

# Weekly Evidence Report



Health Technology Assessment Philippines

10 – 16 December 2022

## Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Division reviewed for the period of 10 – 16 December 2022 on current public health emergency concerns, COVID-19 and monkeypox. The HTA Division reviewed a total of 17 studies for COVID-19 and 11 studies for monkeypox.

For COVID-19, evidence includes 3 studies on Epidemiology; 4 studies on Vaccines; 2 studies on Drugs; 2 studies on Transmission; 0 studies on Equipment and Devices; 0 studies on Medical and Surgical Procedures; 2 studies on Traditional Medicine; 1 study on Preventive & Promotive Health; and 3 studies on Other Health Technologies.

For monkeypox, evidence includes 5 studies on Epidemiology; 2 studies on Vaccines; 0 studies on Drugs; 2 studies on Transmission; 0 studies on Equipment and Devices; 0 studies on Medical and Surgical Procedures; 0 studies on Traditional Medicine; 2 studies on Preventive & Promotive Health; and 0 studies on Other Health Technologies.



## Sections

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Epidemiology

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Vaccines

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Drugs

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Transmission

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Traditional Medicine

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Equipment & Devices

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Medical & Surgical Procedures

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Preventive & Promotive Health

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Other Health Technologies

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# COVID-19

## Evidence on Epidemiology (1 of 2)

### Local COVID-19 Case Tracker:

[https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX\\_VVSGA-Hm00Pt5\\_CscykID7xZv4zqlXG5vm9PM2xoC27QQAvD\\_BwE](https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX_VVSGA-Hm00Pt5_CscykID7xZv4zqlXG5vm9PM2xoC27QQAvD_BwE)

Date	Author/s	Title	Journal/ Article Type	Summary
11 Dec 2022	<a href="#">WHO Global</a>	Weekly epidemiological update on COVID-19 - 11 December 2022	<i>WHO COVID-19 Weekly Epidemiological update</i>	<ul style="list-style-type: none"> <li>The number of new weekly COVID-19 cases globally have remained stable during the week 5 to 11 December 2022 as compared to the previous week.</li> <li>The number of new weekly deaths increased by 10% as compared to the previous week, with about 9700 fatalities reported.</li> <li>As of 11 December 2022, over 645 million confirmed cases and over 6.6 million deaths have been reported globally.</li> </ul>
16 Dec 2022	<a href="#">Isath et al.</a>	COVID-19, Heart Failure Hospitalizations, and Outcomes: A Nationwide Analysis	<i>Cell Press/ Retrospective Cohort Study</i>	<ul style="list-style-type: none"> <li>The study conducted a population-based analysis using a large national representative database in the United States to compare the characteristics and outcomes of adult patients hospitalized with Heart Failure (HF) with and without concomitant COVID-19. In this large, national propensity-matched analysis of more than 1 million in-patient admissions, researchers found that the overall mortality among patients with HF who were hospitalized in 2020 with contaminant COVID-19 was 8.2%.</li> <li>A weighted total of 1,110,085 hospitalizations for HF were identified of which 7,905 patients (0.71%) had a concomitant diagnosis of COVID-19. After propensity matching, HF patients with COVID-19 had higher rate of in-hospital mortality (8.2% vs. 3.7%; odds ratio [OR]: 2.33 [95% confidence interval [CI]: 1.69, 3.21]; p &lt; 0.001), cardiac arrest (2.9% vs. 1.1%, OR 2.21 [95% CI: 1.24, 3.93]; p &lt; 0.001), and pulmonary embolism (1.0% vs. 0.4%; OR 2.68 [95% CI: 1.05, 6.90]; p = 0.0329).</li> <li>COVID-19 was also found to be an independent predictor of mortality with approximately double the risk of mortality in patients hospitalized with HF.</li> </ul>

# COVID-19

## Evidence on Epidemiology (2 of 2)

### Local COVID-19 Case Tracker:

[https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX\\_VVSGA-Hm00Pt5\\_CscykID7xZv4zqlXG5vm9PM2xoC27QQA vD\\_BwE](https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX_VVSGA-Hm00Pt5_CscykID7xZv4zqlXG5vm9PM2xoC27QQA vD_BwE)

