

Weekly Evidence Report



Health Technology Assessment Philippines

22-29 July 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 July – 29 July 2022. The HTA Division reviewed a total of **14** studies for the said period.

Evidence includes **1** study on Epidemiology; **2** studies on Vaccines; **2** studies on Drugs; **1** studies on Transmission; **2** study on Equipment and Devices; **1** study on Medical and Surgical Procedures; **1** study on Traditional Medicine; **4** study on Preventive & Promotive Health; and **0** studies 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?qclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQljh8DX_VVSGA-HmO0Pt5_CscykID7xZv4zqjXG5vm9PM2xoC27QQAxD_BwE

Date	Author/s	Title	Journal/ Article Type	Summary
20 July 2022	WHO Global	Weekly epidemiological update on COVID-19 - 27 July 2022	<i>WHO Global Situation Report</i>	<ul style="list-style-type: none"> Globally, the number of weekly cases reported during the week of 18 to 24 July 2022 was similar to the number reported last week, with over 6.6 million new cases (Figure 1). Likewise, the number of new weekly deaths was similar to the number reported during the previous week, with over 12 600 fatalities. At the regional level, the number of new weekly cases increased in the Western Pacific Region (+52%), the Eastern Mediterranean Region (+45%) and the South-East Asia Region (+13%), while it decreased in the African Region (-44%), the European Region (-24%) and the Region of the Americas (-12%). The number of new weekly deaths increased in the Eastern Mediterranean Region (+88%), the Western Pacific Region (+19%) and the South-East Asia Region (+8%), while it decreased in the African Region (-47%) and the European Region (-6%). The number of new weekly deaths in the Region of the Americas was similar to the figure reported during the previous week. As of 24 July 2022, over 567 million confirmed cases and over 6.3 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 (no new updates for this period):

<https://www.who.int/publications/m/item/draft-landscape-of-covid-19-candidate-vaccines>

WHO SAGE Vaccine Recommendations (no new updates for this period):

<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
22 July 2022	Acharya, Budhatoki, & Khanal (2022)	Factors associated to acceptance and willingness to pay for COVID vaccine in Nepal	<i>Journal of Preventive Medicine and Hygiene / Cross-Sectional Study</i>	<ul style="list-style-type: none"> Data were collected using a survey questionnaire from 1072 respondents (age 20-60 years) from 14 districts of Nepal. Socio-demographic characteristics of the respondents were independent and acceptance of vaccine was the dependent variable.

Evidence on Vaccines (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
22 July 2022 cont.	Acharya, Budhatoki, & Khanal (2022)	Factors associated to acceptance and willingness to pay for COVID vaccine in Nepal	<i>Journal of Preventive Medicine and Hygiene / Cross-Sectional Study</i>	<p>(30-49 years), respondents belonged to Madhesi, business people in terms of occupation and the respondents who had completed school level education had a higher acceptance rate than other categories. It was observed that place of residence in terms of provinces or districts, age group, caste/ethnicity, and educational level of the respondents were significantly associated with the acceptance of the COVID vaccine. Moreover, respondents residing from Lumbini Province, age group of 30-39 years, and having secondary or higher education were noticed as more likely to accept the COVID vaccine than the respective compared groups.</p> <ul style="list-style-type: none"> • Appropriate information, education and communication needs to disseminate to minimize the misinformation about the COVID and lack of trust in vaccine that may lead to low acceptance and poor WTP for vaccine. These findings could be considered while making COVID and the COVID vaccine-related interventions.
22 July 2022	Martins-Branco et al (2022)	Immune response to anti-SARS-CoV-2 prime-vaccination in patients with cancer: a systematic review and meta-analysis	<i>Journal of Cancer Research and Clinical Oncology / Systematic review and meta-analysis</i>	<ul style="list-style-type: none"> • They performed a systematic literature search using PubMed, Embase, and Cochrane Library until 28/09/2021, and conference proceedings from ASCO and ESMO 2021 annual meetings. They screened for observational or interventional studies including subjects ≥ 16 years old with cancer diagnosis who were vaccinated against SARS-CoV-2. Prime-vaccination was defined as one dose of Ad26.COV2-S vaccine or two doses of BNT162b2, mRNA-1273, ChAdOx1-S or inactivated SARS-CoV-2 vaccine. The outcomes were humoral and adaptive immune responses (proportion of subjects with positive titers of antibody anti-SARS-CoV-2 spike protein and anti-SARS-CoV-2 cellular responses, respectively). • The overall seropositive rate within the first month after complete anti-SARS-CoV-2 prime-vaccination was 80% [95% confidence interval (CI), 72-86%], 60% (95%CI, 53-67%) in patients with hematological malignancies (HM) versus 94% (95%CI, 88-97%) in patients with solid malignancies (SM). The diagnosis of HM was significantly associated with a lower seropositive rate on multivariate meta-regression (odds ratio 0.35, 95% CI 0.18-0.69, HM versus both, p = 0.002). The overall humoral response was 49% (95% CI, 42-56%) after incomplete prime-vaccination and 79% (95% CI, 70-86%) at 2 months after complete prime-vaccination. These responses were also lower in patients with HM at these time points. The overall cellular response rate at any time after vaccination was 61% (95% CI, 44-76%).

