Weekly Evidence Report

Health Technology Assessment Philippines

25 April – 01 May 2022

Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Unit reviewed for the period of 25 April – 01 May 2022. The HTA Unit reviewed a total of 20 studies for the said period.

Evidence includes 5 studies on Epidemiology; 7 studies on Vaccines; 1 study on Drugs; 0 studies on Transmission; 5 studies on Equipment and Devices; 0 studies on Medical and Surgical Procedures; 1 study on Traditional Medicine; 1 study on Preventive & Promotive Health; and 0 studies on Other Health Technologies.

The following report notes that 1 study has not been peer-reviewed.

Sections

Evidence on Epidemiology

Local COVID-19 Tracker: https://www.doh.gov.ph/covid19tracker
Local COVID-19 Case Tracker: https://www.doh.gov.ph/covid-19/case-tracker

Date	Author/s	Title	Journal/ Article Type	Summary
27 Apr 2022	WHO Global	Weekly epidemiological update on COVID-19 - 27 April 2022	*WHO Global Situation Report*	• Globally, the number of new COVID-19 cases and deaths has continued to decline since the end of March 2022. 508,041,253 COVID-19 cases with 6,224,220 deaths have been reported in 231 countries or areas (PFC 1.2%) as of 26 April 2022. • The Omicron VOC remains the dominant variant circulating globally. To date, and with limited data currently available, there appears to be a growth advantage for BA.4, BA.5 and BA.2.12 over BA.2.
27 Apr 2022	WHO Western Pacific Region	COVID-19 Situation Report	*WHO WPRO External Situation Report*	• Between 20 to 26 April 2022, a total of 1,391,940 cases with 2,296 deaths were reported, for a cumulative 54,002,986 cases with 223,841 deaths (proportion of fatal cases (PFC) 0.4%) as of 27 April 2022. • In the Philippines, 1,467 new cases and 213 new deaths were reported as of 27 April 2022 .
28 Apr 2022	European Centre for Disease Prevention and Control (ECDC)	Weekly COVID-19 surveillance report	*Situation Report*	• At the end of week 16, 2022 (week ending 24 April), overall transmission was falling in most countries, as shown by both overall case notification rates and case rates among people aged 65 years and older. • The 14-day COVID-19 death rate has been decreasing for two weeks (19.2 deaths per million population, compared with 23.7 deaths the previous week). No countries reported increases in the COVID-19 death rate.
26 Apr 2022	Rahmani et al	Duration of SARS-CoV-2 shedding and infectivity in the working age population: a systematic review and meta-analysis	*La Medicina del Lavoro / Systematic Review & Meta Analysis*	• Multiple outbreaks have been observed in several occupational settings; hence, knowledge of the duration of the infective phase in the working age population is essential. • The maximum duration of infectivity among immunocompetent subjects was reported after 18 days from symptom onset, while in immunocompromised individuals it lasted up to 112 days. • The findings of this study suggest that the test-based strategy before return-to-work might not be warranted after 21 days among immunocompetent working age individuals, and could keep many workers out of occupation, reducing their livelihood and productivity.

Evidence on Epidemiology

29 Apr 2022	Ren et al.	Reinfection in patients with COVID-19: a systematic review	*Global Health Research and Policy / Systematic Review*	• This study assesses the characteristics of patients with reinfection and possible causes. • The shortest duration between the first infection and reinfection was 19 days and the longest was 293 days. • During the first infection and reinfection, cough (51.6% and 43.9%) and fever (50% and 30.3%) were the most common symptoms. • B.1 is the most common variant strain at the first infection. B.1.1.7, B.1.128 and B.1.351 were the most common variant strains at reinfection.

Evidence on Vaccines (Part 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

Date	Author/s	Title	Journal/ Article Type	Summary
26 Apr 2022	Jarisch et al.	Immune responses to SARS-CoV-2 vaccination in young patients with anti-CD19 CAR-T-induced B-cell aplasia	*Transplantation and Cellular Therapy / Prospective Analysis*	• Isolated T-cell responses without seroconversion in healthy COVID-patients suggest that T-cell responses effectively protect against clinical infection. • Findings indicate that SARS-CoV-2 mRNA vaccines induce meaningful cellular immunity in patients with isolated B-cell deficiency due to anti-CD19 CAR-T therapy.
27 Apr 2022	Xu et al.	Protective prototype-Beta and Delta-Omicron chimeric RBD-dimer vaccines against SARS-CoV-2	*Cell / Experimental Design*	• A prototype-Beta chimeric RBD-dimer vaccine approach was first designed to adapt the resistant Beta variant. Compared with its homotypic forms, the chimeric vaccine elicited broader sera neutralization of variants and conferred better protection in mice. This approach was generalized to develop Delta-Omicron chimeric RBD-dimer to adapt the currently prevalent variants. • The Delta-Omicron RBD-dimer chimeric vaccine elicited broader sera neutralization of SRS-CoV-2 variants and conferred better protection against Delta or Omicron in mice.
27 Apr 2022	Demir et al.	Differences in clinical outcomes of COVID-19 among vaccinated and unvaccinated kidney transplant recipients	*Vaccine / Case-control*	• This study investigated the impact of the COVID-19 vaccines on kidney transplant recipients with SARS-CoV-2 infection. • Out of 45 patients, 4 in the vaccinated group and 9 patients in the control group died during follow-up. 17 patients in the vaccinated group and 34 participants in the control group were hospitalized. • The occurrence of cytokine storm and acute respiratory distress syndrome was higher in the patient group compared to the control group.

