

Weekly Evidence Report



Health Technology Assessment Philippines

17 December- 23 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 **17 December - 23 December 2022** on current public health emergency concerns, COVID-19 and monkeypox. The HTA Division reviewed a total of **8 studies** for COVID-19 and **7 studies** for monkeypox.

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

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



Sections

Epidemiology

Vaccines

Drugs

Transmission

Equipment & Devices

Medical & Surgical Procedures

Traditional Medicine

Preventive & Promotive Health

Other Health Technologies

COVID-19

Evidence on Epidemiology

Local COVID-19 Case Tracker:

https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX_VVSGA-Hm00Pt5_CscykID7xZv4zqlXG5vm9PM2xoC27QQAvD_BwE

Date	Author/s	Title	Journal/ Article Type	Summary
21 December 2022	WHO Global	Weekly epidemiological update on COVID-19 - 21 December 2022	<i>WHO Global Situation Report</i>	<ul style="list-style-type: none"> Globally, the number of new weekly cases reported during the week of 12 to 18 December 2022 was similar (+3%) to the previous week, with over 3.7 million new cases reported. The number of new weekly deaths was 6% lower than in the previous week, with over 10 400 new fatalities reported. In the last 28 days, over 13.7 million cases and over 40 000 new fatalities were reported globally – a 36% increase and 2% decline, respectively, compared to the previous 28 days. As of 18 December 2022, over 649 million confirmed cases and over 6.6 million deaths have been reported globally.

Evidence on Vaccines

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
23 December 2022	Zhang et al.	Prevalence and risk factors of depression and anxiety among Chinese adults who received SARS-CoV-2 vaccine	<i>Journal of Affective Disorders/ Cross-sectional survey</i>	<ul style="list-style-type: none"> This study suggests that Chinese adults who received SARS-COV-2 vaccine suffer from depression and anxiety, especially for those who are female, healthcare workers, college or higher educated and have a pregnancy plan. Considering these findings, interventions for mental health problems should be incorporated into nationwide SARS-COV-2 vaccination campaign.

Evidence on Vaccines

Date	Author/s	Title	Journal/ Article Type	Summary
19 Dec 2022	Ou et al.	Antibody responses to COVID-19 vaccination in people with obesity: A systematic review and meta-analysis	<i>Journal on Influenza and other respiratory viruses/ Systematic Review and Meta-Analysis</i>	<ul style="list-style-type: none"> • A meta-analysis of the literature was performed and compared antibody responses with COVID-19 vaccines among persons with and without obesity. • Pubmed, Embase, Web of Science, and Cochrane Library were used to identify all related studies up to April 2022. The Stata.14 software was used to analyze the selected data. Eleven studies were included in the present meta-analysis. Five of them provided absolute values of antibody titers in the obese group and non-obese group. • Overall, the obese population was found to be significantly associated with lower antibody titers (standardized mean difference [SMD] = -0.228, 95% CI [-0.437, -0.019], P < 0.001) after COVID-19 vaccination. • The present meta-analysis suggested that obesity was significantly associated with decreased antibody responses to SARS-CoV-2 vaccines. Future studies should be performed to unravel the mechanism of response to the COVID-19 vaccine in obese individuals.

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
23 December 2022	Gray et al...	Molnupiravir for SARS-CoV-2 infection: Public health and policy implications	<i>Journal of Infection/ Case Report</i>	<ul style="list-style-type: none"> • National and international policymakers now need time to assimilate and consider these new data, and subsequent analyses, when formulating and then evolving clinical policy for access to molnupiravir and future antivirals (initially Paxlovid®) as these are evaluated in subsequent arms of the PANORAMIC study. • Whilst it is clear that meaningful reductions in hospitalisations and deaths cannot be realised currently in vaccinated populations through use of molnupiravir, policy makers may need to consider the disease impact profile of future variants and the wider benefits that antivirals may bring to UK citizens beyond reducing hospitalisation and death, such as the reduced recovery time shown in the study and potential gains in business continuity, as well as treatment for groups unable to benefit from vaccination due to immune dysfunction or clinical contraindications.

Evidence on Preventive & Promotive Health

Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
23 December 2022	Armas, et al.	Contextualizing Wastewater-Based Surveillance in the COVID-19 Vaccination Era	<i>Journal on Environment International / Narrative Review</i>	<ul style="list-style-type: none"> None of the WHO-approved COVID-19 vaccines pose a risk of a false positive signal for wastewater-based surveillance (WBS) Breakthrough shedding may be influenced by changing landscapes of prevailing vaccines and variants of concern, complicating comparison of WBS signals across longer timescales.