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
18 July 2022	Benschop et al (2022)	The anti-SARS-CoV-2 monoclonal antibody bamlanivimab minimally affects the endogenous immune response to COVID-19 vaccination	<i>Journal of the American Heart Association / Observational Study</i>	<ul style="list-style-type: none"> • This longitudinal serological study evaluated the magnitude and potency of the endogenous antibody response to COVID-19 vaccination in participants who first received a COVID-19 monoclonal antibody in a prevention study. • Over the course of 6 months, serum samples were collected from a population of nursing home residents and staff enrolled in a clinical trial who were randomized to either bamlanivimab treatment or placebo. In an unplanned component of this trial, a subset of these participants was subsequently fully vaccinated with two doses of either SpikeVax (Moderna) or Comirnaty (BioNTech/Pfizer) COVID-19 mRNA. • This post hoc analysis assessed the immune response to vaccination for 135 participants without prior SARS-CoV-2 infection. Antibody titers and potency were assessed using three assays against SARS-CoV-2 proteins that bamlanivimab does not efficiently bind to, thereby reflecting the endogenous antibody response. • All bamlanivimab and placebo recipients mounted a robust immune response to full COVID-19 vaccination, irrespective of age, risk category, and vaccine type with any observed differences of uncertain clinical importance. These findings are pertinent for informing public health policy with results that suggest that the benefit of receiving COVID-19 vaccination at the earliest opportunity outweighs the minimal effect on the endogenous immune response due to prior prophylactic COVID-19 monoclonal antibody infusion.
25 July 2022	Pitre et al (2022)	Antiviral drug treatment for nonsevere COVID-19: a systematic review and network meta-analysis	<i>Canadian Medical Association Journal / Systematic review and meta-analysis</i>	<ul style="list-style-type: none"> • We searched the Epistemonikos COVID-19 L:OVE (Living Overview of Evidence) database for randomized trials comparing antiviral treatments, standard care or placebo in adult patients with nonsevere COVID-19 up to Apr. 25, 2022. Reviewers extracted data and assessed risk of bias. • We identified 41 trials, which included 18 568 patients. Compared with standard care or placebo, molnupiravir and nirmatrelvir-ritonavir each reduced risk of death with moderate certainty (10.9 fewer deaths per 1000, 95% confidence interval [CI] 12.6 to 4.5 fewer for molnupiravir; 11.7 fewer deaths per 1000, 95% CI 13.1 fewer to 2.6 more). Compared with molnupiravir, nirmatrelvir-ritonavir probably reduced risk of hospital admission (27.8 fewer admissions per 1000, 95% CI 32.8 to 18.3 fewer; moderate certainty). Remdesivir probably has no effect on risk of death, but may reduce hospital admissions (39.1 fewer admissions per 1000, 95% CI 48.7 to 13.7 fewer; low certainty).

