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SYNTHESIS

COVID-19 Omicron Variant of Concern and Communicability – What We Know So Far

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Introduction

Public Health Ontario (PHO) is actively monitoring, reviewing and assessing relevant information related to Coronavirus Disease 2019 (COVID-19). "What We Know So Far" documents provide a rapid review of the evidence related to a specific aspect or emerging issue related to COVID-19.

Updates to Latest Version

This document replaces the previous version of PHO's *COVID-19 Omicron Variant of Concern and Communicability… What We Know So Far* (January 17, 2022) and presents results of an updated rapid review.[1]

This knowledge product summarizes studies on the communicability of Omicron variant of concern (VOC) severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Please see PHO's *Factors Affecting COVID-19 Period of Communicability – What We Know So Far* for potential individual-level factors affecting the period of communicability.[2]

Key Findings

- As of January 2023, the Omicron VOC is the dominant SARS-CoV-2 lineage in many jurisdictions, including Ontario.
- Studies found that Omicron BA.1 has a high growth rate, attack rate (>50% in two outbreaks), secondary attack rate (range 39-65%), and basic reproduction number (range 2.4 to 6.7) when compared to other lineages.
- Most studies showed no significant difference in viral load, viral clearance and duration of viral shedding between Omicron BA.1 and other VOCs. The length of the BA.1 period of communicability can range from several days before symptom onset to upwards of 14 days post-symptom onset (PSO). BA.1 viral loads peak within the first 5 days of symptoms and then gradually decline with only a small proportion of viral cultures being positive beyond 10 days PSO.
- Most studies found that the length of the period of communicability for Omicron BA.1 (3 – 5 days PSO) was shorter than for the wild-type strain (3 – 8 days PSO).
- The range of mean incubation periods for Omicron BA.1 (2.5 – 4.6 days) reported was shorter than that of other VOCs (3.3 – 6.5 days). The range in incubation periods reported for BA.2 was 4.4 – 4.6 days.

- The range of mean serial intervals for Omicron BA.1 (2.4 – 4.8 days) was shorter compared to other VOCs (4.1 – 5.4 days). One study reported the serial interval of Omicron BA.2 was 3.4 days.
- There was no evidence reported for the period of communicability, incubation period or serial interval of other Omicron sub-lineages.
- The current public health recommendation for symptomatic individuals is to self-isolate until symptoms are improving for more than 24 hours. This strategy helps to prevent SARS-CoV-2 transmission during a case's peak period of infectiousness (i.e. initial days of symptoms). Given those with COVID-19 may remain infectious until 10 days PSO, it is recommend that they utilize other risk mitigation measures after they end their self-isolation (e.g. wear a well-fitted mask in all public setting, not visit anyone who is immunocompromised or at higher risk of illness, and avoid non-essential visits to highest risk settings such as hospitals and long-term care homes) to prevent or minimize the risk of SARS-CoV-2 transmission to others.[3]

Background

The Omicron variant was designated a SARS-CoV-2 VOC by the World Health Organization (WHO) on November 26, 2021.[4] Since then, multiple PANGO sub-lineages associated with the Omicron variant have emerged, and the main BA.1, BA.2, BA.3, BA.4, and BA.5 sub-lineages have their own sub-lineages (e.g., BA.1.1, BA.2.12, BA.2.12.1, BA.2.3, BA. 2.20, BA.2.9, BA.5.1, BQ.1, XBB).[5,6] Whole genome sequencing completed by PHO as of January 4, 2023, and partner laboratories in the Ontario COVID-19 Genomics Network as of January 3, 2023, show that in recent weeks (December 18 to 24, 2022) BQ.1.1 was the most prevalent lineage (31.7%) in Ontario, followed by BQ.1 (10.6%) and BF.7 (3.8%).[7] The proportion of XBB.1 (including XBB.1.5) cases in Ontario remained stable at 2.2% (68 cases from December 11 to 17, 2022) and 2.0% (54 cases from December 18 to 24, 2022).[6]

Considering the possible changes to transmissibility of emerging sub-lineages compared to previous VOCs, it is important to monitor the potential impact they might have in Ontario's context. Ongoing risk assessment and infection control strategies are useful in mitigating potential increases in transmission.

