Weekly Evidence Report

Health Technology Assessment Philippines

27 August - 2 September 2022

Overview

The following report presents summaries of evidence the Department of Health (DOH) - Health Technology Assessment (HTA) Division reviewed for the period of 27 August - 2 September 2022. The HTA Division reviewed a total of 10 studies for the said period.

Evidence includes 1 study on Epidemiology; 5 studies on Vaccines; 2 studies on Drugs; 0 studies on Transmission; 0 studies on Equipment and Devices; 0 studies on Medical and Surgical Procedures; 0 studies on Traditional Medicine; 2 studies on Preventive & Promotive Health; and 0 studies on Other Health Technologies.

Sections

Evidence on Epidemiology

Local COVID-19 Case Tracker:

https://doh.gov.ph/2019-nCoV?gclid=CjwKCAjwjtOTBhAvEiwASG4bCOmLzFMQIjh8DX_VVSGA-HmO0Pt5_CscykID7xZv4zqlXG5vm9PM2xoC27QQAvD_BwE

Date	Author/s	Title	Journal/ Article Type	Summary
31 August 2022	WHO Global	Weekly epidemiological update on COVID-19 - 31 August 2022	*WHO Global Situation Report*	• Globally, the number of new weekly cases decreased by 16% during the week of 22 to 28 August 2022, as compared to the previous week, with over 4.5 million new cases reported • The number of new weekly deaths decreased by 13%, as compared to the previous week, with over 13 500 fatalities reported. As of 28 August 2022, over 598 million confirmed cases and over 6.4 million deaths have been reported globally. • Current trends in reported COVID-19 cases and deaths should be interpreted with caution as several countries have been progressively changing COVID-19 testing strategies, resulting in lower overall numbers of tests performed and consequently lower numbers of cases detected. Additionally, data from countries are continuously updated by WHO to incorporate changes in reported COVID-19 cases and deaths made by countries retrospectively.

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
02 Sept. 2022	Ishimaru et.al	Novel monoclonal antibodies showing broad neutralizing activity for SARS-CoV-2 variants including Omicrons BA.5 and BA.2.75	*bioRvix/ Observational Study*	• The study found out that Novel neutralizing monoclonal antibodies against SARS-CoV-2 variants (including Omicron) from individuals received two doses of mRNA vaccination after they had been infected with wildtype. It was named MO1, MO2 and MO3. MO1 shows high neutralizing activity against authentic variants: D614G, Delta, BA.1, BA.1.1, BA.2, and BA.2.75 and BA.5. The findings confirm that the wildtype-derived vaccination can induce neutralizing antibodies that recognize the epitopes conserved among the SARS-CoV-2 variants (including BA.5 and BA.2.75). The monoclonal antibodies obtained herein could serve as novel prophylaxis and therapeutics against not only current SARS-CoV-2 viruses but also future variants that may arise.

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

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Evidence on Vaccines *(cont.)*

Date	Author/s	Title	Journal/ Article Type	Summary
1 Sept. 2022	Zhu et al.	Real-World COVID-19 Vaccine Protection Rates against Infection in the Delta and Omicron Eras	*medRvix/ Observational Study*	• The real-world protection rates of vaccination (VPRs) against the SARS-Cov-2 infection are critical in formulating future vaccination strategies against the virus. Based on a varying coefficient stochastic epidemic model, we obtain seven countries' real-world VPRs using daily epidemiological and vaccination data, and find that the VPRs improved with more vaccine doses. • Scenario analyses show that the existing vaccination strategies have significantly delayed and reduced the timing and the magnitude of the infection peaks, respectively, and doubling the existing booster coverage would lead to 29% fewer confirmed cases and 17% fewer deaths in the seven countries compared to the outcomes at the existing booster taking rates. These call for higher full vaccine and booster coverage for all countries.
31 August 2022	Fraiman et.al	Serious adverse events of special interest following mRNA COVID-19 vaccination in randomized trials in adults	*Vaccine/ Secondary analysis*	• Pfizer and Moderna mRNA COVID-19 vaccines were associated with an excess risk of serious adverse events of special interest of 10.1 and 15.1 per 10,000 vaccinated over placebo baselines of 17.6 and 42.2 (95 % CI −0.4 to 20.6 and −3.6 to 33.8), respectively. Combined, the mRNA vaccines were associated with an excess risk of serious adverse events of special interest of 12.5 per 10,000 vaccinated (95 % CI 2.1 to 22.9); risk ratio 1.43 (95 % CI 1.07 to 1.92). The Pfizer trial exhibited a 36 % higher risk of serious adverse events in the vaccine group; risk difference 18.0 per 10,000 vaccinated (95 % CI 1.2 to 34.9); risk ratio 1.36 (95 % CI 1.02 to 1.83). The Moderna trial exhibited a 6 % higher risk of serious adverse events in the vaccine group: risk difference 7.1 per 10,000 (95 % CI −23.2 to 37.4); risk ratio 1.06 (95 % CI 0.84 to 1.33). Combined, there was a 16 % higher risk of serious adverse events in mRNA vaccine recipients: risk difference 13.2 (95 % CI −3.2 to 29.6); risk ratio 1.16 (95 % CI 0.97 to 1.39). • The excess risk of serious adverse events found in our study points to the need for formal harm-benefit analyses, particularly those that are stratified according to risk of serious COVID-19 outcomes. These analyses will require public release of participant level datasets.