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

Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
29 July 2022	Gupta et al (2022)	Quantification of diurnal variation in “glove hygiene” compliance in COVID ICUs: an exploratory study	<i>American Journal of Infection Control / Prospective Cohort Study</i>	<ul style="list-style-type: none"> • A prospective, observational study was conducted in three COVID-19 intensive care units (ICUs) with closed-circuit television (CCTV) cameras. Dedicated infection control nurses monitored HHC among various HCWs (doctors, nursing staff, technicians, hospital and sanitary attendants) during day and nighttime, in 20- minute durations. The difference in HHC by-professional category and for each WHO moment was assessed using chi-square test and p value. • A total of 705 opportunities were observed over a period of seven days, with overall compliance of 53%. Day and nighttime compliance was recorded to be 60.7% and 42.1%, respectively ($p < 0.001$). HCC was highest amongst resident doctors with little diurnal variation. However, nurses and housekeeping staff exhibited significant diurnal variation. The compliance at “after” moments was much higher than “before” moments in all professional categories.

Evidence on Equipment and Devices

Date	Author/s	Title	Journal/ Article Type	Summary
22 July 2022	Dinnes et al (2022)	Rapid, point-of-care antigen tests for diagnosis of SARS-CoV-2 infection	<i>Cochrane Database Systematic Reviews / Systematic Review</i>	<ul style="list-style-type: none"> • They searched the COVID-19 Open Access Project living evidence database from the University of Bern (which includes daily updates from PubMed and Embase and preprints from medRxiv and bioRxiv) on 08 March 2021. They included independent evaluations from national reference laboratories, FIND and the Diagnostics Global Health website. They did not apply language restrictions. • Two people independently carried out quality assessment (using the QUADAS-2 tool) and extracted study results. Other study characteristics were extracted by one review author and checked by a second. We present sensitivity and specificity with 95% confidence intervals (CIs) for each test, and pooled data using the bivariate model. We investigated heterogeneity by including indicator variables in the random-effects logistic regression models. We tabulated results by test manufacturer and compliance with manufacturer instructions for use and according to symptom status.

Evidence on Equipment and Devices (*cont.*)

Date	Author/s	Title	Journal/ Article Type	Summary
22 July 2022	Dinnes et al (2022)	Rapid, point-of-care antigen tests for diagnosis of SARS-CoV-2 infection	<i>Cochrane Database Systematic Reviews / Systematic Review</i>	<ul style="list-style-type: none"> The 152 studies of single test applications reported 228 evaluations of antigen tests. Estimates of sensitivity varied considerably between studies, with consistently high specificities. Average sensitivity was higher in symptomatic (73.0%, 95% CI 69.3% to 76.4%; 109 evaluations; 50,574 samples, 11,662 cases) compared to asymptomatic participants (54.7%, 95% CI 47.7% to 61.6%; 50 evaluations; 40,956 samples, 2641 cases). Average sensitivity was higher in the first week after symptom onset (80.9%, 95% CI 76.9% to 84.4%; 30 evaluations, 2408 cases) than in the second week of symptoms (53.8%, 95% CI 48.0% to 59.6%; 40 evaluations, 1119 cases).
29 July 2022	Attallah & Samir (2022)	A wavelet-based deep learning pipeline for efficient COVID-19 diagnosis via CT slices	<i>Applied Soft Computing / Diagnostic Accuracy Study</i>	<ul style="list-style-type: none"> This article proposes a DL-based pipeline called CoviWavNet for the automatic diagnosis of COVID-19. CoviWavNet uses a 3D multiview dataset called OMNIAHCOV. Initially, it analyzes the CT slices using multilevel discrete wavelet decomposition (DWT) and then uses the heatmaps of the approximation levels to train three ResNet CNN models. These ResNets use the spectral-temporal information of such images to perform classification. Subsequently, it investigates whether the combination of spatial information with spectral-temporal information could improve the diagnostic accuracy of COVID-19. For this purpose, it extracts deep spectral-temporal features from such ResNets using transfer learning and integrates them with deep spatial features extracted from the same ResNets trained with the original CT slices. Then, it utilizes a feature selection step to reduce the dimension of such integrated features and use them as inputs to three support vector machine (SVM) classifiers. To further validate the performance of CoviWavNet, a publicly available benchmark dataset called SARS-COV-2-CT-Scan is employed. The results of CoviWavNet have demonstrated that using the spectral-temporal information of the DWT heatmap images to train the ResNets is superior to utilizing the spatial information of the original CT images. Furthermore, integrating deep spectral-temporal features with deep spatial features has enhanced the classification accuracy of the three SVM classifiers reaching a final accuracy of 99.33% and 99.7% for the OMNIAHCOV and SARS-COV-2-CT-Scan datasets respectively. These accuracies verify the outstanding performance of CoviWavNet compared to other related studies. Thus, CoviWavNet can help radiologists in the rapid and accurate diagnosis of COVID-19 diagnosis.