Date	Author/s	Title	Journal/ Article Type	Summary
16 Dec 2022	<a href="#">Zuin et. al</a>	Increased risk of acute myocardial infarction after COVID-19 recovery: A systematic review and meta-analysis	<i>International Journal of Cardiology/ Systematic Review and Meta-analysis</i>	<ul style="list-style-type: none"> <li>COVID-19 patients showed an increased risk of incident AMI (HR: 1.93, 95% CI: 1.65–2.26, <math>p &lt; 0.0001</math>, <math>I^2 = 83.5\%</math>). Meta-regression analysis demonstrated that the risk of AMI was directly associated with age (<math>p = 0.01</math>) and male gender (<math>p = 0.001</math>), while an indirect relationship was observed when the length of follow-up was utilized as moderator (<math>p &lt; 0.001</math>).</li> <li>Of &gt;20 million subjects, findings showed that AMI occurred in about 0.5% of COVID-19 recovered patients over the follow-up period. Furthermore, after COVID-19 recovery, survivors had an approximately 93% excess in the risk of AMI, which was inversely related with the length of the follow-up. Notably, the incidence and the risk of AMI in COVID-19 recovered patients resulted higher compared to controls over a mean follow-up of 8.5 months.</li> </ul>

**Evidence on Vaccines (1 of 3)****Bloomberg Vaccine Tracker:** <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>**WHO COVID-19 Vaccine Tracker:**<https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>**WHO SAGE Vaccine Recommendations:**<https://www.who.int/groups/strategic-advisory-group-of-experts-on-immunization>**Local COVID-19 Vaccine Updates:** <https://doh.gov.ph/vaccines>

<b>Date</b>	<b>Author/s</b>	<b>Title</b>	<b>Journal/ Article Type</b>	<b>Summary</b>
13 Dec 2022	<a href="#">WHO</a>	COVID-19 vaccine tracker and landscape	<i>WHO/ Tracker and landscape</i>	<ul style="list-style-type: none"> <li>As of 13 December 2022, there are 175 COVID-19 vaccines in clinical development and 199 COVID-19 vaccines in pre-clinical development worldwide.</li> </ul>
14 Dec 2022	<a href="#">Wang et. al</a>	Alarming antibody evasion properties of rising SARS-CoV-2 BQ and XBB subvariants	CellPress/ In vitro clinical cohort study	<ul style="list-style-type: none"> <li>COVID-19 vaccines have been shown to remain effective at preventing hospitalization and severe disease even against Omicron as well as possibly reducing the risk of post-acute sequelae of COVID-19 (PASC or long COVID).</li> <li>The study data demonstrated that the new subvariants of omicron virus were barely susceptible to neutralization by sera from vaccinated individuals with or without prior infection, including persons recently boosted with the new bivalent (WA1- BA.5) mRNA vaccines</li> <li>The result also showed that the new subvariants were completely or partially resistant to neutralization by most monoclonal antibodies tested, including those with Emergency Use Authorization. SARS-CoV-2 variants continue to evolve and evade. This challenge highlights the significance of developing vaccine and monoclonal antibody approaches that protect broadly and anticipate the antigenic trajectory of SARS-CoV-2.</li> </ul>

**Evidence on Vaccines (2 of 3)****Bloomberg Vaccine Tracker:** <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>**WHO COVID-19 Vaccine Tracker:**<https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>**WHO SAGE Vaccine Recommendations:**<https://www.who.int/groups/strategic-advisory-group-of-experts-on-immunization>**Local COVID-19 Vaccine Updates:** <https://doh.gov.ph/vaccines>