The objective of this synthesis is to summarize evidence on characteristics relevant to the communicability of Omicron, specifically: (1) Transmissibility; (2) Period of communicability; (3) Incubation period; and (4) Serial interval.

Methods

In considering feasibility, scope, and a need for responsiveness, we undertook a rapid review to determine communicability characteristics of the Omicron variant. A rapid review is a knowledge synthesis where certain steps of the systematic review process are truncated in order to be timely (e.g., quality assessment).[8]

To identify relevant literature on this topic published since the previous version of this document was developed, PHO Library services updated and peer-reviewed a literature search strategy on COVID-19 communicability. On October 27, 2022, PHO Library Services executed this updated literature search in MEDLINE (Ovid platform) Embase (Ovid platform), Scopus (Elsevier platform) and preprints (National Institutes of Health COVID-19 Portfolio platform). Additional database searches on specific aspects of communicability (e.g., incubation period, attack rate, basic reproduction number) were run in November and December of 2022 to capture recently published articles on subtopics of interest. Search strategies are available upon request. We restricted the search to articles published after December 2021, and excluded any duplicates that were included in the previous iteration of this document. English-language

peer-reviewed and non-peer-reviewed records that described Omicron communicability were selected for inclusion in this synthesis. Additional articles and grey literature identified for related PHO Scientific and Technical Requests work with relevance to this topic were also included.

Prior to publishing, PHO subject matter experts review all *What We Know So Far* documents. As the scientific evidence is expanding rapidly, the information provided in this document is only current as of the date of respective literature searches.

Topics out of scope for this document include SARS-CoV-2 routes of transmission, host factors (e.g., immunosuppression, comorbidities), environmental factors (e.g., ventilation, cleaning, stressor), vaccine effectiveness and other public health and personal mitigation measures (e.g., IPAC, social distancing, test-based clearance) potentially modifying communicability dynamics. We address these and other related topics in other PHO products, which can be accessed at the Coronavirus Disease 2019 (COVID-19) webpage.[9]

Findings

Transmissibility

Transmissibility refers to how easily an infectious virus spreads from an infected individual to susceptible individuals. Transmissibility is impacted by multiple factors including viral characteristics, biological and behavioural characteristics (e.g., contact patterns) of infected and susceptible individuals, population-level factors (e.g., widespread public health measures, immunity) and environmental conditions. Indicators of transmissibility include the growth rate, doubling time, attack rate, secondary attack rate (SAR), and effective reproduction number (R_e).

Scientific and experiential global evidence has found that Omicron's transmissibility is substantially higher than that of preceding variants. For instance, Smallman-Raynor et al., used spatial epidemiological analysis to assess the spatial growth rate of multiple lineages of SARS-CoV-2 in England using genomic surveillance records from the COVID-19 Genomics UK Consortium.[10] They found that Omicron BA.1 had the fastest average rate of spatial growth, with a growth rate 2.81 times faster than Delta and 3.76 times faster than Alpha. In a study looking at doubling time during the emergence of the Omicron variant, Smith et al., found that the doubling time of Omicron was 4.28 days, which was nearly half that of Alpha (9.54 days).[11]

