

Weekly Evidence Report

Health Technology Assessment Philippines



10 Jan 2022 to 16 Jan 2022

Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Unit reviewed for the period of 10 Jan to 16 Jan 2022. The HTA Unit reviewed a total of **18 studies** for the said period.

Evidence includes **2 studies** on Epidemiology; **2 studies** on Transmission; **2 studies** on Drugs; **1 study** on Vaccines, **2 studies** on Equipment and Devices; **2 studies** on Medical and Surgical Procedures; **0 studies** on Traditional Medicine; and **7 studies** on Preventive & Promotive Health.



Sections

Epidemiology

Transmission

Drugs

Vaccines

Equipment & Devices

Medical & Surgical Procedures

Traditional Medicine

Preventive & Promotive Health

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 |
|-------------|---|---|--------------------------|--|
| 11 Jan 2022 | WHO Global | Weekly epidemiological update on COVID-19 - 11 January 2022 | Situation Report | All regions reported an increase in the incidence of weekly cases except for the Africa Region, which reported an 11% decrease. The South-East Asia region reported the largest increase in new cases last week (418%), followed by the Western Pacific Region (122%), the Eastern Mediterranean Region (86%), the Region of the Americas (78%) and the European Region (31%). New weekly deaths increased in the African Region (84%) and Region of the Americas (26%) while it remained similar to the previous week in the Western Pacific Region. A decrease in new weekly deaths was reported in the Eastern Mediterranean Region (11%), the European Region (10%) and in the South-East Asia Region (6%). |
| 13 Jan 2022 | European Centre for Disease Prevention and Control (ECDC) | Weekly COVID-19 Surveillance Report | Situation Report | At the end of week 1 (week ending Sunday 9 January 2022), the overall epidemiological situation in the EU/EEA was characterised by a high overall case notification rate which has increased rapidly in the past three weeks and an elevated but stable death rate. Increases in hospital or ICU indicators have been observed in 13 of 28 countries with this information. High and increasing case notification rates or an epidemiological situation of high or very high concern was observed in all but two European Union (EU) Member States. While the rapid spread of the Omicron variant continues, both Delta and Omicron are co-circulating, with reported cases due to Omicron that are younger than those due to Delta. |

Evidence on Transmission

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|---------------------|---|--------------------------|--|
| 13 Jan 2022 | Ayuso, S. A., et al | The AEROSolization of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2): Phase I | Original Paper | The degree to which Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is aerosolized has yet to be determined. The aim of this study is to prove methods of detection of aerosolization of SARS-CoV-2 in hospitalized patients in anticipation of testing for aerosolization in procedural and operative settings. In this prospective study, inpatients with SARS-CoV-2 were identified. Demographic information was obtained, and a symptom questionnaire was completed. Polytetrafluoroethylene (PTFE) filters, which were attached to an air pump, were used to detect viral aerosolization and placed in four locations in each patient's room. The filters were left in the rooms for a three-hour period. The results of this suggest that there is limited aerosolization of SARS-CoV-2 and provided proof of concept for this filter sampling technique. Further studies with increased sample size should be performed in a procedural and operative setting to provide more information about SARS-CoV-2 aerosolization. |
| 15 Jan 2022 | Buonanno, G., et al | Link Between SARS-CoV-2 Emissions and Airborne Concentrations: Closing the Gap in Understanding Author links open overlay panel | Original Paper | The airborne transmission of SARS-CoV-2 remains surprisingly controversial; indeed, health and regulatory authorities still require direct proof of this mode of transmission. To close this gap, we measured the viral load of SARS-CoV-2 of an infected subject in a hospital room (through an oral and nasopharyngeal swab), as well as the airborne SARS-CoV-2 concentration in the room resulting from the person breathing and speaking. Moreover, we simulated the same scenarios to estimate the concentration of RNA copies in the air through a novel theoretical approach and conducted a comparative analysis between experimental and theoretical results. Results showed that for an infected subject's viral load ranging between 2.4×10^6 and 5.5×10^6 RNA copies mL ⁻¹ , the corresponding airborne SARS-CoV-2 concentration was below the minimum detection threshold when the person was breathing, and 16.1 (expanded uncertainty of 32.8) RNA copies m ⁻³ when speaking. |

