Weekly Evidence Report

Health Technology Assessment Philippines

16 October - 22 October 2021

Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Unit reviewed for the period of October 16 - October 22, 2021. The HTA Unit reviewed a total of 12 studies for the said period.

Evidence includes 2 studies on Epidemiology; 3 studies on Transmission; 2 studies on Drugs; 2 studies on Vaccines, 2 studies on Equipment and Devices; 1 studies on Medical and Surgical Procedures; 1 studies on Traditional Medicine; and 0 study on Preventive & Promotive Health.

The following report notes that 0 studies have not been peer-reviewed, each highlighted accordingly.

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
18 Oct 2021	Paireau et al., 2021	Effect of change in vaccine schedule on pertussis epidemiology in France: a modelling and serological study	*Research Article - The Lancet (Infectious Diseases)*	• The study aimed to assess the subsequent effect of the vaccine schedule change on pertussis epidemiology in France. • This modelling study used the data from French national surveillance sources from 01 January 2012 to 21 December 2019. The researchers analysed the PCR test results of nasopharyngeal swabs collected from symptomatic outpatients aged 2–20 years with suspected pertussis (n=7493). • **Three (3) years after vaccination, the risk of developing pertussis was 1·7** (95% CI 1·4–2·0) **times higher for children vaccinated according to the new schedule** than those vaccinated according to the former schedule. • **Geometric mean concentrations (GMC) of anti-PT IgG** were 50% and 43% **lower** in children aged 2 and 3 years, respectively, vaccinated with the **new schedule**. • A **shorter-lived protection induced by the new vaccine schedule** recommended in France since 2013 is associated with an **increase of pertussis cases in children aged 2–5 years.**

21 Oct 2021	Jayaraj et al., 2021	The Epidemiology of COVID-19 in Malaysia	*Review article - The Lancet (Regional Health - Western Pacific)*	• Between 16 March 2020 and 31 May 2021, Malaysia has reported:
				  ○ 571,901 cases and 2,796 deaths.
				  ○ Average 7-day incidence rate was 26•6 reported infections per 100,000 population (95% CI: 17•8, 38•1).
				  ○ Average test positive ratio was 4•3% (95% CI: 1•6, 10•2)
				  ○ Average testing ratiowas 0•8 tests per 1,000 population (95% CI: <0•1, 3•7)
				  ○ The case fatality rates (CFR) was 0•6% (95% CI: <0•1, 3•7). Among the 2,796 cases who died, 87•3% were ≥ 50 years.
				• The **public health response was successful in the suppression** of COVID-19 transmission or the **first half of 2020**. However, a **state election and outbreaks in institutionalised populations** have been the **catalyst** for more significant **community propagation**.

Evidence on Transmission

Date	Author/s	Title	Journal/ Article Type	Summary
21 Oct 2021	Shuai et al., 2021	Emerging SARS-CoV-2 variants expand species tropism to murines	*Research article - The Lancet*	• The researchers investigated the capacity of wild-type (WT) SARS-CoV-2 and SARS-CoV-2 variants in infecting mice (Mus musculus) and rats (Rattus norvegicus) under in vitro and in vivo settings. • Results reveal that **B.1.1.7 and other N501Y-carrying variants** but not WT SARS-CoV-2 can **infect wild-type mice**. • **High viral genome copies and high infectious virus particle titres** are recovered from the nasal turbinate and lung of **B.1.1.7-inoculated mice** for 4-to-7 days post infection.
21 Oct 2021	Stone et al., 2021	Pyronaridine–artesunate or dihydroartemisinin–piperaquine combined with single low-dose primaquine to prevent Plasmodium falciparum malaria transmission in Ouélessébougou, Mali: a four-arm, single-blind, phase 2/3, randomised trial	*Clinical trial - The Lancet (Microbe)*	• The researchers conducted a **four-arm, single-blind, phase 2/3, randomised trial** at the Ouélessébougou Clinical Research Unit of the Malaria Research and Training Centre of the University of Bamako (Bamako, Mali). • Study participants were aged 5–50 years, with asymptomatic *P falciparum* malaria mono-infection and gametocyte carriage on microscopy, haemoglobin density of 9·5 g/dL or higher, bodyweight less than 80 kg, and no use of antimalarial drugs over the past week. • The p**rimary endpoint was percentage reduction in mosquito infection rate** (percentage of mosquitoes surviving to dissection that were infected with *P falciparum*) at **48 hour after treatment** compared with baseline (before treatment) in all treatment groups. • The **median percentage reduction in mosquito infection rate 48 hour after treatment was 100·0%** (IQR 100·0 to 100·0) for individuals treated with pyronaridine–artesunate plus primaquine (n=18; p<0·0001) and dihydroartemisinin–piperaquine plus primaquine (n=15; p=0·0001). • The study reported **no serious adverse events, and no significant differences between treatment groups** at any point in the frequency of any adverse events (Fisher's exact test p=0·96) or adverse events related to study drugs (p=0·64). • The **data support the use of single low-dose primaquine** as an effective supplement to dihydroartemisinin–piperaquine and pyronaridine–artesunate for blocking P falciparum transmission.