High rates of community and/or household Omicron transmission have been reported, including evidence of higher attack rate and R_e compared to previous variants. Seven records focused on the R_e of Omicron and were included in this synthesis. All seven studies focused on Omicron BA.1, and the reported estimated R_e ranged from 2.43 to 6.70.[12-18] The majority of studies reported that the R_e of Omicron is higher than that of the wild-type strain and other VOCs. [12-15,17,18] Du et al., conducted a systematic review on the R_e of Omicron and its associated sub-strains (BA.1, BA.2, BA.1.1), and provided estimates based on six studies identified between January 1, 2020 and March 6, 2022.[12] In this study, the authors estimated that the R_e of Omicron ranged from 2.43 to 5.11, with a pooled estimate of 4.20 (95% Confidence Interval (CI): 2.05, 6.35), meaning that the R_e for Omicron is 2.71 times (95% CI: 1.86, 3.56) that of Delta. Likewise, Yu et al., used mathematical modelling to estimate the time-varying transmissibility of SARS-CoV-2 and found that the relative transmissibility of the Beta, Delta, and Omicron variants was approximately 73%, 87%, and 276% higher than their preceding variants, with the transmissibility of Omicron being substantially higher than other VOCs.[13] In a transmission model for SARS-CoV-2 variants using publicly available data, Xue et al., estimated that the initial transmission rate

of Omicron in Canada was 15.4 times higher than that of Delta and 3.4 times higher than the average of all other variants.[14] The authors also found that the average R_e of Omicron in Canada was 5.44, which was 17.5 times higher than that of Delta. Niu et al., compared outbreaks caused by SARS-CoV-2 VOCs in mainland China and calculated the R_e of SARS-CoV-2 during three time periods (pre-Delta, Delta, Omicron) using the susceptible-exposed-recovered (SEIR) propagation dynamics model. They found that the median of the maximum R_e values of eight outbreaks associated with Omicron (median: 6.7; range: 5.3-8.0) was significantly higher than the maximum R_e values of nine pre-Delta strain outbreaks (median: 3.5; range: 2.9-3.8) and 13 Delta outbreaks (median: 5.5; range: 4.2-6.8).[15] Other studies have also reported that the R_e of Omicron is significantly higher (3.15-4.2 times) than Delta.[17,18]

One study estimated the attack rates of the Omicron variant during two outbreaks in Australia, both of which consisted of a highly vaccinated populations (>95% having at least 2 vaccine doses).[19] The attack rates were 295/535 (55.1%) for one outbreak and 102/189 (54.0%) for the second outbreak.

Four studies reported the SAR of Omicron BA.1 ranged from 39-65%, and most noted that this was higher than the SAR of previous VOCs.[20-23] Chen et al., conducted a systematic review and meta-analysis to explore household transmissibility of SARS-CoV-2, with a focus on children.[20] The household SAR of the Omicron variant was reported to be significantly higher (56%; 95% CI: 51-61; p<0.01) than that of the wild-type strain (20%) and other VOCs (Alpha: 42%; Delta 35%). To note, no significant difference in the SAR of Omicron was observed between child and adult contacts (risk ratio (RR): 1.09; 95% CI: 0.88-1.35). Akaishi et al. looked at the secondary transmission risk of COVID-19 among young children aged 0-3 years in Japan.[21] They found the secondary transmission rate after close contact with Omicron (39.2%) was significantly higher than that with Delta (17.4%) and the wild-type strain (4.5%) (p<0.0001). Data looking at adult populations have shown similar findings. For example, Del Águila-Mejía et al., reported that the SAR was 39% (95% CI: 36.5–42.2) for Omicron variant cases in Cantabria, Spain, which was significantly higher than the SAR among Delta cases 26% (25.3–27.4; p<0.0001).[22]

One study described the characteristics and transmission dynamics of Omicron BA.2. Chen et al., examined three phases of the Omicron wave in Shanghai, China: Phase 1 (January 1-February 28/2022); Phase 2 (March 1-31/2022), and Phase 3 (April 1-May 31/2022).[24] During phase 3, the majority of positive samples were confirmed to be BA.2/BA.2.2 sub-lineages. They found the total incidence of reported infections per 1,000 individuals in Phase 1, 2 and 3, increased from 0.02, to 2.9, to 21.9 infections per 1,000 individuals, respectively.