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

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Evidence on Drugs

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|-----------------------|--|---------------------------------|---|
| 11 Jan 2022 | Napolitano, V., et al | Acriflavine, a clinically approved drug, inhibits SARS-CoV-2 and other betacoronaviruses | Original Paper | The COVID-19 pandemic caused by SARS-CoV-2 has been socially and economically devastating. Despite an unprecedented research effort and available vaccines, effective therapeutics are still missing to limit severe disease and mortality. Using high-throughput screening, we identify acriflavine (ACF) as a potent papain-like protease (PL ^{pro}) inhibitor. NMR titrations and a co-crystal structure confirm that acriflavine blocks the PL ^{pro} catalytic pocket in an unexpected binding mode. We show that the drug inhibits viral replication at nanomolar concentration in cellular models, in vivo in mice and ex vivo in human airway epithelia, with broad range activity against SARS-CoV-2 and other betacoronaviruses. Considering that acriflavine is an inexpensive drug approved in some countries, it may be immediately tested in clinical trials and play an important role during the current pandemic and future outbreaks. |
| 12 Jan 2022 | Cullivan, S., et al | Anticoagulation as a therapeutic strategy for hospitalised patients with COVID-19 | Original Paper / Scoping Review | In this review we summarise data generated from three published randomised clinical trials. In the multiplatform REMAP-CAP, ACTIV-4a and ATTACC randomised controlled trials, therapeutic heparin was not associated with benefit in critically ill patients with COVID-19 compared with usual care (adjusted proportional odds ratio (OR) for increased organ-support free days up to day 21: 0.83; 95% credible interval, 0.67–1.03, posterior probability of futility 99.9%). Conversely, among hospitalised patients without critical illness, therapeutic heparin was associated with an increased probability of organ support-free days alive (adjusted OR, 1.27; 95% credible interval, 1.03–1.58). No benefit for therapeutic anticoagulation with heparin was evident in critically ill patients with COVID-19. Therefore, while the results of additional studies in this evolving field are pending, it is important to approach decisions regarding therapeutic heparin in moderately ill hospitalised patients with COVID-19 in a measured and individualised manner. |

Evidence on Vaccines

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|--------------------|--|--------------------------------------|--|
| 15 Jan 2022 | Bedston, S., et al | COVID-19 vaccine uptake, effectiveness, and waning in 82,959 health care workers: A national prospective cohort study in Wales | Original Paper / Observational Study | <p>We conducted a national cohort study of health care workers in Wales (UK) from 7 December 2020 to 30 September 2021. We examined uptake of any COVID-19 vaccine, and the effectiveness of BNT162b2 mRNA (Pfizer-BioNTech) against polymerase chain reaction (PCR) confirmed SARS-CoV-2 infection. We used linked and routinely collected national-scale data within the SAIL Databank. Data were available on 82,959 health care workers in Wales, with exposure extending to 26 weeks after second doses.</p> <p>Overall vaccine uptake was high (90%), with most health care workers receiving the BNT162b2 vaccine (79%). Vaccine uptake differed by age, staff role, socioeconomic status; those aged 50–59 and 60+ years old were 1.6 times more likely to get vaccinated than those aged 16–29. Medical and dental staff, and Allied Health Practitioners were 1.5 and 1.1 times more likely to get vaccinated, compared to nursing and midwifery staff. The effectiveness of the BNT162b2 vaccine was found to be strong and consistent across the characteristics considered; 52% three to six weeks after first dose, 86% from two weeks after second dose, though this declined to 53% from 22 weeks after the second dose.</p> |

NYT Coronavirus Vaccine Tracker:

<https://www.nytimes.com/interactive/2020/science/coronavirus-vaccine-tracker.html>

Bloomberg Vaccine Tracker:

<https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>

London School of Hygiene and Tropical Medicine Vaccine Trial Mapper and Tracker:

https://vac-lshtm.shinyapps.io/ncov_vaccine_landscape/

ACIP Files:

https://drive.google.com/drive/u/0/folders/1v-jd66qlIxnUkfzXWKqiD0mkVvqy_VvJ?pli=1