Evidence on Personal Measures

Date	Author/s	Title	Journal/ Article Type	Summary
23 December 2022	Shibata et al.	COVID-19 pandemic and hypertension: an updated report from the Japanese Society of Hypertension project team on COVID-19	<i>Journal of Hypertension and Research / Narrative Review</i>	<ul style="list-style-type: none"> Overall, evidence supports that COVID-19 vaccination to hypertensive patients is safe and induces appropriate immune responses. Several studies indicate that hypertension is associated with a lower antibody production; however, the timing and methods for antibody titer assessment are variable among studies

Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
23 December 2022	Bechman et al.	Semi-automated contact tracing and management of contact precautions during the COVID-19 pandemic within a tertiary hospital	<i>Journal on Infection Prevention and Practice / Observational Descriptive Study, Retrospective case-control study</i>	<ul style="list-style-type: none"> Digital tools can increase the efficiency of in-hospital contact tracing. The CTT enable a timely systematic analysis of risk factors among staff members.

Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
23 December 2022	Patel et al.	SARS-CoV-2 detecting rapid metasurface-based sensor	<i>Diamond and Related Materials/ Narrative Review</i>	<ul style="list-style-type: none"> • A novel approach of COVID-19 detection through dry exhaled breath is proposed. • The optimized structure of the sensor is obtained by varying several structure parameters including structure length and thickness, slotted T-shape resonator length, width, and thickness. • Sensor's performance is evaluated based on numerous factors comprising of sensitivity, Q factor, detection limit, a figure of merit (FOM), detection accuracy, and other performance defining parameters.

Evidence on Transmission

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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MONKEYPOX

Evidence on Epidemiology

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
23 Dec 2022	WHO	2022 Monkeypox Outbreak: Global Trends	<i>WHO/Global Epidemiological Report</i>	<ul style="list-style-type: none"> As of December 23, 2022, a total of 83,497 laboratory-confirmed cases and 72 deaths have been reported to WHO. The number of weekly reported new cases globally has increased by 123.3% in week 51 compared to week 50. The majority of cases reported in the past 4 weeks were notified from the Region of the Americas (84.7%) and the European Region (7.5%). In the past seven days, 17 countries reported an increase in the weekly number of cases, with the highest increase reported in Nigeria. 72 countries have reported no new cases in the past 21 days. <p>No Updated Technical Report from US CDC</p>

Evidence on Vaccines

Date	Author/s	Title	Journal/ Article Type	Summary
19 Dec 2022	Khan et al.	Vaccinomics to design a multi-epitope-based vaccine against monkeypox virus using surface-associated proteins	<i>Journal of Biomolecular Structure and Dynamics/ Vaccine Design Study</i>	<ul style="list-style-type: none"> A multi-epitope-based vaccine is designed against monkeypox virus using two surface-associated proteins: MPXVgp002 accession number > YP_010377003.1 and MPXVgp008 accession number > YP_010377007.1 proteins. These proteins were utilized for B- and T-cell epitopes prediction. Throughout the simulation time, no significant deviation occurred. This confirmed that the vaccine as potential vaccine candidate to interact with immune cell receptors. This interaction is important for the immune system activation. In conclusion, the proposed vaccine construct against monkeypox could induce an effective immune response and speed up the vaccine development process. However, the study is completely based on the computational approach, hence, the experimental validation is required.

Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
20 Dec 2022	Accordini et al.	People with asymptomatic or unrecognised infection potentially contribute to monkeypox virus transmission	<i>The Lancet Microbe/ Case Study</i>	<ul style="list-style-type: none"> • A subclinical infection was detected in a man aged 35 years who was receiving pre-exposure prophylaxis for HIV and attending the outpatient clinic for sexually transmitted diseases at Verona University Hospital, Italy. • The man had household contact with a different man who was diagnosed with mpox 7 days after contact. • Monkeypox virus isolation from a urethral swab of an asymptomatic patient was reported, supporting contagiousness of asymptotically infected people via sexual contacts. • Asymptomatic infection can substantially contribute to the transmission chain and should be clearly addressed in public health policy to contain monkeypox virus transmission

Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
21 Dec 2022	Ma et al.	Characterization of the Cytopathic Effects of Monkeypox Virus Isolated from Clinical Specimens and Differentiation from Common Viral Exanthems	<i>Journal of Clinical Microbiology/ Cross-Sectional Study</i>	<ul style="list-style-type: none"> • While the practice of viral culture has largely been replaced by nucleic acid amplification tests, circumstances still exist in which the availability of viral culture will allow for the diagnosis of infections not included in a provider's differential diagnosis. • The cytopathic effects (CPE) and clinical data associated with 18 cases of monkeypox virus (MPXV) isolated from 19 clinical samples were examined for viral culture. • During the study period, a total of 3,468 viral cultures were performed with herpes simplex virus (HSV) most commonly isolated (646/3,468; 18.6%), followed by MPXV (19/3,468; 0.6%) and varicella-zoster virus (VZV) (12/3,468; 0.4%). • Most MPXV-positive samples were obtained from males (14/19) and taken from genital (7/19) or rectal lesions (5/19).

Evidence on Other Health Technologies (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
21 Dec 2022	Ma et al.	Characterization of the Cytopathic Effects of Monkeypox Virus Isolated from Clinical Specimens and Differentiation from Common Viral Exanthems (cont.)	<i>Journal of Clinical Microbiology/ Cross-Sectional Study</i>	<ul style="list-style-type: none"> • Growth of MPXV in cell culture was rapid, yielding detectable CPE at a median of 2 days (range: 1 to 4) often with >50% of the monolayer affected in RMK, BGM, A549, and MRC-5 cell lines. • Viral culture remains an important tool for the detection of rare or emerging viral pathogens, particularly when high viral load specimens are easily obtained.

Evidence on Equipment and Devices

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

Date	Author/s	Title	Journal/ Article Type	Summary
17 Dec 2022	De Clercq et al.	Therapeutic strategies for human poxvirus infections: Monkeypox (mpox), smallpox, molluscipox, and orf	<i>Travel Medicine and Infectious Disease Journal/ Narrative Review</i>	<ul style="list-style-type: none"> • Tecovirimat has been documented by Grosenbach et al., 2018 for the oral treatment of smallpox. It was featured among the antiviral agents active against mpox in a 2022 clinically oriented review article by Siegrist and Sassine. For the treatment of mpox virus infection, tecovirimat can also be successfully combined with the smallpox vaccine ACAM2000. • A retrospective observational study indicated that brincidofovir offered no convincing clinical benefit and was associated with a recognized adverse event of deranged liver enzymes in a small cohort of three mpox-infected patients (Adler et al., 2022). Nevertheless, the clinical efficacy and safety of brincidofovir in mpox-infected patients should be further evaluated by randomized clinical trials. • Although tecovirimat and brincidofovir have not yet been approved by the US FDA for mpox treatment, they are currently under evaluation for those patients at risk of severe mpox disease.

Evidence on Drugs (cont.)

20 Dec 2022	DeLaurentis et al.	New Perspectives on Antimicrobial Agents: Tecovirimat for Treatment of Human Monkeypox Virus	<i>Antimicrobial Agents and Chemotherapy/ Narrative Review</i>	<ul style="list-style-type: none"> Tecovirimat is an antiviral drug initially developed against variola virus to treat smallpox infection. Due to its mechanism of action, it has activity against the family of orthopoxviruses, including vaccinia and the human monkeypox virus. Efficacy studies have thus far been limited to animal models, with human safety trials showing no serious adverse events. Tecovirimat has been prescribed via an expanded access for an investigational new drug protocol during the 2022 outbreak of monkeypox.
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Evidence on Medical and Surgical Procedures

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Evidence on Preventive & Promotive Health

Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
22 Dec 2022	WHO	Surveillance, case investigation and contact tracing for mpox (monkeypox): interim guidance	<i>WHO Interim Guidance</i>	<ul style="list-style-type: none"> This is an updated version of the previous guidance published on 25 August 2022. It applies to all countries with potential mpox (monkeypox) cases, including countries that have historically documented mpox transmission and those that have not. The overall goal of surveillance, case investigation and contact tracing is to detect new outbreaks and stop human-to-human transmission in order to stop the global outbreak and minimize zoonotic transmission. If mpox is suspected, case investigation should consist of clinical examination of the patient in a well-ventilated room while using appropriate personal protective equipment (PPE), questioning the patient about possible sources of exposure, and safe collection and dispatch of specimens for laboratory MPXV examination. Contacts of probable and confirmed cases should be monitored, or should self-monitor, daily for any sign or symptom for a period of 21 days from last contact with a case or their contaminated materials during the infectious period.

Evidence on Preventive & Promotive Health

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 Traditional Medicine

Date	Author/s	Title	Journal/ Article Type	Summary
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