Weekly Evidence Report

Health Technology Assessment Philippines

28 May – 3 June 2022

Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Unit reviewed for the period of 28 May – 3 June 2022. The HTA Unit reviewed a total of 14 studies for the said period.

Evidence includes 2 studies on Epidemiology; 3 studies on Vaccines; 4 studies on Drugs; 0 studies on Transmission; 2 studies on Equipment and Devices; 2 studies on Medical and Surgical Procedures; 0 studies on Traditional Medicine; 0 studies 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

Evidence on Epidemiology

Local COVID-19 Case Tracker:

https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX_VVSGA-HmO0Pt5_CscykID7xZv4zqlXG5vm9PM2xoC27QQAvD_BwE

Date	Author/s	Title	Journal/ Article Type	Summary
1 June 2022	WHO Global	Weekly epidemiological update on COVID-19 - 1 June 2022	*WHO Global Situation Report*	• Globally, the number of new weekly cases has continued to decline since a peak in January 2022. During the week of 23 until 29 May 2022, over 3.3 million cases were reported, an 11% decrease as compared to the previous week. The number of new weekly deaths also continues to decline, with over 9 600 fatalities reported, representing a 3% decrease as compared to the previous week. • As of 29 May 2022, over 526 million confirmed cases and over six million deaths have been reported globally. • The Omicron VOC remains the dominant variant circulating globally, accounting for nearly all sequences reported. Among the Omicron sublineages, BA.2 is the dominant sublineage, despite declining from 78% to 75% of Omicron sequences submitted in the last 30 days. The BA.1 sublineage has also declined in prevalence from 7% to 4%. • Three Omicron sublineages have shown an increasing trend among Omicron sequences submitted in the last 30 days: BA.2.12.1 has risen from 11% to 16%; BA.4 has risen from 2% to 3%; and BA.5 has risen from 1% to 2%. During the same period, the prevalence of BA.3 has declined to <1%.
31 May 2022	Li et al., 2022	Lineage BA.2 dominated the Omicron SARS-CoV-2 epidemic wave in the Philippines	*medRXiv/ Genomic Surveillance Study*	• The Omicron lineage BA.1 was dominant and responsible for most domestic outbreaks during December 2021-January 2022, whilst other Omicron lineages including BA.2 accounted for the minority of global isolates. • The study described the Omicron wave in the Philippines by analysing genomic data. The results identified the presence of both BA.1 and BA.2 lineages in the Philippines in December 2021, before cases surged in January 2022. • The study inferred that only lineage BA.2 underwent sustained transmission in the country, with an estimated emergence around November 18th, 2021 [95% highest posterior density: November 6-28th], whilst despite multiple introductions BA.1 transmission remained limited. • These results suggest the Philippines was one of the earliest areas affected by BA.2, and reiterate the importance of whole-genome sequencing for monitoring outbreaks.

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

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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
31 May 2022	Au, W., et al.	Effectiveness of heterologous and homologous COVID-19 vaccine regimens: living systematic review with network meta-analysis	*BMJ/ Living Systematic Review with Network Meta-analysis*	• 38 WHO covid-19 databases were searched on a weekly basis from 8 March 2022. Studies that assessed the effectiveness of heterologous and homologous COVID-19 vaccine regimens with or without a booster were identified. • The first round of the analysis comprised 53 studies. 24 combinations of COVID-19 vaccine regimens were identified, of which a three dose mRNA regimen was found to be the most effective against asymptomatic and symptomatic COVID-19 infections (vaccine effectiveness 96%, 95% credible interval 72% to 99%). • Heterologous boosting using two dose adenovirus vector vaccines with one mRNA vaccine has a satisfactory vaccine effectiveness of 88% (59% to 97%). A homologous two dose mRNA regimen has a vaccine effectiveness of 99% (79% to 100%) in the prevention of severe COVID-19 infections. • Three dose mRNA is the most effective in reducing COVID-19 related hospital admission (95%, 90% to 97%). The vaccine effectiveness against death in people who received three doses of mRNA vaccine remains uncertain owing to confounders. • In the subgroup analyses, a three dose regimen is similarly effective in all age groups, even in the older population (≥65 years). A three dose mRNA regimen works comparably well in patients who are immunocompromised and those who are non-immunocompromised. Homologous and heterologous three dose regimens are effective in preventing infection by COVID-19 variants (alpha, delta, and omicron). • An mRNA booster is recommended to supplement any primary vaccine course. Heterologous and homologous three dose regimens work comparably well in preventing COVID-19 infections, even against different variants. The effectiveness of three dose vaccine regimens against COVID-19 related death remains uncertain.