Evidence on Vaccines (Part 2 of 3)

Date	Author/s	Title	Journal/ Article Type	Summary
27 Apr 2022	Vesin et al.	An intranasal lentiviral booster reinforces the waning mRNA vaccine-induced SARS-CoV-2 immunity that it targets to lung mucosa	*Molecular Therapy / Experimental Design*	• Vaccination by the nasal route induces mucosal, humoral and cellular immunity at the entry point of SARS-CoV-2 and has been shown to be the most effective for reducing viral transmission. The lentiviral vaccination vector (LV) is suitable for this route of immunization due to its non-cytopathic, non-replicative and inflammatory properties. • Strong boost effect was detected on cross-sero-neutralizing activity and systemic T-cell immunity. Mucosal anti-Spike IgG and IgA, lung resident B cells, and effector memory and resident T cells were efficiently induced, correlating with complete pulmonary protection against the Delta variant. • LV::SBeta-2P vaccination was also fully protective against Omicron infection of the lungs and central nervous system in mice.
29 Apr 2022	Chow et al	Autoimmune Hepatitis-Like Syndrome Following COVID-19 Vaccination: A Systematic Review of the Literature	*Digestive Diseases and Sciences / Systematic Review*	• During the summer of 2021, case reports began to emerge documenting a small number of individuals who developed autoimmune hepatitis (AIH) following COVID-19 vaccination. These cases are rare and novel, and very little is known. • 32 patients AIH-like syndromes after receiving a COVID-19 vaccine, making it an uncommon association. Jaundice was the most frequently reported symptom (81%), and 19% of patients were initially asymptomatic and presented with elevated liver enzymes found during routine bloodwork.
29 Apr 2022	Tsang et al	Predicting COVID-19 Vaccine Hesitancy in Hong Kong: Vaccine Knowledge, Risks from Coronavirus, and Risks and Benefits of Vaccination	*Vaccine:X / Descriptive survey*	• Vaccine hesitancy is not only an issue in Hong Kong but a global concern. • This study aimed to determine how vaccinated and hesitant people differ and what factors contribute to a longer vaccination delay among the hesitants. • While vaccine knowledge, perceived susceptibility to infection, and vaccine efficacy and safety were positive correlates of vaccine uptake, risks from vaccination and vaccine efficacy were positive correlates of vaccine hesitancy.

Evidence on Vaccines (Part 3 of 3)

Date	Author/s	Title	Journal/ Article Type	Summary
29 Apr 2022	Masuda et al.	Safety and immunogenicity of NVX-CoV2373 (TAK-019) vaccine in healthy Japanese adults: Interim report of a phase I/II randomized controlled trial	*Vaccine / Phase I/II Randomized Controlled Trial*	• This study evaluated the safety and immunogenicity of NVX-CoV2373 (Novavax) in healthy Japanese participants. • Tenderness and injection site pain were the most frequently reported solicited AEs after each vaccination, irrespective of age. • Robust immune responses occurred with NVX-CoV2373 by day 36. IgG geometric mean fold rise [259 (95% CI: 219, 306)]; seroconversion rate 100% • Two doses of NVX-CoV2373 given with a 21-day interval demonstrated acceptable safety and induced robust anti-SARS-CoV-2 immune responses in healthy Japanese adults.

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
27 Apr 2022	McGree et al.	Controlled evaLuation of Angiotensin Receptor Blockers for COVID-19 respIraTorY disease (CLARITY): statistical analysis plan for a randomised controlled Bayesian adaptive sample size trial	*BMC Trials / Phase 4 Randomized Controlled Trial*	• CLARITY (India and Australia) investigates the effectivenes of angiotensin receptor blockers in addition to standard care compared to placebo in reducing the duration and severity of lung failure in patients with COVID-19. • The primary outcome is clinical status on a 7-point ordinal scale adapted from the WHO Clinical Progression scale assessed at day 14. The primary analysis will follow the intention-to-treat principle. • There are no results yet for this trial.

Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
–	–	–	–	–

Evidence on Equipment and Devices (Part 1 of 2)

Date	Author/ s	Title	Journal/ Article Type	Summary
26 Apr 2022	Lippi et al	Diagnostic performance of the fully automated Roche Elecsys SARS-CoV-2 antigen electrochemiluminescence immunoassay: a pooled analysis	*Clinical Chemistry and Laboratory Medicine / Pooled analysis*	• This study aimed to assess the diagnostic accuracy of the fully-automated Roche Elecsys SARS-CoV-2 antigen electrochemiluminescence immunoassay. • The diagnostic tool has high diagnostic specificity and optimal diagnostic sensitivity for identifying nasopharyngeal samples with higher viral load, thus making it a reliable technique for mass screening and for supporting strategies based on shorten isolation and/or quarantine.
26 Apr 2022	Li et al.	Development of a smartphone based quantum-dot lateral flow immunoassay strip for ultrasensitive detection of anti-SARS-CoV-2 IgG and neutralizing antibodies	*International Journal of Infectious Diseases / Experimental Design*	• This study used quantum-dot lateral flow immunoassay strip (QD-LFIA) on smartphone for detection of specific IgG or neutralizing antibodies to SARS-CoV-2 in human serum or whole blood samples. • The results indicate that this platform could achieve a rapid and accurate detection of NAb specific to SARS-CoV-2, which could be used for detecting the protective effect of the vaccines
26 Apr 2022	Zurita-Cruz et al.	Usefulness of real-time RT-PCR to understand the kinetics of SARS-CoV-2 in blood: a prospective study	*Journal of Clinical Virology / Prospective Analysis*	• Recently, detection of SARS-CoV-2 RNA in blood samples (viremia) through RT-PCR has been considered as a potential predictor of poor prognosis, due to its association with rapid deterioration and death. • All patients with ICU admission and/or death during hospitalisation had persistent viremia, while none of the patients with sporadic viremia or negative viremia had poor clinical outcome in this cohort.
29 Apr 2022	McGrath & Aslam	Use of Imaging Technology to Assess the Effect of COVID-19 on Retinal Tissues: A Systematic Review	*Ophthalmology and Therapy/ Systematic Review and Meta-analysis*	• This study tests the hypothesis that non-invasive imaging of the retina could provide insight into the effect of COVID-19 on the retinal microvasculature. • Optical coherence tomography angiography scans show reduced central retinal vascular density, a thinner ganglion cell layer, a thicker retinal nerve fibre layer, and an enlarged foveal avascular zone. Optical coherence tomography scans demonstrate a thicker central macular thickness and other changes to the macula, ganglion cell, and inner nuclear layers. Many fundus photographs depicted cotton wool spots, microhaemorrhages, and vascular occlusions. • Non-invasive imaging technology has demonstrated that COVID-19 can profoundly affect the retina.

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

Back to Sections page

Evidence on Equipment and Devices (Part 2 of 2)

Date	Author/s	Title	Journal/ Article Type	Summary
01 May 2022	Mitratza et al	The performance of wearable sensors in the detection of SARS-CoV-2 infection: a systematic review	*The Lancet Digital Health / Systematic Review*	• Subtle changes in physiological parameters, discernible by wrist-worn devices could act as early digital biomarkers of infections. • Heart rate, heart rate variability, respiratory rate, skin temperature, and activity levels comprised the most commonly reported physiological parameters measured by wearable devices. • 8 studies showed positive association between SARS-CoV-2 infection and elevated heart rate. COVID-19-positive individuals had more recorded hours of abnormal heart rate during the infectious period than healthy peers or those who were ill from a cause other than COVID-19. • 3 of the 4 studies examining SARS-CoV-2 infection's effect on respiratory rate found that it increased around symptom onset. • Statistical analysis revealed an increase in temperature during a symptomatic SARS-CoV-2 infection

Evidence on Medical and Surgical Procedures

Date	Author/s	Title	Journal/ Article Type	Summary
---	---	---	---	---

Evidence on Traditional Medicine

Date	Author/s	Title	Journal/ Article Type	Summary
28 Apr 2022	Kow et al	The effect of curcumin on the risk of mortality in patients with COVID-19: A systematic review and meta-analysis of randomized trials	*Pytotherapy Research / Systematic Review & Meta-analysis*	• Curcumin is a natural polyphenolic compound which may reduce the progression of several inflammatory illnesses, making it a potential treatment option for patients with COVID-19. • In 1 study, the mRNA expression of interleukin-1β and interleukin-6 were dramatically decreased in patients with COVID-19 after the administration of nano-curcumin. • In 1 study, the number of Th17 cells and gene expression and serum levels of Th17-mediated cytokines significantly reduced upon administration of nano-curcumin in patients with COVID-19. • Only 1 trial demonstrated significantly reduced risk of mortality with curcumin, which could be due to the coadministration of piperine which acts to improve the absorption of curcumin.

Evidence on Preventive & Promotive Health

Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
--	--	--	--	--

Evidence on Personal Measures

Date	Author/s	Title	Journal/ Article Type	Summary
--	--	--	--	--

Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
27 Apr 2022	Patel et al.	Public health implications of adapting HIV pre-exposure prophylaxis programs for virtual service delivery in the context of the COVID-19 pandemic: a systematic review	*JMIR Public Health and Surveillance (preprint) / Systematic Review*	• This study describes adaptations that could address potential HIV-related service interruptions during the COVID-19 pandemic. • Technology-based interventions that were effective and feasible for PrEP service delivery include use of SMS, internet, smartphone applications, telehealth and eHealth platforms, and platforms for training health care workers. • These virtual platforms can strengthen both HIV prevention and COVID-19 service deliveries.

Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
--	--	--	--	--