Evidence on Medical and Surgical Procedures

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|-----------------------|--|-----------------------------|---|
| 12 Jan 2022 | Pourhassan, H., et al | Successful outcome of pre-engraftment COVID-19 in an HCT patient: impact of targeted therapies and cellular immunity | Original Paper / Case Study | <p>Coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection has emerged as a global pandemic that upended existing protocols and practices, including those for allogeneic hematopoietic stem cell transplantation (HCT). Here we describe the successful clinical course and multiple key interventions administered to an acute lymphoblastic leukemia patient, who tested SARS-CoV-2 positive by RT-PCR on day -1 of matched unrelated donor (SARS-CoV-2 IgG negative) T-cell-replete HCT. This experience allowed for implementing a virologic and immunomonitoring panel to characterize the impact of SARS-CoV-2 on the recipient's nascent humoral and cellular immune response. The finding of robust, functional, and persistent levels of SARS-CoV-2 specific T-cells, starting early after transplant was unexpected, and in combination with the clinical strategy may have contributed to the favorable outcome. Additionally, it is plausible that pre-existing cross-reactive endemic coronavirus immunity in the allogeneic graft reduced recipient susceptibility to COVID-19 disease. This case supports the critical role that T-cell responses may play in mitigating SARS-CoV-2 infection, even in the context of transplant immunosuppression, in which reconstitution of humoral response is commonly delayed. Interventional approaches to transfer SARS-CoV-2-specific cellular immunity such as HCT donor vaccination and adaptive cellular therapy could be of benefit.</p> |

Evidence on Medical and Surgical Procedures

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|-----------------------|---|---|---|
| 13 Jan 2022 | Galipienzo, J., et al | Perioperative management of non-deferrable oncologic surgeries during COVID-19 pandemic in Madrid, Spain. Is it safe? | Original Paper / Observational Study | <p>Prospective study with retrospective analysis of 355 patients who had undergone nondeferrable oncological surgery between March 16th, 2020, and April 14th, 2020, at our institution. The aim of the study was to assess the hospital restructuring and surgical protocols to be able to safely handle non-deferrable surgeries during the first wave of the Covid-19 pandemic. We implemented structural changes and an updated surgical-anesthetic protocol in order to isolate Covid-19 patients from other surgical patients. Comprehensive targeted screening for Covid-19 patients was made. PCR tests were requested for suspected Covid-19 patients. We analyzed mortality and complications related to both surgery and Covid-19 during hospital admission and also 15 and 30 days after surgery. We compared it with a sample of similar patients in the pre-pandemic period.</p> <p>Of the 355 patients enrolled in our study, 21 were removed due to Covid-19 infection, leaving a total of 334 patients in our final analysis. Post-operative complications were found in 37 patients (11.07%). Two patients died after surgery (0.6%). At the end of the study, Covid-19-related adverse outcomes were detected in six patients (1.79%). When comparing the complications of our original sample with the complications that occurred in the pre-covid era, we found no statistically significant differences.</p> |

Evidence on Equipment & Devices

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|-----------------------------|--|--|---|
| 13 Jan 2022 | Hipolito Canario, D., et al | Using artificial intelligence to risk stratify COVID-19 patients based on chest X-ray findings | Original Paper / Clinical Validation Study | <p>This study sought to determine whether a modified commercially available deep learning algorithm (M-qXR) could risk stratify patients with suspected COVID-19 infections. A dual track clinical validation study was designed to assess the clinical accuracy of M-qXR. The algorithm evaluated all Chest-X-rays (CXRs) performed during the study period for abnormal findings and assigned a COVID-19 risk score. Four independent radiologists served as radiological ground truth. The M-qXR algorithm output was compared against radiological ground truth and summary statistics for prediction accuracy were calculated. In addition, patients who underwent both PCR testing and CXR for suspected COVID-19 infection were included in a co-occurrence matrix to assess the sensitivity and specificity of the M-qXR algorithm.</p> <p>625 CXRs were included in the clinical validation study. 98% of total interpretations made by M-qXR agreed with ground truth ($p = 0.25$). M-qXR correctly identified the presence or absence of pulmonary opacities in 94% of CXR interpretations. M-qXR's sensitivity, specificity, PPV, and NPV for detecting pulmonary opacities were 94%, 95%, 99%, and 88% respectively. M-qXR correctly identified the presence or absence of pulmonary consolidation in 88% of CXR interpretations ($p = 0.48$). M-qXR's sensitivity, specificity, PPV, and NPV for detecting pulmonary consolidation were 91%, 84%, 89%, and 86% respectively. Furthermore, 113 PCR-confirmed COVID-19 cases were used to create a co-occurrence matrix between M-qXR's COVID-19 risk score and COVID-19 PCR test results. The PPV and NPV of a medium to high COVID-19 risk score assigned by M-qXR yielding a positive COVID-19 PCR test result was estimated to be 89.7% and 80.4% respectively.</p> |