Evidence on Vaccines (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary

1 June 2022	Nielsen, K., et al.	Vaccine effectiveness against SARS-CoV-2 reinfection during periods of Alpha (B.1.1.7), Delta (B.1.617.2) or Omicron (B.1.1.529) dominance: A Danish nationwide study	*medRXiv/ Retrospective Cohort Study*	• A nationwide cohort study design including all individuals with a confirmed SARS-CoV-2 infection, who were alive and residing in Denmark between 1 January 2020 and 31 January 2022 were used.
				• The study population comprised of 209,814 individuals infected before or during the Alpha period, 292,978 before or during the Delta period and 245,530 before or during the Omicron period. Of these, 40,281 individuals had completed their primary vaccination series during the Alpha period (19.2%), 190,026 during the Delta period (64.9%) and 158,563 during the Omicron period (64.6%).
				• VE against reinfection following any COVID-19 vaccine type administered in Denmark, peaked at:
				  ○ 85% (95% CI: 37% to 97%) at 104 days or more after vaccination during the Alpha period,
				  ○ 88% (95% CI: 81% to 92%) 14-43 days after vaccination during the Delta period
				  ○ and 60% (95% CI: 58% to 62%) 14-43 days after vaccination during the Omicron period.
				• Waning immunity was observed, and was most pronounced during the Omicron period.

31 May 2022	Liu, X., et al.	Safety and superior immunogenicity of heterologous boosting with an RBD-based SARS-CoV-2 mRNA vaccine in Chinese adults	*medRXiv / Randomized Clinical Trial*	• The study showed the safety and immunogenicity of heterologous boosting with the RBD29 targeting mRNA vaccine AWcorna (also term ARCoV) in Chinese adults who have received two doses inactivated vaccine. The superiority over inactivated vaccine in neutralization antibodies, as well as the safety profile, support the use of AWcorna as heterologous booster in China.

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
2 June 2022	Cecconi, A., et al.	Efficacy of short-course colchicine treatment in hospitalized patients with moderate to severe COVID-19 pneumonia and hyperinflammation: a randomized clinical trial	*Nature Scientific Reports / Randomized Clinical Trial*	• In a prospective, randomized controlled, observer-blinded endpoint, investigator-initiated trial, 240 hospitalized patients with COVID-19 pneumonia and established hyperinflammation were randomly allocated to receive oral colchicine or not. The primary efficacy outcome measure was a composite of non-invasive mechanical ventilation (CPAP or BiPAP), admission to the intensive care unit, invasive mechanical ventilation requirement or death. • The composite primary outcome occurred in 19.3% of the total study population. The composite primary outcome was similar in the two arms and the same applied to each of its individual components. • In this trial, including adult patients with COVID-19 pneumonia and associated hyperinflammation, no clinical benefit was observed with short-course colchicine treatment beyond standard care regarding the combined outcome measurement of CPAP/BiPAP use, ICU admission, invasive mechanical ventilation or death .
28 May 2022	Mermiri, M. et al.	The effect of vasopressors on mortality in critically ill patients with COVID-19: A systematic review and meta-analysis	*medRXiv / Systematic Review and Meta-analysis*	• A systematic search of PubMed, Scopus, and clinicaltrials.gov was conducted for relevant articles until January 2022. Eligibility criteria were randomized controlled and non-randomized trials. The primary outcome was all-cause mortality at 28 days or 30 days among critically ill patients. • Twenty-one studies with a total population of 7900 individuals provided data on mortality. Patients who received vasopressors were statistically significantly more likely to die compared to those who did not receive vasopressor therapy [RR (95%CI): 4.26 (3.15, 5.76); p<0.001]. • Four studies provided data on specific vasopressors; the highest mortality rate was observed in patients treated with vasopressin or epinephrine, while patients receiving angiotensin-II as a sole or second-line vasopressor agent had the lowest mortality rate. • Vasopressors have detrimental effect on survival of critically ill patients with COVID-19.

Evidence on Drugs (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
29 May 2022	Young-Xu, Y., et al.	Tixagevimab/Cilgavimab for Prevention of COVID-19 during the Omicron Surge: Retrospective Analysis of National VA Electronic Data	*medRXiv / Retrospective Cohort Study*	• Most (69%) tixagevimab/cilgavimab recipients were ≥65 years old, 92% were identified as immunocompromised in electronic data, and 73% had ≥3 mRNA vaccine doses or two doses of Ad26.COV2. • Compared to propensity-matched controls, tixagevimab/cilgavimab-treated patients had a lower incidence of the composite COVID-19 outcome, and individually SARS-CoV-2 infection, COVID-19 hospitalization, and all-cause mortality. • Using national real-world data from predominantly vaccinated, immuno-compromised Veterans, administration of tixagevimab/cilgavimab was associated with lower rates of SARS-CoV-2 infection, COVID-19 hospitalization, and all-cause mortality during the Omicron surge.
31 May 2022	Annweiler, C., et al.	High-dose versus standard-dose vitamin D supplementation in older adults with COVID-19 (COVIT-TRIAL): A multicenter, open-label, randomized controlled superiority trial	*PLoS Medicine / Randomized Control Trial*	• Between April 15 and December 17, 2020, of 1,207 patients who were assessed for eligibility in the COVIT-TRIAL study, 254 met eligibility criteria and formed the intention-to-treat population. • Overall, 8 (6%) of 127 patients allocated to high-dose cholecalciferol, and 14 (11%) of 127 patients allocated to standard-dose cholecalciferol died within 14 days (adjusted hazard ratio = 0.39 [95% confidence interval [CI], 0.16 to 0.99], P = 0.049, after controlling for randomization strata [i.e., age, oxygen requirement, hospitalization, use of antibiotics, anti-infective drugs, and/or corticosteroids] and baseline imbalances in important prognostic factors [i.e., sex, ongoing cancers, profuse diarrhea, and delirium at baseline]). • Apparent benefits were also found on 14-day mortality due to COVID-19 (7 (6%) deaths in high-dose group and 14 (11%) deaths in standard-dose group; adjusted hazard ratio = 0.33 [95% CI, 0.12 to 0.86], P = 0.02). The protective effect of the single oral high-dose administration was not sustained at 28 days.