Period of Communicability

The period of communicability is the duration of time when an individual infected with SARS-CoV-2 may transmit the virus to others. For this rapid review, we infer the period of communicability of the Omicron variant from studies examining viral testing (e.g. live virus detection, viral RNA shedding) and length of infectivity (e.g., contact tracing studies, modelling). Live, replication-competent virus refers to the detection of a cytopathic effect or the isolation of live virus from cell cultures from a clinical specimen of an individual infected with SARS-CoV-2. The detection of live virus is an indication that the individual is infectious; however, the degree of infectiousness is dose-dependent. Viral RNA shedding refers to the detection of targeted RNA segments through Polymerase Chain Reaction (PCR), which includes both infectious, replication-competent virus and non-infectious, residual or fragmented viral particles. Epidemiological and modelling studies can be used to estimate the length of infectivity, including presymptomatic transmission and the period when transmission risk is highest.

Ten studies focusing on the period of communicability were included in this synthesis, with the majority of studies examining BA.1. Overall, most studies showed no significant difference in viral load, viral

clearance and duration of viral shedding between the Omicron variant and other VOCs. A few studies reported earlier viral clearance in Omicron cases compared to non-Omicron cases. The range in period of communicability of BA.1 varied between included studies from several days before symptom onset to upwards of 14 days PSO. BA.1 viral loads peak within the first 5 days of symptoms and then gradually decline with only a small proportion of viral cultures being positive beyond 10 days PSO.

Del Águila-Mejía et al., examined the transmission period for Omicron BA.1 infection defined as the distribution of days from index case symptom onset date to date of last contact with close contacts who became secondary cases. They found that the transmission period for the Omicron variant ranged from 5 days before symptom onset to 6 days PSO (mean 0.5 days PSO, SD 2.3 days). Although the mean differences between Omicron and Delta transmission periods were significant (−0.3 days for Omicron; SD −0.56 to −0.02), the inter-quartile ranges remained equal. Transmission for Omicron beyond 5 days of symptom onset was rare at 2% of secondary cases (8/356).[22]

Keske et al., examined the duration of viral shedding in Omicron BA.1 cases among healthcare workers (HCWs). Viral culture positivity rates on days 5, 7, 10, and 14 were 83% (44/53), 52% (26/50), 13.5% (7/52) and 8% (4/50), respectively, demonstrating an overall decline over time.[25]

Luna-Muschi et al. (preprint), found the highest viral RNA loads amongst HCWs infected with Omicron BA.1 were observed at day 5 PSO, with a median cycle time (Ct) of 17 (interquartile range (IQR): 18-22), and decreased progressively over time until day 14.[26] They also used respiratory samples collected at various time points (day 5, 7, 10 and 14 PSO) to infect Vero cells and evaluate viral growth, and found that viral growth was observed in 46% and 20% of respiratory samples at day 5 and 7, respectively, while all samples were negative at day 10 and 14.

Chen et al., was the only modelling study and examined the infectious process and disease progression of SARS-CoV-2 and its variants from the presymptomatic phase to symptomatic phase.[27] They used a dataset from Taiwan covering data from March 2020-January 2022, to develop a four-state stochastic model to estimate the following parameters: the presymptomatic incidence rate, the median of presymptomatic transmission time (MPTT) to symptomatic state, and the incidence (proportion) of asymptomatic cases. The presymptomatic incidence rate was the highest for Omicron compared to other VOCs, with the shortest MPTT (2.03 days). The proportion of asymptomatic cases after the emergence of the Omicron variant was 59.2%, and the presymptomatic incidence and asymptomatic incidence rates were highest during the Omicron period, at 3.17/1000 and 4.60/1000, respectively. In comparison, the proportion of asymptomatic cases during the period of wild-type strain dominance was 29.0%, with a presymptomatic incidence rate of 0.40/1000 and asymptomatic incidence rate of 0.16/1000.

