

Sub-lineages of Omicron in Chicago (Updated May 6, 2022)

Background

Like all viruses, SARS-CoV-2 – the virus that causes COVID-19 – constantly changes through genetic mutation. These genetic mutations can lead to the emergence of SARS-CoV-2 variants. In late 2021, the Omicron variant of concern emerged, and various sub-lineages of the Omicron variant have continued to emerge since. The Omicron variant currently includes a parent lineage (B.1.1.529), as well as several descendent lineages (e.g. BA.1, BA.2, BA.3, BA.4, and BA.5). Chicago’s Regional Innovative Public Health Laboratory (RIPHL) continues to monitor Omicron and its sub-lineages to determine how they are circulating in Chicago.

Omicron Prevalence in Chicago

RIPHL detected the first known case of Omicron in Illinois in early December of 2021 and Omicron cases in the Chicago area began to increase rapidly. **Figure 1** displays the SARS-CoV-2 lineage breakdowns in Chicago over time – it demonstrates the dominance of Alpha in early 2021, followed by Delta in mid 2021, followed by Omicron in late 2021/early 2022. Since March 20, 2021, nearly all specimens received by RIPHL were Omicron and Omicron remains the dominant variant in Chicago currently.

Figure 1. SARS-CoV-2 lineage proportions for 4,054 surveillance specimens received by RIPHL, by MMWR week of specimen collection (March 23, 2021 – April 24, 2022).

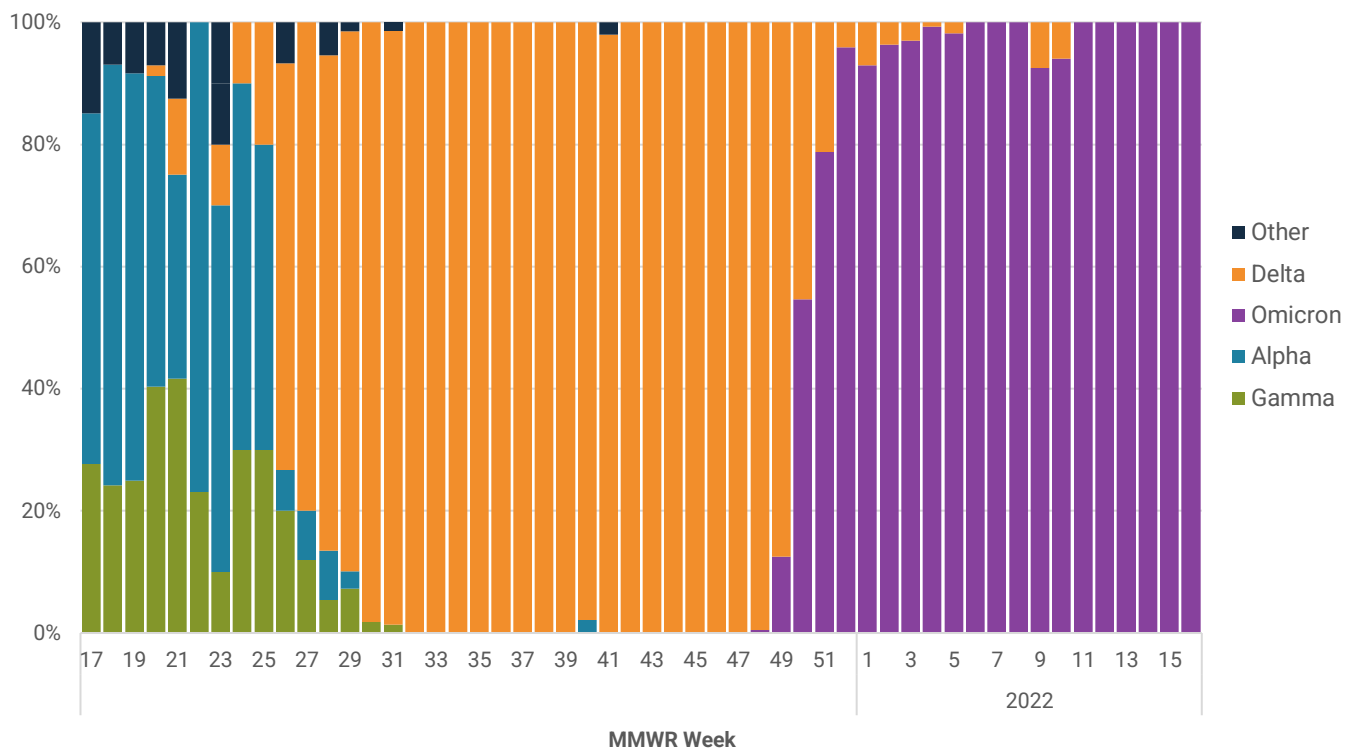
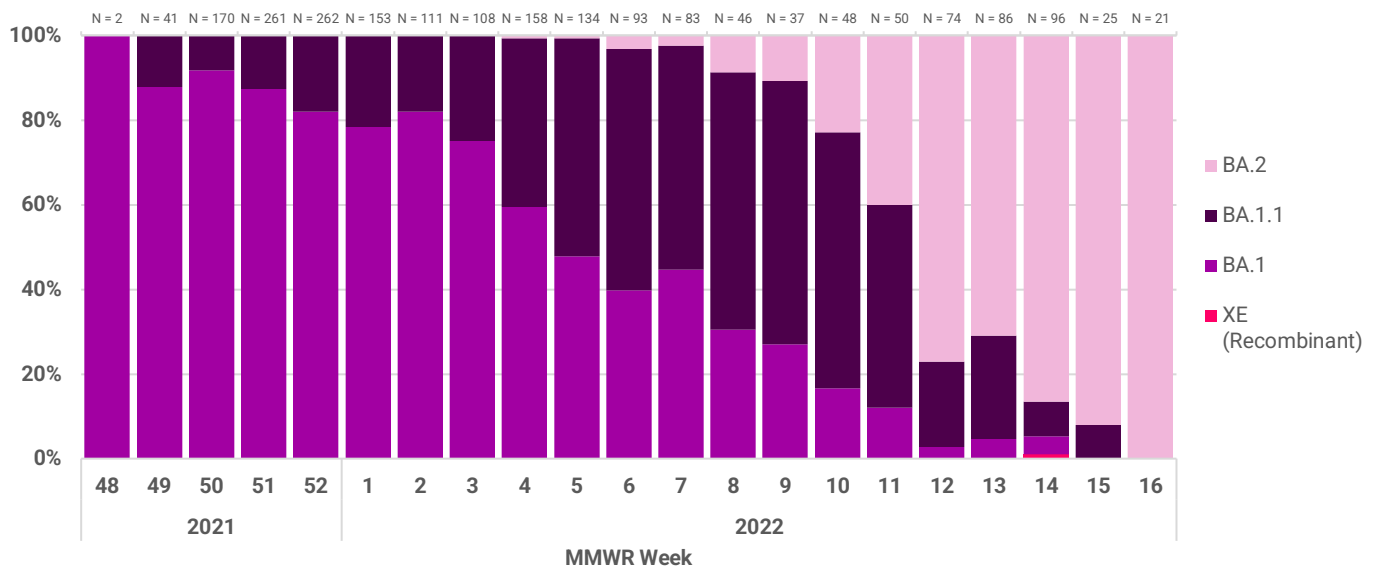