Evidence on Equipment and Devices

Date	Author/s	Title	Journal/ Article Type	Summary
2 June 2022	Galliez, R., et al.	Evaluation of the Panbio COVID-19 Antigen Rapid Diagnostic Test in Subjects Infected with Omicron Using Different Specimens	*Microbiology Spectrum/ Cross-sectional diagnostic study*	• The study tested the performance of the Panbio antigen rapid diagnostic test (Ag-RDT) using nasal and oral specimens for COVID-19 diagnosis in 192 symptomatic individuals, with quantitative reverse transcription-PCR (RT-qPCR) of nasopharyngeal samples as a control. Variant of concern (VOC) investigation was performed with the 4Plex SARS-CoV-2 screening kit. • The SARS-CoV-2 positivity rate was 66.2%, with 99% of the positive samples showing an amplification profile consistent with that of the Omicron variant. Nasal Ag-RDT showed higher sensitivity (89%) than oral (12.6%) Ag-RDT.
1 June 2022	Grandjean, D., et al.	Diagnostic accuracy of non-invasive detection of SARS-CoV-2 infection by canine olfaction	*PLoS ONE/ Cross-sectional diagnostic study*	• Prospective cohort study in two community COVID-19 screening centers. Two nasopharyngeal swabs (NPS), one saliva and one sweat samples were simultaneously collected. The dog handlers (and the dogs…) were blinded with regards to the Covid status. • The overall sensitivity of canine detection was 97% (95% CI, 92 to 99) and even reached 100% (95% CI, 89 to 100) in asymptomatic individuals compared to NPS RT-PCR. The specificity was 91% (95% CI, 72 to 91), reaching 94% (95% CI, 90 to 97) for asymptomatic individuals.

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 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
28 May 2022	Qu, W., et al.	Efficacy and Safety of MSC Cell Therapies for Hospitalized Patients with COVID-19: A Systematic Review and Meta-Analysis	*Stem Cells Translational Medicine / Systematic Review and Meta-analysis*	• The study performed a meta-analysis of published trials assessing the efficacy and adverse events (AE) rates of MSC cell therapy in individuals hospitalized for COVID-19. • When compared with the control group, MSC cell therapy was associated with a reduction in all-cause mortality (RR = 0.54, 95% CI: 0.35-0.85, I 2 = 0.0%), reduction in SAEs (IRR = 0.36, 95% CI: 0.14-0.90, I 2 = 0.0%) and no significant difference in AE rate. • A sub-group with pulmonary function studies suggested improvement in patients receiving MSC. These findings support the potential for MSC cell therapy to decrease all-cause mortality, reduce SAEs, and improve pulmonary function compared with conventional care.

Evidence on Medical and Surgical Procedures (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
31 May 2022	Lau, F., et al.	Pilot Phase Results of a Prospective, Randomized Controlled Trial of Narrowband Ultraviolet B Phototherapy in Hospitalized COVID-19 Patients	*Experimental Dermatology / Randomized Control Trial*	• Narrowband ultraviolet B (NB-UVB) phototherapy is standard of care in a number of immune-dysregulated diseases. Subjects were treated daily with escalating doses on 27% of their body surface area for up to 8 consecutive days. Primary outcomes were safety and efficacy, defined as persistent or painful erythema and 28-day mortality. • NB-UVB phototherapy in hospitalized COVID-19 patients was safe. Decreased mortality was observed in treated patients but this was statistically non-significant. Given its low-cost, scalability, and adjunctive nature, NB-UVB has the potential to improve COVID-19 outcomes. Continuation of this trial is warranted.

Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
2 June 2022	Ajmera, P., et al.	Validation of a Deep Learning Model to aid in COVID-19 Detection from Digital Chest Radiographs	*medRXiv / Cross-sectional Study*	• The study tested a deep learning-based artificial intelligence model (DxCOVID) that can detect COVID-19 pneumonia patterns from digital chest radiographs. • The dataset included 2247 chest radiographs comprising CXRs from 1046 COVID-19 positive patients (positive on RT-PCR) and 1201 COVID-19 negative patients. • The study compared the performance of the model with three different radiologists by adjusting the model's sensitivity as per the individual radiologist. The area under the curve (AUC) on the receiver operating characteristic (ROC) of the model was 0.87 [95% CI: 0.85, 0.89]. • When compared to the performance of three expert readers, DxCOVID matched the output of two of the three readers.