medicine: public health issues arising from mass gathering religious and sporting events. *Lancet*. 2019 May 18;393(10185):2073-2084. doi: 10.1016/S0140-6736(19)30501-X.

16. Sweileh WM. Health-related research publications on religious mass gatherings of Muslims: a bibliometric analysis (1980-2020). *Trop Dis Travel Med Vaccines*. 2022 Jan 4;8(1):1. doi: 10.1186/s40794-021-00158-y. PMID: 34980277