Evidence on Transmission (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
22 Oct 2021	Masche et al., 2021	Genomic epidemiology and the role of international and regional travel in the SARS-CoV-2 epidemic in Zimbabwe: a retrospective study of routinely collected surveillance data	*Research article - The Lancet (Global Health)*	• The researchers performed a retrospective study of nasopharyngeal samples collected from nine (9) laboratories in Zimbabwe between 20 March and 16 October 2020 (n=92 299). • From the collected samples, 8099 were PCR-positive and 328 were available for sequencing, with 156 passing sequence quality control. • **Most cases** were imported from **outside** Zimbabwe. • **Community transmission** was reported **6 days after the onset of the outbreak**. • **Initial public health interventions delayed onset** of SARS-CoV-2 community transmission **after the introduction of the virus from international and regional migration** in Zimbabwe. • Global whole genome sequence data are essential to reveal major routes of spread and guide intervention strategies.

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
20 Oct 2021	Ojoghoro et al., 2021	Steroid hormones in the aquatic environment	*PubMed Review*	• Laboratory ecotoxicology experiments, on fish and amphibians have shown that **some steroid hormones**, both natural and synthetic, can **adversely affect reproduction when present in the water at extremely low concentrations**: even sub-ng/L. • Recent research has demonstrated that **mixtures of different steroid hormones can inhibit reproduction** even when each individual hormone is present at a concentration below which it would not invoke a measurable effect on its own.. • **Further research is required** to identify the main sources of steroid hormones entering the aquatic environment, better describe the complex mixtures of steroid hormones now known to be ubiquitously present, and determine the impacts of environmentally-realistic mixtures of steroid hormones on aquatic vertebrates, especially fish.

Evidence on Drugs (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
21 Oct 2021	Fleseriu, et al.	Neoadjuvant PD-1 blockade with toripalimab, with or without celecoxib, in mismatch repair-deficient or microsatellite instability-high, locally advanced, colorectal cancer (PICC): a single-centre, parallel-group, non-comparative, randomised, phase 2 trial	*Review - The Lancet (Gastroenterology and Hepatology)*	• The **primary endpoint** of the study was the **proportion of patients with pathological complete response**, defined as tumours without any viable tumour cells in the resected primary tumour sample and all sampled regional lymph nodes. • Results showed that **neoadjuvant toripalimab with or without celecoxib could be a potential therapeutic option** for patients with mismatch repair deficient or microsatellite instability-high, locally advanced, colorectal cancer. • This treatment was associated with a **high pathological complete response rate and an acceptable safety profil**e, which did not compromise surgery. • Longer term follow-up is needed to assess effects on survival-related endpoints.

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

Date	Author/s	Title	Journal/ Article Type	Summary
17 Oct 2021	Rahav et al., 2021	BNT162b2 mRNA COVID-19 vaccination in immunocompromised patients: A prospective cohort study	*Clinical trial - The Lancet*	• A prospective cohort study conducted in Sheba Medical Center, Israel, between January and April 2020 (n=1274). There were 1002 immunocompromised patients (ICPs)and 272 immunocompetent healthcare workers (HCWs)patients who received the vaccine. • Antibodies were measured 2-4 weeks after vaccination by SARS-CoV-2 anti–receptor binding domain IgG antibodies (RBD IgG) and pseudo-virus neutralization assays. • There was a **significant correlation** r = 0.74 (95%CI 0.69,0.78) **between RBD-binding IgG and neutralizing antibodies in all groups**. • Multivariate logistic regression analysis showed that **non-reactive response of IgG antibodies was significantly correlated with age > 65 years** (OR 0.41,95%CI 0.30,0.57) and **underlying immunosuppression** (OR 0.02,95%CI 0.01,0.07).