Evidence on Vaccines *(cont.)*

Date	Author/s	Title	Journal/ Article Type	Summary
30 August 2022	Bossi et. al	Humoral and cellular immune response in patients with hematological disorders after two doses of BNT162b2 mRNA COVID-19 vaccine: A single-center prospective observational study (NCT05074706)	*British Society for Haematology/ single-center prospective observational study*	• Patients treated with anti-CD20 showed a significantly lower probability of immunization compared to all other treatments (21.4%, p < 0.0001). Among 69 patients who failed seroconversion, 15 patients (22.7%) showed a positive T-cell response. Patients previously treated with anti-CD20 were 2.4 times more likely to test positive for T-cell responses (p = 0.014). Within a follow-up of 9 months from the second COVID-19 vaccination, symptomatic SARS-CoV-2 infections were reported by 20 patients (5.3%) and four of them required hospitalization. Successful serological or T-cell-mediated immunization conferred protection from symptomatic COVID-19. Patients treated with anti-CD20 who were not seroconverted after vaccination might still be protected from COVID-19 due to the T-cell immune response.
30 August 2022	Fusco et. al	Impact of COVID-19 and Effects of Vaccination with BNT162b2 on Patient-Reported Health-Related Quality of Life, Symptoms, and Work Productivity Among US Adult Outpatients with SARS-CoV-2	*MedRxiv/ prospective, observational cohort study*	• Although there is extensive literature on the clinical benefits of COVID-19 vaccination, data on humanistic effects are limited. This study evaluated the impact of SARS- CoV-2 infection on symptoms, Health Related Quality of Life (HRQoL) and Work Productivity and Impairment (WPAI) prior to and one month following infection, and compared results between individuals vaccinated with BNT162b2 and those unvaccinated. • COVID-19 negatively impacted HRQoL and work productivity among mildly symptomatic outpatients. Compared with unvaccinated, those vaccinated with BNT162b2 were less impacted by COVID-19 infection and recovered faster.

Evidence on Drugs

Date	Author/s	Title	Journal/ Article Type	Summary
30 August 2022	Chan et al.	Metformin is Associated with Reduced COVID-19 Severity in Patients with Prediabetes	*MedRxiv/ prospective, observational cohort study*	• With the continuing COVID-19 pandemic, identifying medications that improve COVID-19 outcomes is crucial. Studies suggest that use of metformin, an oral antihyperglycemic, is associated with reduced COVID-19 severity in individuals with diabetes compared to other antihyperglycemic medications. • In the prediabetes cohort, metformin use was associated with a lower rate of COVID-19 with severity of mild ED or worse (OR: 0.630, 95% CI 0.450 - 0.882, $p < 0.05$) and a lower rate of COVID-19 with severity of moderate or worse (OR: 0.490, 95% CI 0.336 - 0.715, $p < 0.001$). In patients with PCOS, we found no significant association between metformin use and COVID-19 severity, although the number of patients was relatively small. • Metformin was associated with less severe COVID-19 in patients with prediabetes, as seen in previous studies of patients with diabetes. This is an important finding, since prediabetes affects between 19 and 38% of the US population, and COVID-19 is an ongoing public health emergency. Further observational and prospective studies will clarify the relationship between metformin and COVID-19 severity in patients with prediabetes, and whether metformin usage may reduce COVID-19 severity.
01 Sept. 2022	Noske et.al	Structural basis of nirmatrelvir and ensitrelvir resistance profiles against SARS-CoV-2 Main Protease naturally occurring polymorphisms	bioRvix/ In Vitro drug discovery	• The combined results allow us to conclude that these two distinct inhibitors have a different resistance profile against a panel of mutants, which can be explained by the distinct binding modes to Mpro. These results are not only important in the monitoring of emergence of resistant strains of SARS-CoV-2, but also for planning a more suitable treatment in the event of one of these polymorphisms became a strain of concern. Moreover, the depicted complexes between inhibitors and mutants help us to understand the structural features involved in resistance, which should assist the development of the next generation of Mpro inhibitors.

Evidence on Preventive & Promotive Health

Evidence on Community Measures

Date	Author/s	Title	Journal/ Article Type	Summary
31 August 2022	Bath, et.al.	Prophylactic Treatment of COVID-19 in Care Homes Trial (PROTECT-CH)	medRvix/ Open label Clinical Trial	• Care homes were to be allocated at random by computer to 42 days of antiviral agent plus standard care versus standard of care and followed for 60 days after randomisation. The primary four-level ordered categorical outcome with participants classified according to the most serious of all-cause mortality, all-cause hospitalisation, SARS-CoV-2 infection and no infection. The role of post exposure prophylaxis of COVID-19 in care home residents was not tested because of changes in COVID-19 incidence, prevalence and virulence as a consequence of the vaccination programme that rendered the study unfeasible. Significant progress was made in describing and developing the infrastructure necessary for a large scale Clinical Trial of Investigational Medicinal Products in care homes in all four UK nations.

Evidence on Screening

Date	Author/s	Title	Journal/ Article Type	Summary
02 Sept. 2022	Redmond et al.	Deep immune profiling uncovers novel associations with clinical phenotypes of Multisystem Inflammatory Syndrome in Children (MIS-C)	*MedRXiv/ Prospective cohort study*	• Multisystem Inflammatory Syndrome in Children (MIS-C) is a systemic inflammatory condition that follows SARS-CoV2 infection or exposure in children. Clinical presentations are highly variable and include fever, gastrointestinal (GI) disease, shock, and Kawasaki Disease-like illness (MIS-C/KD). Compared to patients with acute COVID, patients with MIS-C have a distinct immune signature and expansion of TRVB11 expressing T cells. By identifying novel immunologic associations with the different clinical phenotypes of MIS-C, this study provides insights into the clinical heterogeneity of MIS-C. These unique immunophenotypic associations could provide biomarkers to identify patients at risk for severe complications of MIS-C, including shock and MIS-C/KD.

Evidence on Equipment and Devices

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 Medical and Surgical Procedures

Date	Author/s	Title	Journal/ Article Type	Summary
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Evidence on Other Health Technologies

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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