Figure 2 displays the proportions of all Omicron sub-lineages sequenced by RIPHL. When Omicron initially emerged, BA.1 was the most common sub-lineage of Omicron detected in Chicago. BA.2 was first detected in January 2022 and quickly rose to become the dominant sub-lineage of Omicron. BA.2 includes some notable emerging sub-lineages such as BA.2.12.1 which, as of early May 2022, accounts for approximately one quarter of specimens sequenced by RIPHL and is rising as a proportion of all cases. Other notable Omicron sub-lineages, such as BA.4 and BA.5 which were initially detected by scientists in South Africa, have not yet been detected in our local data but have been observed elsewhere in the US.

Figure 2. Sub-lineage proportions* for all Omicron specimens received by RIPHL, by MMWR week of specimen collection (November 2021 – April 2022).



*Sub-lineages here are shown grouped by the main sub-lineage (e.g. BA.2.12.1 is grouped under BA.2).

Conclusions

SARS-CoV-2 continues to evolve. Emerging sub-lineages of Omicron appear to be even more transmissible than the Omicron parent lineage. These emerging lineages may contribute to an increase in overall cases, as we are observing in Spring 2022. However, we do not anticipate an increase in transmission on the scale of that which was observed in late 2021/early 2022.

Getting vaccinated remains the best way to protect yourself and others from all variants of COVID-19, including Omicron and its sub-lineages. As always, visit [SARS-CoV-2](#)

[Variants | COVID 19 \(chicago.gov\)](#) for updates about SARS-CoV-2 variants circulating in Chicago.