Date	Author/s	Title	Journal/ Article Type	Summary
14 Dec 2022	<a href="#">Ibroci et. al</a>	Impact of prenatal COVID-19 vaccination on delivery and neonatal outcomes: Results from a New York City cohort	The Japanese Society for Vaccinology/ Prospective Cohort Study	<ul style="list-style-type: none"> <li>• The study aimed to investigate the associations of COVID-19 vaccination throughout pregnancy with delivery and neonatal outcomes. Overall, there were 55 non-live birth pregnancy outcomes out of 1,849 delivery encounters (3%). Of the 1,849 delivery encounters, 1,596 were unvaccinated and 253 were vaccinated. Among those unvaccinated (n = 1,596), 34 (2%) experienced spontaneous abortions, 3 (0.2%) experienced intrauterine fetal demise, and 15 (1%) had induced abortions. Of the vaccinated participants with a delivery encounter (n = 253), one experienced intrauterine fetal demise (0.4%) and two (0.8%) had an induced abortion. No spontaneous abortions occurred in the vaccinated group.</li> <li>• Results from the secondary analysis, which examined selected delivery and neonatal outcomes by trimester of COVID-19 vaccine initiation, showed no trimester-specific effects of the COVID-19 vaccine on birthweight, delivery gestational age, quantitative blood loss at delivery, or mode of delivery</li> <li>• COVID-19 vaccination during pregnancy was not adversely associated with birth weight, gestational age at delivery, blood loss at delivery, mode of delivery, and NICU admission in a prospective cohort sample from New York City. Further, there were no findings related to trimester-specific effects of the COVID-19 vaccine on these delivery and birth outcomes.</li> </ul>

**Evidence on Vaccines (3 of 3)****Bloomberg Vaccine Tracker:** <https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>**WHO COVID-19 Vaccine Tracker:**<https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>**WHO SAGE Vaccine Recommendations:**<https://www.who.int/groups/strategic-advisory-group-of-experts-on-immunization>**Local COVID-19 Vaccine Updates:** <https://doh.gov.ph/vaccines>

<b>Date</b>	<b>Author/s</b>	<b>Title</b>	<b>Journal/ Article Type</b>	<b>Summary</b>
16 Dec 2022	<a href="#">Surie et. al</a>	Early Estimates of Bivalent mRNA Vaccine Effectiveness in Preventing COVID-19–Associated Hospitalization Among Immunocompetent Adults Aged ≥65 Years — IVY Network, 18 States, September 8–November 30, 2022	CDC/ Press Release	<ul style="list-style-type: none"> <li>• The Investigating Respiratory Viruses in the Acutely Ill (IVY) Network assessed effectiveness of a bivalent booster dose received after ≥2 doses of monovalent mRNA vaccine against COVID-19–associated hospitalization among immunocompetent adults aged ≥65 years. When compared with unvaccinated persons, VE of a bivalent booster dose received ≥7 days before illness onset (median = 29 days) against COVID-19–associated hospitalization was 84%</li> <li>• Result showed that among immunocompetent adults aged ≥65 years hospitalized in the multistate IVY Network, a bivalent booster dose provided 73% additional protection against COVID-19 hospitalization compared with past monovalent mRNA vaccination only.</li> <li>• Further, a recent findings from the United Kingdom and the United States have also demonstrated protection of a bivalent mRNA booster dose against COVID-19 hospitalization. Further, a report among adults aged ≥18 years from the VISION Network in the United States using BA.4/BA.5 bivalent booster doses showed a relative VE of 42% (95% CI = 19%–58%) against COVID-19–associated hospitalization compared with ≥2 monovalent COVID-19 vaccine doses received 8–10 months earlier. In general, the results of the aforementioned study were similar to the relative VE findings in the current study, suggesting that bivalent booster doses provide important benefits.</li> </ul>

## Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
11 Dec 2022	<a href="#">Rao et. al</a>	Susceptibility of SARS Coronavirus-2 infection in domestic and wild animals: a systematic review	Biotech/ Systematic Review	<ul style="list-style-type: none"> <li>SARS-CoV-2 variations are now being studied for their impact on the effectiveness of existing vaccinations, treatments, and diagnostics. The SARS-CoV-2 virus has been associated with cross-species jumping in animals, raising zoonotic concerns about the possibility of reintroduction into human populations by interspecies transmission between people and animals.</li> <li>Several mammals, including cats, dogs, bank voles, ferrets, fruit bats, hamsters, mink, pigs, rabbits, racoon dogs, and white-tailed deer, have been found to be infected naturally by the virus. Certain laboratory discoveries revealed that animals such as cats, ferrets, fruit bats, hamsters, racoon dogs, and white-tailed deer can spread the illness to other animals of the same species. This review article gives insights on the current knowledge about SARS-CoV-2 infection and development in animals on the farm and in domestic community and their impact on society.</li> </ul>
11 Dec 2022	<a href="#">Kouidere et. al</a>	Cost-effectiveness of a Mathematical Modeling with optimal control Approach of Spread of COVID-19 Pandemic: a case study in Peru	Chaos, Solitons & Fractals/ Case Study	<ul style="list-style-type: none"> <li>In this paper, a mathematical model of transmission of COVID-19 virus was introduced in Peru. in order to minimize the number of infected and infected with serious complications and number of people in quarantine.</li> <li>The optimal control strategy based on the model to prevent and reduce the spread COVID-19 virus, are conducting awareness campaigns and quarantine with treatment. coronavirus 2019 (COVID-19). Therefore, the numerical simulation of the obtained results showed the effectiveness of the proposed control strategies.</li> </ul>

## Evidence on Traditional Medicine

Date	Author/s	Title	Journal/ Article Type	Summary
10 Dec 2022	<a href="#">Sun et. al</a>	Model exploration for discovering COVID-19 targeted Traditional Chinese medicine	Heliyon Open Access Journal/ Research Article	<ul style="list-style-type: none"> <li>• This article established a complete COVID-19 targeted drug discovery model, and a multi-dimensional integrated effect evaluation system of molecules, cells, and animals was constructed. 19 Targeted traditional Chinese medicine (TCM) treatment provides new ideas and directions based on experiments and lays a good foundation for future clinical work.</li> <li>• Through functional activity testing, biophysical detection of compound binding to target proteins, multidimensional pharmacodynamic evaluation systems of cells (Vero E6, Vero, Vero81, Huh7, and caca2) and animals (mice infected with the new coronavirus, rhesus macaques, and hamsters), the effectiveness of effective preparations was evaluated, and various efficacy effects including lung moisturizing, dehumidification and detoxification were obtained.</li> <li>• Using modern technology, it is now possible to understand how the immune system is controlled, how inflammation is reduced, and how various organs are protected. Complete early drug characterization and finally obtain effective targeted TCM.</li> </ul>
13 Dec 2022	<a href="#">Zhong et. al</a>	Acupuncture for olfactory dysfunction in infected COVID-19 patients: study protocol for a randomized, sham-controlled clinical trial	Journal of Traditional Chinese Medical Sciences/ Single-blind Randomized Controlled Trial	<ul style="list-style-type: none"> <li>• In this randomized controlled trial, qualified patients were randomly allocated to the intervention group (real acupuncture) or the control group (sham acupuncture) at a 1:1 ratio. Each patient has received 8 sessions of treatment over 4 weeks (Cycle 1) and a 2-week follow-up. After the follow-up, the control group will be subjected to real acupuncture for another 4 weeks (Cycle 2), and the real acupuncture group will undergo the 4-week sham acupuncture.</li> <li>• It has been suggested that olfactory function may recover spontaneously. Among 18 studies with 3699 patients, 74.1%, 85.8%, 90.0%, and 95.7% of patients recovered their sense of smell at 30, 60, 90, and 180 days, respectively. The median recovery time was 14.9 days. Moreover, patients with higher initial severity of smell dysfunction were less likely to recover the olfactory function.<sup>31</sup> Therefore, the possibility of spontaneous recovery of the olfaction should be taken into account</li> </ul>



## Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
13 Dec 2022	<a href="#">Pereta et. al</a>	Hospital at Home treatment with Remdesivir for patients with COVID-19: Real life experience	International Journal of Infectious Diseases/ Prospective Cohort Study	<ul style="list-style-type: none"> <li>The study aim is to describe the real-life experience of outpatient remdesivir infusion for COVID-19 in a Hospital at Home unit. Two-hundred thirty-six patients admitted in hospital at home (HaH) received remdesivir, from whom 172 were treated at home. Only 2% presented any adverse event related to the infusion, all of them mild. HaH saved 1416 day-beds, with only 5% of the patients requiring transfer back to hospital.</li> <li>It was concluded that remdesivir infusion in Hospital at Home units seems to be a safe and efficient alternative to conventional hospitalization for treating non-severe COVID-19 patients.</li> </ul>
16 Dec 2022	<a href="#">Coelingh Bennink et. al</a>	Testosterone suppression combined with high dose estrogen as potential treatment of SARS-CoV-2. A mini review	Heliyon Open Access Journal/ Review Article	<ul style="list-style-type: none"> <li>Literature was searched for evidence of COVID-19 treatment benefits with estrogens, progesterone, androgen deprivation, and anti-androgens.</li> <li>Data supporting the effect of ADT on SARS-CoV-2 are sparse and inconsistent. The benefit of anti-androgen therapy is inconsistent. Data on the effect of ET were not found. Indirect estrogen data related to menopausal hormone therapy and hormonal contraception are favorable. In a small study, progesterone had some beneficial effects.</li> <li>The combination of ADT and ET (ADET) has never been studied as a treatment option for SARS-CoV-2. Based on the mode of action of the combination, it is hypothesized that ADET may be an effective and safe treatment of SARS-CoV-2, to be confirmed in a clinical trial.</li> </ul>

## Evidence on Preventive & Promotive Health

### Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
12 Dec 2022	<a href="#">Bwambale et. al</a>	Willingness to pay for COVID-19 mitigation measures in public transport and paratransit in low-income countries	Transportation Research Policy and Practice/ Review Article	<ul style="list-style-type: none"> <li>The paper reviewed the presence of a potential market for safety measures in the public transport and paratransit sectors. The authors have estimated the passengers' willingness to pay for such mitigation measures in low-income countries such as Kampala and Dhaka. The result showed that public transport and paratransit users in both cities are willing to pay extra for all the COVID-19 mitigation measures considered in this study.</li> <li>In particular, the average willingness to pay for social distancing was more than 100 % of the current average public transport fares in both cities. Given that this particular measure was implemented along with 100 % and 60% increases in actual fares in Kampala and Dhaka</li> </ul>

### Evidence on Personal Measures

Date	Author/s	Title	Journal/ Article Type	Summary
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### Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
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## Evidence on Other Health Technologies (1 of 2)

Date	Author/s	Title	Journal/ Article Type	Summary
13 Dec 2022	<a href="#">Ali et. al</a>	COVID-19 spread control policies based early dynamics forecasting using deep learning algorithm	Chaos, Solitons & Fractals/ Review Article	<ul style="list-style-type: none"> <li>• This paper proposed the control policies-based COVID-19 parameters forecasting in South Korea using stacked Bi-LSTM architecture. The authors have presented the comparison between the accuracy of stacked Bi-LSTM with classical time-series models VAR, ARIMA, SARIMA, and LSTM. It is observed that Bi-LSTM performs better than traditional models and LSTM for forecasting COVID-19 cases, considering the past three days' historical data.</li> <li>• There were ten policies, such as school closure, restrictions on international movement, restrictions on large gatherings, contact tracing, facial covering (face mask), internal travel (between cities), public event cancellation, stay-at-home restrictions, and vice versa, to forecast the future value of COVID-19 positive confirmed, recovered, death, and quarantine cases. The model is trained using a single policy, two pairs, and three pairs of policies, and finally, all the policies are taken as input altogether. The single policies that gave the best results are School closing, Workspace closing, public event cancellation, large gatherings, public information campaigns, and contact tracing policy.</li> <li>• In the case of two-pair policies, the best results are given by School and workspace closing, secondly school closing and cancellation of public events. In case of three pair policies, the best forecasting results are yielded by School, workspace closing and public event cancellation with MAE of 186.55, 6.809, 179.21 and 322.13 for positive, death, recovered and deceased cases, respectively. It was concluded that the aforementioned three pairs of policies performed better than all other pairs.</li> </ul>

