Weekly Evidence Report

Health Technology Assessment Philippines

22 - 28 October 2022

Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Division reviewed for the period of 22 - 28 October 2022 on current public health emergency concerns, COVID-19 and monkeypox. The HTA Division reviewed a total of 10 studies for COVID-19 and 5 studies for monkeypox.

For COVID-19, evidence includes 1 study on Epidemiology; 5 studies on Vaccines; 2 studies on Drugs; 0 study on Transmission; 1 study on Equipment and Devices; 0 studies on Medical and Surgical Procedures; 0 studies on Traditional Medicine; 0 studies on Preventive & Promotive Health; and 1 study on Other Health Technologies.

For monkeypox, evidence includes 3 studies on Epidemiology; 0 studies on Vaccines; 0 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 0 studies on Other Health Technologies.

Sections

COVID-19

Evidence on Epidemiology

Local COVID-19 Case Tracker:

https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQIjh8DX_VVSGA-HmO0Pt5_CscykID7xZv4zqlXG5vm9PM2xoC27QQAvD_BwE

Date	Author/s	Title	Journal/ Article Type	Summary
26 Oct 2022	WHO Global	Weekly epidemiological update on COVID-19 - 26 October 2022	*WHO Global Situation Report*	• Globally, the number of new weekly cases decreased by 15% during the week of 17 to 23 October 2022 as compared to the previous week, with over 2.6 million new cases reported. • The number of new weekly deaths decreased by 13% as compared to the previous week, with over 8500 fatalities reported. • As of 23 October 2022, over 624 million confirmed cases and over 6.5 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
25 Oct 2022	Yang et al.	Immunogenicity, efficacy, and safety of SARS-CoV-2 vaccine dose fractionation: a systematic review and meta-analysis	*BMC Medicine / Systematic review and meta-analysis*	• The study found that dose fractionation of mRNA and protein subunit vaccines could induce SARS-CoV-2-specific nAbs and T cells that confer a reasonable level of protection (i.e., vaccine efficacy > 50%) against ancestral strains and variants up to Omicron. Safety profiles of fractional doses were non-inferior to the standard dose.

Evidence on Vaccines (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
26 Oct 2022	Rafati et al.	Bell's Palsy Following SARS-CoV-2 Vaccines: A Systematic Review and Meta-Analysis	*medRxiv / Systematic review and meta-analysis*	• Many studies have reported BP following vaccination, although neither a causative relationship nor a prevalence of the condition higher than the general population has been established. The outcomes of interest were to compare BP incidence among (a) SARS-CoV-2 vaccine recipients, (b) non-recipients in the placebo or unvaccinated cohorts, (c) different types of SARS-CoV-2 vaccines, and (d) SARS-CoV-2 infected vs. SARS-CoV-2 vaccinated individuals. • The meta-analysis suggests a higher incidence of BP among vaccinated vs. placebo groups. BP occurrence did not significantly differ between Pfizer/BioNTech and Oxford/AstraZeneca vaccines. SARS-CoV-2 infection posed a significantly greater risk for BP than SARS-CoV-2 vaccines.
25 Oct 2022	Collier et al.	Immunogenicity of the BA.5 Bivalent mRNA Vaccine Boosters	*bioRxiv / Phase II trial*	• The data demonstrate that both monovalent and bivalent mRNA boosters markedly increased antibody responses but did not substantially augment T cell responses. • BA.5 NAb titers were comparable following monovalent and bivalent mRNA boosters, with a modest and nonsignificant trend favoring the bivalent booster by a factor of 1.3. • These findings are consistent with data recently reported for a BA.1-containing bivalent mRNA booster. Findings suggest that immune imprinting by prior antigenic exposure may pose a greater challenge than currently appreciated for inducing robust immunity to SARS-CoV-2 variants.
24 Oct 2022	Wang et al.	Antibody responses to Omicron BA.4/BA.5 bivalent mRNA vaccine booster shot	*bioRxiv / Phase II trial*	• At ~3-5 weeks post booster shot, individuals who received a fourth vaccine dose with a bivalent mRNA vaccine targeting BA.4/BA.5 had similar neutralizing antibody titers as those receiving a fourth monovalent mRNA vaccine against all SARS-CoV-2 variants tested, including BA.4/BA.5. • Those who received a fourth monovalent vaccine dose had a slightly higher neutralizing antibody titers than those who received the bivalent vaccine against three related sarbecoviruses: SARS-CoV, GD-Pangolin, and WIV1. When given as a fourth dose, a bivalent mRNA vaccine targeting Omicron BA.4/BA.5 and an ancestral SARS-CoV-2 strain did not induce superior neutralizing antibody responses in humans, at the time period tested, compared to the original monovalent vaccine formulation.