Evidence on Equipment & Devices

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|-------------------------|--|--|---|
| 14 Jan 2022 | Granell Gill, M., et al | Airway management of COVID-19 patients: A survey on the experience of 1125 physicians in Spain | Original Paper / Cross-Sectional Study | <p>A software-based survey including a 32-item questionnaire was conducted from April 18 to May 17, 2020. Participants who have been involved in tracheal intubations in patients with suspected or confirmed COVID-19 infection were included anonymously after obtaining their informed consent. The primary outcome was the preferred airway device for tracheal intubation. Secondary outcomes included the variations in clinical practice including the preferred video laryngoscope, plans for difficult airway management, and personal protective equipment. The preferred device for intubation was the video laryngoscope (5.1/6), with the type of device in decreasing order as follows: Glidescope, C-MAC, Airtraq, McGrath and King Vision. The most frequently used device for intubation was the video laryngoscope (70,5%), using them in descending order as follow: the Airtraq, C-MAC, Glidescope, McGrath and King Vision. Discomfort of intubating wearing personal protective equipment and the frequency of breaching a security step was statistically significant, increasing the risk of cross infection between patients and healthcare workers. The opinion of senior doctors differed from younger physicians in the type of video-laryngoscope used, the number of experts involved in tracheal intubation and the reason that caused more stress during the airway management.</p> |

Evidence on Preventive & Promotive Health

Evidence on Personal Measures

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|-------------------|---|---------------------------------|---|
| 12 Jan 2022 | Joshee, S., et al | Long-Term Effects of COVID-19 | Original Paper / Scoping Review | Recent literature on the long-term health consequences of COVID-19 discusses the need for a comprehensive understanding of the multisystemic pathophysiology, clinical predictors, and epidemiology to develop and inform an evidence-based, multidisciplinary management approach. A PubMed search was completed using variations on the term post-acute COVID-19. Only peer-reviewed studies in English published by July 17, 2021 were considered for inclusion. All studies discussed in this text are from adult populations unless specified (as with MIS-C). The preliminary evidence on the pulmonary, cardiovascular, neurological, hematological, multisystem inflammatory, renal, endocrine, gastrointestinal, and integumentary sequelae of shows that COVID-19 continues after acute infection. Interdisciplinary monitoring with holistic management that considers nutrition, physical therapy, psychological management, meditation, and mindfulness in addition to medication will allow for the early detection of post-acute COVID-19 sequelae symptoms and prevent long-term systemic damage. This review serves as a guideline for effective management based on current evidence, but clinicians should modify recommendations to reflect each patient's unique needs and the most up-to-date evidence. The presence of long-term effects presents another reason for vaccination against COVID-19. |

Evidence on Preventive & Promotive Health

Evidence on Personal Measures

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|--------------------------|---|---|--|
| 13 Jan 2022 | Karagöl, A. and Kaya, Z. | Healthcare Workers' Burn-out, Hopelessness, Fear of COVID-19 and Perceived Social Support Levels | Original Paper / Cross-Sectional Study | This study evaluated the healthcare workers' levels of burn-out, hopelessness, fear of COVID-19 and perceived social support, the relation between these factors, and other possible related components. The participants who were on duty in the COVID-19 clinic, complaining about the low salary or not having enough time for themselves or their own family, had significantly higher scores on three subscales of burn-out scale, and hopelessness scale. Working at governmental hospitals, working at departments containing a high risk of COVID-19 infection, and having a history of COVID-19 infection were found to be significantly associated with emotional exhaustion, depersonalization, and hopelessness. Feeling control of your profession and getting social support from others were the two factors that tackle burnout in HCW. Family support is the only support that tackles all 3 subscales of burn-out and hopelessness. |
| 14 Jan 2022 | Barisone, M., et al | Nursing students' clinical placement experiences during the Covid-19 pandemic: a phenomenological study | Original Paper / Phenomenological Study | This study explored the clinical placement experiences of nursing students during the Covid-19 pandemic. We conducted a descriptive qualitative study employing a phenomenological approach. The study population was second and third-year nursing students. The students did their clinical placement in 5 Northern Italy hospitals, mainly in infectious diseases wards, intensive care and sub-intensive care units, emergency department, short-stay surgical units and internal medicine wards. In these departments, the inpatient wards were entirely converted into Covid-19 units. Ethical approval was obtained from the local ethics committee. Three main themes were generated: (i) Learning which surpasses technicalities; (ii) Confronting dignity issues; (iii) Feeling treated as an equal in the workspace. Students had to learn how to lower their fear and self-manage the emotional burden to be a caring presence for the patients who were intensely suffering from the disease and isolation. |