## Evidence on Other Health Technologies (2 of 2)

Date	Author/s	Title	Journal/ Article Type	Summary
14 Dec 2022	<a href="#">Chaudhary et. al</a>	Recent Advances of Nanotechnology in COVID 19: A critical review and future perspective	OpenNano/ Review Article	<ul style="list-style-type: none"> <li>• The delivery of anti-COVID 19 cargos <i>via</i> a nanoparticle such as Lipidic nanoparticles, Polymeric nanoparticles, Metallic nanoparticles, and Multi-functionalized nanoparticles to overcome the drawbacks of conventional approaches, specifying the site-specific targeting with reduced drug loading and toxicities, exhibit their immense potential. The rapid, highly sensitive and more accurate potentiality of this diagnostic nano-technological equipment strongly provides arrays for early detection of COVID 19.</li> <li>• Additionally, nano-technological based drug delivery with their peculiar characteristics of having low immunogenicity, tunable drug release, multidrug delivery, higher selectivity and specificity, higher efficacy and tolerability switch on the novel pathway for the prevention and treatment of COVID 19.</li> <li>• Upcoming deadliest viral infections can also be easily diagnosed, treated and prevented through a nano-technological approach. However, limited potent toxicities associated with administered NPs, equally need to be focused on and comprehensively investigated but the beneficial outcomes of this novel nano-technological backbones greatly overcome the hurdles and barriers associated with drug delivery.</li> </ul>
14 Dec 2022	<a href="#">Dhasarathan et. al</a>	COVID-19 health data analysis and personal data preserving: A homomorphic privacy enforcement approach	International Journal for Computer and Telecommunications Industry/ Review Article	<ul style="list-style-type: none"> <li>• This paper addresses the homomorphic standard system functionality, which refers to all the functional aspects of deep learning system requirements in COVID-19 health management. Moreover, this paper spotlights the metric privacy incorporation for improving the Deep Learning System (DPLS) approaches for solving the healthcare system's complex issues. It is absorbed from the result analysis Homomorphic-based privacy observation metric gradually improves the effectiveness of the deep learning process in COVID-19-health care management.</li> <li>• In this article, it is brought to the notice of the research forum that there is a need for a deep learning process to map the fitness of the learning system using multi-agent. However, deep learning systems might reach a better era if the applicability and maintenance could be performed by improving the efficiency, portability, trustworthiness, functionality, reusability, testability, and security of current social impacts.</li> </ul>

### Evidence on Medical and Surgical Procedures

Date	Author/s	Title	Journal/ Article Type	Summary
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### Evidence on Equipment and Devices

Date	Author/s	Title	Journal/ Article Type	Summary
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# MONKEYPOX

## Evidence on Epidemiology (1 of 3)

### Monkeypox Case Tracker:

**WHO:** <https://extranet.who.int/publicemergency/#>

**US CDC:** <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html>

Date	Author/s	Title	Journal/ Article Type	Summary
14 Dec 2022	<a href="#">WHO</a>	WHO Multi-country Outbreak of Monkeypox	<i>WHO Situation Report</i>	<ul style="list-style-type: none"> <li>A total of 82,624 monkeypox cases have been reported globally; 4 of which are from the Philippines.</li> </ul>
10 Dec 2022	<a href="#">Sham et al 2022</a>	<i>The Changing Global Epidemiology of Re-emerging Human Monkeypox Virus Infection: A Systematic Review</i>	<i>MedRxiv/ Systematic Review</i>	<ul style="list-style-type: none"> <li>This study is a systematic review of 25 monkeypox related peer-reviewed literature from 2018-2022. Recent global outbreaks, the rising incidence in young adults and endemic zones might result from smallpox vaccine cessation. Increased risk with sick animal exposure or sleeping on the floor suggests high infectivity from animal excretions. Increasing awareness, strict surveillance, and contact tracing can contain global outbreaks. Ring vaccination approach to exposed people can also be a strategy. Future studies should investigate to determine measures for rapid laboratory diagnosis, maintaining lab safety, and also transmissibility.</li> </ul>
12 Dec 2022	<a href="#">Sukhdeo et al</a>	<i>Human monkeypox: a comparison of the characteristics of the new epidemic to the endemic disease</i>	<i>BMC Infectious Diseases/ Review of literature</i>	<ul style="list-style-type: none"> <li>There are many features of the 2022 human monkeypox outbreak that are different from the historical endemic cases. Clinicians need a better understanding of the clinical presentation, risk factors for severe disease and complications to allow for optimal diagnosis and care for people with mpox. Research is needed to gain a clear understanding of how genetic mutations may affect phenotypic disease, affect the molecular methods used to detect MPXV and diagnose disease, and affect the potential for antiviral resistance.</li> </ul>