Evidence on Vaccines (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
17 Oct 2021	Rahav et al., 2021	BNT162b2 mRNA COVID-19 vaccination in immunocompromised patients: A prospective cohort study	*Clinical trial - The Lancet*	*Cont.* • The **vaccine was safe** without any episodes of rejection, graft-versus-host disease (GVHD) or allergy. Immunocompetent **HCWs** experienced significantly **more adverse events** than ICPs. • **Antibody response** to the Pfizer-BioNTech vaccine was **highly variable among different ICPs**; thus, individual recommendations should be provided for the different immunosuppression states.
22 Oct 2021	Fadlyana et al., 2021	A phase III, observer-blind, randomized, placebo-controlled study of the efficacy, safety, and immunogenicity of SARS-CoV-2 inactivated vaccine in healthy adults aged 18-59 years: An interim analysis in Indonesia	*Clinical trial - PubMed*	• The researchers conducted a randomized, double-blind, placebo-controlled trial to evaluate the **efficacy, immunogenicity, and safety of an inactivated SARS-CoV-2 vaccine** and its lot-to-lot consistency (n=1620 healthy adults aged 18-59 years old). • The article was based on an interim report completed within three (3) months following the last dose of study vaccine. • Most of the **adverse reactions** were in the **solicited category** and were **mild** in severity. • **Antibody IgG titer** determined by enzyme-linked immunosorbent assay was **97.48% for the seroconversion rate**. • Using incidence rate, the vaccine efficacy is **65.30% against symptomatic COVID-19 at least 14 days** after the second dose, with favorable safety and immunogenicity profiles..

Evidence on Equipment & Devices

Date	Author/s	Title	Journal/ Article Type	Summary
18 Oct 2021	Yang et al., 2021	Morphology accuracy evaluation of direct composite occlusal veneer using two types of modified stamp-technique	Randomized Control Trial - PubMed	• Model scanner was used to get the original data from the standard resin teeth in plastic model. Two (2) types of stamps were made: solid silicon stamp and transparent silicon stamp. • There were **no significant difference in root mean square (RMS) occlusal surface** of solid silicon stamp group (0.136±0.031) mm, transparent silicon group (0.130±0.024) mm, and in control group (0.130±0.009) mm. • Direct occlusal veneer using bulk-filled composite resin made with two (2) types of stamp technique had even more accurate morphology than using general composite resin.

Evidence on Equipment & Devices (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
18 Oct 2021	Huang et al., 2021	Accurate diagnosis and prognosis prediction of gastric cancer using deep learning on digital pathological images: A retrospective multicentre study	Research article - The Lancet	• 2333 hematoxylin and eosin-stained pathological pictures of 1037 GC patients were collected from two (2) cohorts to develop the algorithms, Renmin Hospital of Wuhan University (RHWU) and the Cancer Genome Atlas (TCGA). • The discriminatory power of GastroMIL achieved **accuracy 0.920** in the external validation set, superior to that of the junior pathologist and comparable to that of expert pathologists. • In the prognostic model, **C-indices for survival prediction of internal and external validation sets were 0.671 and 0.657**, respectively.

Evidence on Medical & Surgical Procedures

Date	Author/s	Title	Journal/ Article Type	Summary
18 Oct 2021	Ma et al., 2021	Laparoscopic nerve-sparing radical hysterectomy for the treatment of cervical cancer: a meta-analysis of randomized controlled trials	Meta-analysis - PubMeb	• 13 randomized control trials involving a total of 1002 cervical cancer patients were included in the review. • Laparoscopic nerve-sparing radical hysterectomy (LNSRH) **significantly results in earlier bladder and bowel function after surgery.** Limited by sample size, **LNSRH should be considered with caution** in the future.

Evidence on Traditional Medicine

Date	Author/s	Title	Journal/ Article Type	Summary
18 Oct 2021	Alshami et al., 2021	Effect of manual therapy with exercise in patients with chronic cervical radiculopathy: a randomized clinical trial	Randomized Control Trial - PubMed	• 28 participants with chronic cervical radiculopathy were randomly allocated to (1) an experimental group [cervical vertebral mobilization technique and exercise] or (2) a comparison group [minimal superficial circular pressure on the skin and exercise].

Evidence on Traditional Medicine (cont.)

Date	Author/s	Title	Journal/ Article Type	Summary
18 Oct 2021	Alshami et al., 2021	Effect of manual therapy with exercise in patients with chronic cervical radiculopathy: a randomized clinical trial	Randomized Control Trial - PubMed	*Cont.* • The experimental group showed improvements in: ○ Baseline to session 6 in NPRS, Numeric Pain Rating Scale (NPRS), Neck Disability Index (NDI) and active cervical ROM in extension, rotation and lateral flexion to the affected side. ○ Pressure pain threshold (PPT) at the neck and C7 level at the hand. • There were no changes in the heat and cold pain threshold (HPT/CPT) at any tested area.

Evidence on Preventive & Promotive Health

Evidence on Screening

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Evidence on Personal Measures

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Evidence on Community Measures

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