Evidence on Preventive & Promotive Health

Evidence on Community Measures

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|----------------------|---|--|---|
| 12 Jan 2022 | Francesco, B., et al | Lockdown Policies: A Macrodynamic Perspective for COVID-19 | Original Paper / Policy Analysis | The COVID-19 pandemic has produced a global health and economic crisis. The entire world has faced a trade-off between health and recessionary effects. This paper investigates this trade-off according to a macro-dynamic perspective. We set up and simulate a Dynamic Stochastic General Equilibrium model to analyze the COVID-19 contagion within an economy with endogenous dynamics for the pandemic, variable labor utilization, and four lockdown policies with different degrees of size and duration. There are three main results in this study. First, the model matches rather well with the main European economies' preliminary stylized facts during the COVID-19 pandemic. In particular, a temporary lockdown policy reduces the epidemic's size but exacerbates the recession's severity. The negative peak in aggregate production ranges from 10 percent with a soft containment measure to 25 percent with a strong containment measure; second, recovery from recession emerges when the lockdown policy is relaxed. On that basis, the output return to its pre-lockdown level after about 50 weeks. Third, sectors characterized by flexible and capital-intensive technology suffer a more severe slowdown. |
| 13 Jan 2022 | Seidu, S., et al | The impact of the COVID pandemic on primary care diabetes services in the UK: A cross-sectional national survey of views of health professionals delivering diabetes care | Original Paper / Cross-Sectional Study | Using an online survey, they examined the impact of the COVID pandemic on primary care diabetes services in the UK. Overall 79.1% of respondents felt the COVID-19 pandemic had had moderate to significant impact on their practice's ability to provide routine diabetes care; 70.6% of respondents felt the COVID-19 pandemic had had moderate to significant impact on their practice's ability to provide routine health checks or screening for type 2 diabetes and approximately half of respondents (48.3%) reported encountering mental health concerns in people with diabetes. |

Evidence on Preventive & Promotive Health

Evidence on Community Measures

| Date | Author/s | Title | Journal/ Article Type | Summary |
|-------------|--|---|----------------------------------|---|
| 13 Jan 2022 | Aboura, S. | The influence of climate factors and government interventions on the Covid-19 pandemic: Evidence from 134 countries | Original Paper / Policy Analysis | This paper investigates at the world level the influence of climate on the transmission of the SARS-CoV-2 virus. For that purpose, panel regressions of the number of cases and deaths from 134 countries are run on a set of explanatory variables (air temperature, relative humidity, precipitation, and wind) along with control variables (government interventions and population size and density). The analysis is completed with a panel threshold regression to check for potential non-linearities of the weather variables on virus transmission. The main findings support the role of climate in the circulation of the virus across countries. The detailed analysis reveals that relative humidity reduces the number of cases and deaths in both low and high regimes, while temperature and wind reduce the number of deaths. |
| 15 Jan 2022 | Fattahi, M., Keyvanshokoo h, E., and Govindan D. | Resource planning strategies for healthcare systems during a pandemic | Original Paper / Policy Analysis | This study considers various types of patients and resources to provide access to patient care with minimum capacity extension. The number of patients requiring scarce healthcare resources is uncertain and dependent on the speed of the pandemic's transmission through a region. They developed a multi-stage stochastic program to optimize various strategies for planning limited and necessary healthcare resources. They simulated uncertain parameters by deploying an agent-based continuous-time stochastic model, and then capture the uncertainty by a forward scenario tree construction approach. They used two different case studies related to COVID-19 to examine our optimization and simulation tools by extensive computational results. The results highlight these strategies can significantly improve patient access to care during pandemics; their significance will vary under different situations. |

Evidence on Screening

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