Note. Studies that have not been peer-reviewed are highlighted in red.

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Evidence on Vaccines (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
22 Oct 2022	Tang et al.	COVID-19 vaccination in systemic lupus erythematosus: a systematic review for effectiveness, immunogenicity, flares and acceptance	*Rheumatology / Systematic review and meta-analysis*	• Pooled seropositivity rate was 81.1% (95% CI: 72.6–88.5%, I2=85%, p< 0.01) with significant heterogeneity and higher rates in mRNA vaccines compared with non-mRNA vaccines. • Adverse events and specifically lupus flares were examined in 20 studies (3853 patients) and 13 studies (2989 patients), respectively. Severe adverse events and moderate to severe lupus flares were infrequent. • The pooled vaccine acceptance rate was 67.0% (95%CI: 45.2–85.6%, I2=98%, p< 0.01) from 8 studies (1348 patients), with greater acceptance in older patients.

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
25 Oct 2022	Naggie et al.	Effect of Ivermectin vs Placebo on Time to Sustained Recovery in Outpatients With Mild to Moderate COVID-19	*JAMA Network / Randomized clinical trial*	• In this double-blinded, randomized, placebo-controlled platform trial conducted in the US during a period of Delta and Omicron variant predominance, and that included 1591 adult outpatients with COVID-19, the posterior probability of improvement in time to recovery in those treated with ivermectin vs placebo had a hazard ratio of 1.07, with a posterior probability of benefit of .91. This did not meet the prespecified threshold of posterior probability greater than .95. • These findings do not support the use of ivermectin in outpatients with mild to moderate COVID-19.
28 Oct 2022	Vio et al.	Therapeutic vs prophylactic anticoagulation in COVID-19 patients: a systematic review and meta-analysis of real-world studies	*Minerva Cardiology and Angiology / Systematic review and meta-analysis*	• 10 RWS and 5541 patients were included in the analysis. Overall, tAC was associated with lower mortality (HR=0.62, 95% CI 0.54-0.71). There was asymmetry at the funnel plot suggesting publication bias, that was not confirmed at the Egger test (p=0.07). For the secondary endpoint, there was a non-statistically significant tendency for more bleedings in patients treated with tAC compared to pAC (RR=1.75, 95% CI 0.81-3.81).

Evidence on Equipment and Devices

Date	Author/s	Title	Journal/ Article Type	Summary
26 October 2022	Zhang et al.	Diagnostic efficiency of RPA/RAA integrated CRISPR-Cas technique for COVID-19: A systematic review and meta-analysis	*PLOS ONE/ Systematic review and meta-analysis*	• The pooled sensitivity, specificity and a rea under the summary receiver operator characteristic curve (AUC) were 0.98 [95% confidence interval (CI):0.97-0.99], 0.99 (95% CI: 0.97-1.00) and 1.00 (95% CI: 0.98-1.00), respectively. For CRISPR-associated (Cas) proteins-12, the sensitivity, specificity was 0.98 (95% CI: 0.96-1.00), 1.00 (95% CI: 0.99-1.00), respectively. For Cas13, the sensitivity and specificity were 0.99 (95% CI: 0.97-1.00) and 0.95 (95% CI: 0.91-1.00). T • RPA/RAA integrated with CRISPR technology is used to diagnose coronavirus disease-19 (COVID-19) with high accuracy and can be used for large-scale population screening.

Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
25 Oct 2022	Pallavicini et al.	Virtual Reality Applications in Medicine During the COVID-19 Pandemic: Systematic Review	*JMIR Serious Games / Systematic review*	• Seventeen studies showed the usefulness of virtual reality during the COVID-19 crisis for reducing stress, anxiety, depression, and pain, and promoting physical activity. Twenty-two studies revealed that virtual reality was a helpful learning and training tool during the COVID-19 crisis in several areas, including emergency medicine, nursing, and pediatrics. • This technology was also used as an educational tool for increasing public understanding of the COVID-19 pandemic. • Different levels of immersion (ie, immersive and desktop virtual reality), types of head-mounted displays (ie, PC-based, mobile, and standalone), and content (ie, 360° videos and photos, virtual environments, virtual reality video games, and embodied virtual agents) have been successfully used. Virtual reality was helpful in both face-to-face and remote trials.

Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
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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 Traditional Medicine

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
25 Oct 2022	European CDC	Monkeypox situation update	*Epidemiological update*	• Since the start of the monkeypox (MPX) outbreak and as of 25 October 2022, 20,675 confirmed cases of MPX have been reported from 29 EU/EEA countries. The five countries reporting most cases since the start of the outbreak are: Spain, France, Germany, Netherlands and Portugal .

Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
22 Oct 2022	Reda, et al	Monkeypox Viral Detection In Semen Specimens of Confirmed Cases: A Systematic Review and Meta-Analysis	*Journal of Medical Virology/ Short Communication*	• The prevalence of MPXV DNA presence in the seminal fluid and other specimens was pooled in a meta-analysis (from studies with sample size > 5 to reduce overestimation) and results were presented as effect sizes and their corresponding 95% confidence intervals (CI). • Nine articles were included. Only five studies were eligible for a meta-analysis, and the pooled prevalence of MPXV DNA in semen specimens was 72.4% (95% CI: 55.7-84.5%) among 115 patients. The positive rate of MPXV viral PCR was higher among skin samples (89%; 95%CI: 78.2-94.8%; N=62; studies=2), followed by anogenital/rectal samples (74.3%; 95%CI: 60.4-84.5%; N=54; studies=2). • MPXV is highly prevalent in seminal specimens of MPX cases, further corroborating the role of sexual transmission of the disease. However, further evidence is still needed to shed more light on the replication competence of these particles.

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 Vaccines

Date	Author/s	Title	Journal/ Article Type	Summary
26 October 2022	Gessain, et al.	Monkeypox	*The New England Journal Medicine/ Review Article*	• The vaccines available for dealing with the current outbreak are ACAM2000 and MVA-BN. ACAM2000 (Emergent BioSolutions) is a second-generation live, attenuated vaccinia virus vaccine with Food and Drug Administration (FDA) approval for use before or after exposure to monkeypox. It is effective but associated with a risk of cardiac complications. • MVA-BN is a third-generation live, attenuated, nonreplicating, modified vaccinia Ankara vaccine developed by Bavarian Nordic. The vaccine is approved for smallpox prevention in the United States and Europe and was licensed by the FDA in 2019 for monkeypox prevention. • MVA-BN has received emergency approval from several national health authorities, notably in France, for the postexposure prevention of monkeypox infection, allowing ring-vaccination strategies for contacts at high risk for infection in the current outbreak. Given the increase in the incidence of the disease and difficulties diagnosing cases and tracing contacts, some countries, including the United Kingdom and France, are now recommending offering third-generation smallpox vaccines to men considered to be at high risk for exposure.

Evidence on Drugs

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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Evidence on Vaccines

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
28 October 2022	Khalil, et al	The need for better diagnostics to support diagnosis and surveillance in monkeypox endemic countries	*Lancet/ Correspondence*	• Although the COVID-19 pandemic has highlighted the need to improve testing capacity by upscaling molecular diagnostics and PCR-related infrastructure in many LMICs, many of these countries still have insufficient monkeypox testing capacity. • The high number of reported deaths is not only due to the different circulating clades of the monkeypox virus, but is also probably due to surveillance artifacts considering that reports of cases and deaths are typically based on symptoms and epidemiological correlations rather than confirmation of infection using molecular or other laboratory diagnoses. • Such individuals with a low pretest probability of infection and high Ct PCR test values for monkeypox in the current monkeypox outbreak amid the COVID-19 pandemic highlight the importance of accurate laboratory diagnostics and evidence-based guidelines for optimal patient care. In addition to supporting monkeypox diagnostics and laboratory services, we need to invest in better surveillance and evaluate the most effective prevention and treatment strategies so that countries in the African region can mitigate the constant waves of monkeypox and other similar neglected infectious disease.

Evidence on Medical and Surgical Procedures

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

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