## Evidence on Epidemiology (2 of 3)

## Monkeypox Case Tracker:

WHO: <https://extranet.who.int/publicemergency/#>US CDC: <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html>

Date	Author/s	Title	Journal/ Article Type	Summary
13 Dec 2022	<a href="#">US CDC</a>	<i>Clinical Considerations for Treatment and Prophylaxis of Monkeypox Virus Infection in People with HIV and Other Immunocompromising Conditions</i>	<i>US CDC Clinical Guidance</i>	<ul style="list-style-type: none"> <li>Expanded to include considerations for treatment and prophylaxis of Monkeypox virus infection in people with immunocompromising conditions other than HIV.</li> </ul>
13 Dec 2022	<a href="#">UKHSA</a>	<i>Mpox (monkeypox) outbreak: epidemiological overview.</i>	<i>UKHSA Epidemiological Overview</i>	<ul style="list-style-type: none"> <li>Up to 12 December 2022 there were 3,582 confirmed and 148 highly probable mpox cases detected in the UK: 3,730 in total. Of these, 97 were in Scotland, 34 were in Northern Ireland, 47 were in Wales and 3,552 were in England.</li> </ul>
13 Dec 2022	<a href="#">Harrison et al</a>	Monkeypox in Montréal: Epidemiology, Phylogenomics, and Public Health Response to a Large North American Outbreak	<i>Annals of Internal Medicine/ Epidemiologic surveillance</i>	<ul style="list-style-type: none"> <li>Up to 18 October 2022, a total of 402 cases of monkeypox were reported mostly among men who have sex with men (MSM), most of which were suspected to be acquired through sexual contact. All monkeypox genomes nested within the B.1 lineage. Montréal Public Health worked closely with the affected communities to control the outbreak, becoming the first jurisdiction to offer 1 dose of the Modified Vaccinia Ankara-Bavarian Nordic vaccine as preexposure prophylaxis (PrEP) to those at risk in early June 2022. Two peaks of cases were seen in early June and July (43 and 44 cases per week, respectively) followed by a decline toward near resolution of the outbreak in October. Reasons for the biphasic peak are not fully elucidated but may represent the tempo of vaccination and/or several factors related to transmission dynamics and case ascertainment.</li> </ul>

**Evidence on Epidemiology (3 of 3)****Monkeypox Case Tracker:****WHO:** <https://extranet.who.int/publicemergency/#>**US CDC:** <https://www.cdc.gov/poxvirus/monkeypox/response/2022/index.html>

Date	Author/s	Title	Journal/ Article Type	Summary
13 Dec 2022	<a href="#">Damavandi et al</a>	A Review of Monkeypox Ocular Manifestations and Complications: Insights for the 2022 Outbreak	<i>Ophthalmology and therapy/ Systematic Review</i>	<ul style="list-style-type: none"> <li>• The study is a review of the clinical signs and symptoms of the present and former outbreaks, differential diagnoses, workup and treatment of the ocular manifestations of MPXV infection in detail. MPXV can manifest as eye redness, frontal headache, orbital and peri-ocular rashes, lacrimation and ocular discharge, subconjunctival nodules and, less frequently, as keratitis, corneal ulceration, opacification, perforation and blindness.</li> <li>• Despite a lack of definite and established treatment, simple therapies like regular lubrication and prophylactic use of topical antibiotics may be considered for MPXV ocular complications. Timely administration of specific antivirals may also be effective in severe cases. Monkeypox usually has mild to moderate severity and a self-limited course. However, timely recognition and proper management of the disease could reduce the risk of permanent ocular sequelae and disease morbidity.</li> </ul>