Raymenants et al., compared viral shedding in the upper and lower respiratory tracts amongst Alpha- (n=11) and Omicron BA.1-infected (n=8) patients and found no significant difference between nasopharyngeal (p=0.19) or exhaled breath (p=0.09) cohorts.[28]

Yuasa et al., examined the viral copy number in nasopharyngeal swab samples and found no significant difference between the copy number of Delta (median: 1.5×10^5 copies/µl, n=174) and Omicron (median: 1.2×10^5 copies/µl, n=328) cases (p=0.052).[29] Furthermore, among the Omicron cases, there was no significant difference between the copy numbers of the BA.1 (median 1.1×10^5 copies/µl, n=275) and BA.2 (median 2.3×10^5 copies/µl, n=53) cases (p=0.33).

Boucau et al., examined viral load, sequencing, and viral culture data from newly diagnosed outpatients (Delta and Omicron BA.1 cases). They found that the number of days from an initial positive PCR assay

to a negative PCR assay and the number of days from an initial positive PCR assay to culture conversion were similar between the two groups.[30] With regards to the positive PCR, the authors note that the median time from the initial positive PCR assay to culture conversion was 4 days (IQR: 3-5) in the Delta group and 5 days (IQR: 3-9) in the Omicron group. The median time from symptom onset or the initial positive PCR assay, whichever was earlier, to culture conversion was 6 days (IQR: 4-7) in the Delta group and 8 days (IQR: 5-10) in the Omicron group.

van der Veer et al. (preprint), was the only study that reported significantly higher viral loads in cases due to Omicron. They found that in a cohort of HCWs in the Netherlands, Delta had, on average, the lowest viral load in the first 10 days of infection, BA.1 had a slightly higher average load (approximately 2-fold), and BA.2 had the highest average load of approximately 7-fold and 3-fold compared to Delta and BA.1, respectively.[31] For example, BA.2 had the highest viral load on day 5 (5.7 $\log_{10}$ copies/mL, compared to 4.3 $\log_{10}$ copies/mL for Delta and 4.8 $\log_{10}$ copies/mL for BA.1) and day 7 (4.4 $\log_{10}$ copies/mL, compared to 3.3 $\log_{10}$ copies/mL for Delta and 3.8 $\log_{10}$ copies/mL for BA.1).

Saade et al., investigated the viral load dynamics and viral culture status of fully vaccinated HCWs (n=44) infected with the Omicron BA.1 variant and unvaccinated HCWs (n=38) infected with the wild-type strain of SARS-CoV-2 in France.[32] They found that two weeks after diagnosis, a greater proportion of HCWs infected with the wild-type strain (78.9%) than with BA.1 (44.7%; p=0.02) were still positive by RT-qPCR. Additionally, a decrease of 0.42 $\log_{10}$ cp/10^6 cells in viral load was noted in HCWs infected with Omicron for each additional day PSO, while a decrease of 0.17 $\log_{10}$ cp/10_6 cells was noted for HCWs infected with the wild-type strain (p<0.001).

Li et al., compared the nucleic acid negativization (NAN) periods between Omicron BA.2-infected patients (n=3,265) and Delta-infected patients (n=226).[33] They collected nasopharyngeal swabs every day from the 7th day of the disease course (i.e. date of symptom onset or the date of a positive SARS-CoV-2 test) to the recovery of the patient when two consecutive negative nucleic acid swab tests were obtained at an interval of more than 24 hours. They found that that the Omicron group reported a significantly shorter NAN time when compared with the Delta group (15 (12, 19) vs. 16 (12, 22); p<0.05). They also noted that the NAN time in the Omicron group was negatively correlated with vaccination, which was different from the Delta group.