Evidence on Medical and Surgical Procedures

Date	Author/s	Title	Journal/ Article Type	Summary
29 July 2022	Palmisano et al	Advanced cardiac imaging in the spectrum of COVID-19 related cardiovascular involvement	<i>Clinical Imaging / Scoping Review</i>	<ul style="list-style-type: none"> Cardiovascular involvement is a common complication of COVID-19 infection and is associated to increased risk of unfavorable outcome. Advanced imaging modalities (coronary CT angiography and Cardiac Magnetic Resonance) play a crucial role in the diagnosis, follow-up and risk stratification of patients affected by COVID-19 pneumonia with suspected cardiovascular involvement. In the present manuscript they firstly review current knowledge on the mechanisms by which SARS-CoV-2 can trigger endothelial and myocardial damage. Secondly, the implications of the cardiovascular damage on patient's prognosis are presented. Finally, they provide an overview of the main findings at advanced cardiac imaging characterizing COVID-19 in the acute setting, in the post-acute syndrome, and after vaccination, emphasizing the potentiality of CT and CMR, the indication and their clinical implications. The choice of the most appropriate imaging modality and acquisition protocol needs to be tailored to patient's clinical features and suspicion. CT angiography allows accurately characterizing vessels involvement. Moreover, independently by the selected protocol, CT can provide a multiplicity of ancillary information useful for a more comprehensive patients' characterization and risk stratification. CMR has the advantage of enabling accurate myocardial tissue characterization, being able to exclude preexisting cardiomyopathies and to identify subclinical cardiac injury, myocardial inflammation, and abnormalities potentially affecting quality of life or increasing risk of future events.

Evidence on Traditional Medicine

Date	Author/s	Title	Journal/ Article Type	Summary
28 July 2022	Xu et al.	Analysis of mechanisms of shenhuang granule in treating severe COVID-19 based on network pharmacology and molecular docking	<i>Journal of Integrative Medicine / Phytochemical Study</i>	<ul style="list-style-type: none"> • Liquid chromatography-mass spectrometry (LC-MS) grade methanol and acetonitrile were provided by Merck KGaA (Shanghai, China). The same grade methanoic acid (Y9330090) was purchased from Thermo Fisher Scientific Co., Ltd (Shanghai, China). The deionized water (20210402C) was provided by Guangzhou Watsons Food & Beverage Co., Ltd (Guangzhou, China). • Forty-five chemical constituents of SHG were identified along with 131 corresponding therapeutic targets, including hub genes such as HSP90AA1, MMP9, CXCL8, PTGS2, IFNG, DNMT1, TYMS, MDM2, HDAC3 and ABCB1. Functional enrichment analysis indicated that SHG mainly acted on the neuroactive ligand-receptor interaction, calcium signaling pathway and cAMP signaling pathway. Molecular docking showed that the key constituents had a good affinity with the severe acute respiratory syndrome coronavirus 2 protein targets. Molecular dynamics simulations indicated that ginsenoside Rg4 formed a stable protein-ligand complex with helicase.