## Evidence on Vaccines

Date	Author/s	Title	Journal/ Article Type	Summary
12 Dec 2022	<a href="#">Yousaf and Naz 2022</a>	<i>Exploring B and T-cell epitopes for constructing a Novel Multi-epitope vaccine to combat emerging Monkeypox infection: A Reverse Vaccinology approach</i>	<i>BioRxiv/ In silico study</i>	<ul style="list-style-type: none"> <li>This <i>in silico</i> study concludes that the surface protein of monkeypox virus is one of the major culprit antigens in mediating the disease. It aimed to provide a design of highly putative vaccine candidate using the reverse vaccinology approach. The designed vaccine based on the rationale target protein is proven to be highly effective contrary to traditional vaccines with several drawbacks including toxicity and allergic reactions with lower efficacy of the administered vaccine, will be highly applicable to the future formulation of any prophylactic or therapeutic therapies against the monkeypox virus disease.</li> </ul>
14 Dec 2022	<a href="#">Bertran et al 2022</a>	<i>Effectiveness of one dose of MVA-BN smallpox vaccine against monkeypox in England using the case-coverage method</i>	<i>MedRxiv/ Case-Coverage Study</i>	<ul style="list-style-type: none"> <li>This case-coverage study implies that a single dose of MVA-BN is highly protective against monkeypox disease and provides a useful tool for outbreak control when rapid protection may be needed. Given the lack of effectiveness in the first 13 days after the first dose and a median incubation period of 8-9 days after exposure to the virus, vaccination is likely to be most effective when offered as pre-exposure rather than prophylaxis. Because of the high vaccine effectiveness after one MVA-BN dose, in outbreaks where number of at-risk individuals exceed vaccine supply of two-doses, there may be benefit in prioritising delivery of first doses at the expense of delaying the second dose.</li> </ul>

## Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
12 Dec 2022	<a href="#">Suñer et al</a>	Viral dynamics in patients with monkeypox infection: a prospective cohort study in Spain	<i>The Lancet Infectious Diseases/prospective cohort study</i>	<ul style="list-style-type: none"> <li>The study interprets that in immunocompetent patients with mild monkeypox disease, PCR data alone would suggest a contact isolation period of 3 to 6 weeks but, based on detection of replication-competent virus, this time could be reduced. Based on findings from this cohort of patients, semen testing and prolonged use of condoms after recovery from monkeypox might not be necessary.</li> </ul>

## Evidence on Equipment and Devices

Date	Author/s	Title	Journal/ Article Type	Summary
12 Dec 2022	<a href="#">Wu et al</a>	Wide mismatches in the sequences of primers and probes for Monkeypox virus diagnostic assays	<i>Journal of Medical Virology/Qualitative analysis</i>	<ul style="list-style-type: none"> <li>The study analyzed the primer and probe sequences present in the CDC recommended monkeypox virus (MPV) generic real-time PCR assay by aligning those sequences against 1,730 MPV complete genomes reported in 2022 worldwide. Sequence mismatches were found in 99.08% and 97.46% of genomes for the MPV generic forward and reverse primers, respectively. Mismatch-corrected primers were synthesized and compared to the generic assay for MPV detection.</li> <li>The results show that the current MPV real-time generic assay may not be optimal to accurately detect MPV, and the mismatch-corrected assay with full complementarity between primers and current MPV genomes could provide a more sensitive and accurate detection of MPV. This article is protected by copyright. All rights reserved.</li> </ul>

## Evidence on Preventive & Promotive Health

### Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
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### Evidence on Personal Measures

Date	Author/s	Title	Journal/ Article Type	Summary
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### Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
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## Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
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## Evidence on Medical and Surgical Procedures

Date	Author/s	Title	Journal/ Article Type	Summary
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## Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
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