Incubation Period and Serial Interval

The incubation period is the time from exposure to an infectious agent (i.e., SARS-CoV-2) to when an individual develops symptoms. The serial interval is the time from symptom-onset in the index case to symptom-onset in the secondary case(s) (infector-infectee pairs). Two systematic reviews and ten primary studies focused on the incubation period and/or serial interval of Omicron were included in this synthesis. The reported estimated mean incubation period of Omicron BA.1 ranged between 2.50-4.58 days, and the reported estimated mean serial interval ranged between 2.38-4.80 days.[22,23,34-41] The estimated mean incubation period of Omicron BA.2 was reported by two studies and ranged between 4.4-4.6 days, and one study reported the serial interval of Omicron BA.2 was 3.4 days.[41-43] Most studies reported that the incubation period and serial interval were shorter for Omicron compared to that of the wild-type strain and other VOCs.

Two systematic reviews found the incubation period for Omicron was shorter than other VOCs. Du et al., found the incubation period of Omicron was estimated to be 3.6 days (95% CI: 2.3, 4.9), which was shorter than the wild-type strain (6.3 days; 95% CI: 1.8, 11.9) and the Delta variant (4.8 days; 95% CI: 3.9, 5.6).[35] Wu et al., reported that the incubation period in cases infected with the Omicron variant was shorter compared to the other variants examined: the mean incubation period was 5.00 days (95% CI:

4.94-5.06 days) for cases caused by Alpha, 4.50 days (95% CI: 1.83-7.17 days) for Beta, 4.41 days (95% CI: 3.76-5.05 days) for Delta, and 3.42 days (95% CI: 2.88-3.96 days) for Omicron.[36]

Most primary studies reported a shorter incubation period and/or serial interval for Omicron compared to other VOCs. Backer et al., examined publicly available data in the Netherlands and found that the mean incubation period was 3.2 days (standard deviation (SD): 2.2) for cases caused by Omicron (n=258), compared to 4.4 days (SD: 2.5) for cases caused by Delta (n=255). They also found the mean serial interval for within-household pairs was significantly shorter (p=0.0026) for Omicron (3.5 days, SD: 2.4) compared to Delta (4.1 days, SD: 2.8) for Delta.[37] In a study looking at BA.1 cases in South Korea, Liu et al., reported the estimated mean incubation period in cases infected with Omicron (n=22) was 3.5 days (95% CI: 2.5, 3.8), which was shorter than in the 64 patients believed to have been infected with Delta (6.5 days; 95% CI: 5.3, 7.7).[38] Tanaka et al., reported the observed incubation period in cases infected with Omicron (n=77) was 3.03 ± 1.33 days (mean ± SD), which was significantly shorter than in the 51 patients infected with Alpha (4.94 ± 2.19 days, p<0.001).[39] Manica et al., used a Bayesian inference model to estimate the serial interval and the contribution of presymptomatic transmission for the Omicron BA.1 variant using data collected from Omicron infections in Italy (n=23,122).[44] The household serial interval was 2.38 days (95% Credible Interval: 2.30-2.47), with about 51% (95% CrI: 45-56%) of infections caused by symptomatic individuals being generated before symptom onset.

While most studies reported shorter incubation periods for Omicron compared to other VOCs, two studies found no significant difference. Del Águila-Mejía et al., examined data from symptomatic index cases in Spain and found there was no significant difference in the incubation period of Omicron BA.1 (622 cases) compared to Delta (1708 cases): 3.1 days (SD: 2.6) for Omicron versus 3.3 days (SD: 2.7) for Delta (p=0.29).[22] They found that the mean serial interval was significantly shorter for Omicron (4.8 versus 5.4 days, SD: −0.6 to −0.15; p=0.008). Park et al. (preprint), examined the incubation periods of Omicron BA.1 and Delta during the same time period in Netherlands and reported similar estimated mean incubation periods for both variants: mean of 4.1 days (95% CI: 3.8-4.4) for Delta and 4.2 days (95% CI: 3.6-4.9) for Omicron.[40]