Evidence on Preventive & Promotive Health

Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
23 July 2022	Loleka & Ogawa (2022)	Influence of the Level of Education on Women's Knowledge, Attitude, and Practices to Control the Transmission of COVID-19 in the Democratic Republic of the Congo	<i>Scientific African / Retrospective Cohort Study</i>	<ul style="list-style-type: none"> • Adequate knowledge, attitude, and practices (KAP) towards the novel coronavirus (COVID-19) can reduce its spread and may also be useful in preventing and controlling the transmission of severe acute respiratory syndrome coronavirus 2 (ARS-CoV-2) in the community. • This study examines the influence of women's education level on COVID-19 KAP behaviour in the Democratic Republic of the Congo (DRC). This study uses COVID-19 data obtained from the Performance Monitoring for Action (PMA) in Kinshasa, the DRC's capital city. Data were collected through telephone interviews held in June 2020 with a representative sample of 1,773 women aged 15–49 years. Data were then analysed using multiple probit regression and marginal effects techniques. • To address possible sample selection bias due to the use of a telephone to recruit participants, the data were adjusted to account for the selectivity due to telephone number ownership through inverse probability weighting. In general, the results of this study indicate no statistically significant difference in the influence of the level of education on women's KAP to control the transmission of COVID-19 in the DRC, women with higher levels of education are not found to always exhibit improved knowledge, attitude, or practices of appropriate strategies for the prevention and control of COVID-19 in the DRC. • The results also indicate that education can have both positive and negative influences in alleviating the burden of COVID-19

Evidence on Preventive & Promotive Health

Evidence on Personal Measures

Date	Author/s	Title	Journal/ Article Type	Summary
28 July 2022	Lott, A et al.	Impact of the COVID-19 pandemic on suicidal attempts and death rates: a systematic review	<i>BMC Psychiatry/ Systematic Review</i>	<ul style="list-style-type: none"> • Cross-sectional and cohort studies investigating the outcomes of suicidal death and suicidal attempts at any setting during the COVID-19 pandemic were searched in Medline, Embase, and PsycINFO databases for papers published from December 2019 to May 2021. • Out of 1052 studies, 18 studies with 12,746 suicidal attempts and 33,345 suicidal deaths were included in the final analysis. The mental health impact of social distancing, COVID-19 quarantine, and financial crises due to loss of employment were associated risk factors with suicide and/or suicidal attempts during the COVID-19 pandemic. Six common thematic recommendations for preventing suicidal deaths and suicidal attempts were identified.

Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
28 July 2022	Faruk et al (2022)	Perception and determinants of Social Networking Sites (SNS) on spreading awareness and panic during the COVID-19 pandemic in Bangladesh	<i>Health Policy OPEN / Retrospective Cohort Study</i>	<ul style="list-style-type: none"> • This research is based on primary data collected from 400 successful respondents via online Google Form. Bivariate Pearson's Chi-square and multivariate binary logistic regression analysis were performed to determine the impact of the explanatory variables on the study variables. • This study reveals that most respondents (n=360, 90%) use SNS to get up-to-date news, and 72.5% (n=290) read health-related information. The highest number of participants (n=386, 96.5%) were Facebook users. Multivariate binary logistic regression reveals that “reading news on SNS” and “sharing information related to COVID-19 on social media” significantly influence the spread of awareness of COVID-19. “Unauthentic news sources” and “stop using social media to stay away from panic” also have a substantial impact on the spread of panic during the COVID-19 pandemic.

Evidence on Preventive & Promotive Health

Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
29 July 2022	Fadaak et al (2022)	Considering context: Adaptive elements of a simulation program to improve primary care safety during the COVID-19 pandemic in Alberta, Canada	<i>American Journal of Infection Control / Participatory Action Research</i>	<ul style="list-style-type: none"> • Their team of “action researchers” developed an innovative virtual tabletop simulations (TTS) intervention which assisted infection prevention and control (IPC) teams as they adapted, implemented, and integrated IPC guidance into their specific clinical contexts. While they have detailed the “technical” elements of the TTS program elsewhere, this paper examines the specific “adaptive” elements that made this intervention successful in the high-income country context of Alberta, Canada. • Multiple factors influenced the uptake of this program in our Albertan setting, including: cultural geography; approach to financing and delivering PC; and policies and cultural norms supporting PC integration, medical education and research, and egalitarian teamwork. • Virtual TTS may provide substantial benefits to IPC and safety improvements in PC settings globally. However, the specific technical and adaptive elements of our Albertan TTS program might, or might not, make these a viable IPC intervention for adapting, spreading, and scaling to other settings.

Evidence on Other Health Technologies

Date	Author/s	Title	Journal/ Article Type	Summary
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