Three studies provided data on the incubation period and/or serial interval of the BA.2 sub-lineage. Mefsin et al., reported that the estimated the mean (±SD) incubation period of BA.2 was 4.42 (±1.42) days.[41] Similarly, Wei et al. (preprint), collected data from 323 pediatric cases and their 951 household members during an Omicron outbreak in April 2022, when BA.2 appeared to be the dominant Omicron sub-lineage in Shanghai, and reported the estimated mean incubation period of BA.2 was 4.6 days (median: 4.4; IQR: 3.1-6.0).[42] An der Heiden et al., conducted a study in Germany and found that the serial interval of BA.2 was 3.39 days (95% CI: 3.30-3.49), which was similar to that of BA.1 (3.88 days; 95% CI: 3.79-3.97).[43]

Limitations

Omicron continues to be the dominant variant globally and available literature on the variant's communicability is limited. Common challenges for observational studies include relatively small study samples, and specific set of variants while more transmissible variants continue to emerge. In addition, as observational studies examine a single attribute, it is impossible to compare these attributes' contribution to the phenomenon of virus transmission as a whole. Difficulty accounting for various factors affecting communicability (e.g., immune status), potential sources of infection aside from the identified index case, and accounting for asymptomatic cases are other potential challenges.

There are increasing challenges for studies that obtain surveillance data from public health services. Many jurisdictions have reduced routine testing and testing restrictions may impact perception of underlying transmission.

Implications

Omicron is the current dominant VOC in Ontario and is more transmissible than other lineages with a higher growth rate, higher attack rate and a higher R_e. Included studies found no significant difference in viral load, viral clearance and duration of viral shedding between Omicron and other VOCs. There was a wide range in the length of the BA.1 period of communicability reported among included studies; however, most individuals appear to experience a peak in viral load by Day 5 PSO with few reporting positive cultures beyond Day 10 PSO. The current landscape in Ontario has seen many public health measures removed which fosters transmission of the highly infectious Omicron variant. Current public health case management recommendations are for symptomatic individuals to isolate until their symptoms are improving. This strategy likely helps to prevent transmission during peak infectiousness time periods (i.e. initial days of symptoms). Given there is potential for those with COVID-19 to remain infectious to others until Day 10 PSO, individuals should adhere to risk mitigation strategies including wearing a well-fitted mask in public settings, not visiting anyone who is immunocompromised or at higher risk of illness, and avoiding non-essential visits to highest risk settings such as hospitals and long-term care homes).[3]

As Ontario continues to assess and address the spread of the Omicron variant, considerations should be given to:

- Relevant pandemic response goals (e.g., reduce transmission, maintain health system capacity, reduce morbidity and mortality).
- Risk tolerance and the impacts on society (including the health system and essential services) of a potential increase in cases resulting from higher rates of transmission.
- Enhancing existing public health measures to help mitigate any potential increases in transmission. Measures include improving vaccination coverage, staying home when sick, masking, ventilation and hand hygiene in a multi-layered strategy.

Conclusions

While there was limited primary literature available, the available literature suggests some differences in the communicability of the Omicron variant compared to previous VOCs and the wild-type strain of SARS-CoV-2:

- Most studies found that the length of the period of communicability for Omicron BA.1 (3 – 5 days PSO) was shorter than for the wild-type strain (3 – 8 days PSO).
- The range of mean incubation periods for Omicron BA.1 (2.5 – 4.6 days) and BA.2 (4.4 – 4.6 days) was shorter than that of other VOCS (3.3 – 6.5 days).
- The range of mean serial intervals for Omicron BA.1 (2.4 – 4.8 days) was shorter compared to other VOCs (4.1 – 5.4 days). One study reported the serial interval of Omicron BA.2 was 3.4 days.
- Evidence related to the Omicron VOC is rapidly evolving and conclusions may change as newer, high-quality research becomes available.

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