



Clusters of SARS-CoV-2 infection across six schools for students with intellectual and developmental disabilities (IDD)



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 Michael Gemmell, BA; Tyler Walsh, MPH; Adwoa Imbeah, BS; Michael R. Sherby, J.D.; Kelly Bono, BA; Megan Baldenweck, BA; Christina A. Gurnett, MD, PhD; Jason G. Newland, MD, MEd

Department of Pediatrics

Background

- A mechanism of tracking severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) transmission is through the evaluation of clusters, epidemiological links between two or more lab confirmed cases of coronavirus disease 2019 (COVID-19).¹
- Students with IDD have difficulties following mitigation strategies.²
- In the summer and fall of 2021, the Delta variant became predominant in the US, leading to a surge in cases at the start of the 2021-2022 school year. In the winter of this same school year, the Omicron variant became predominant, leading to an unprecedented surge in COVID-19 cases.

Objective

- Compare the number of clusters identified during the three distinct periods (pre-Delta, Delta, and Omicron) during the COVID-19 pandemic.

Design/Methods

- A weekly SARS-CoV-2 saliva-based PCR test offered to students and staff at six Special School District (SSD) schools dedicated to children with IDD.
- Positive cases underwent a standard data collection form to determine in-school transmission.
- Clusters were considered as 2 or more positives cases in the same classroom having an epidemiological link.
- Clusters of positive cases were recorded from 11/23/2020 to 4/1/2022.

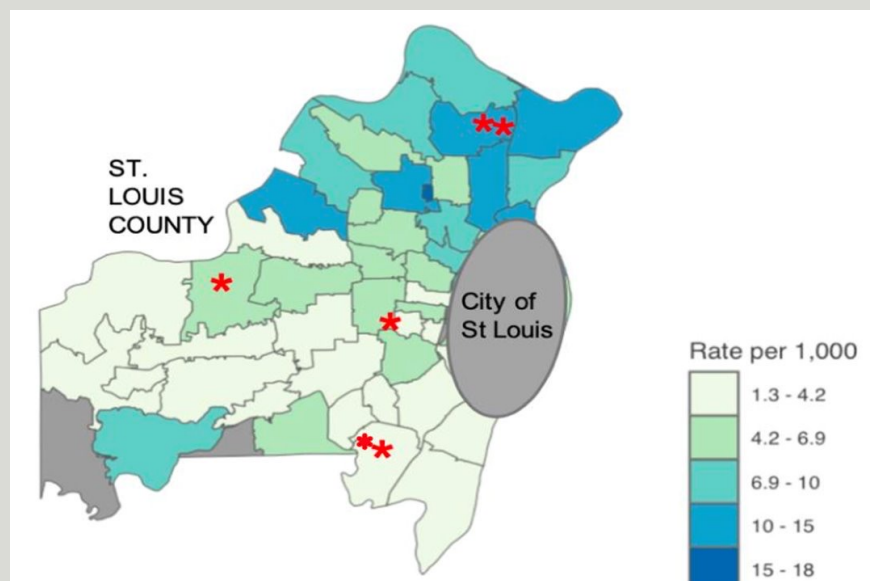


Table 1: Racial demographics of students in Special School District of St Louis schools

	Number (%)
Black	440 (48.4%)
White	403 (44.3%)
Asian	18 (4.4%)
Multiracial	27 (2.9%)
Hispanic	20 (2.2%)
Total	909

Table 2: Demographics and cluster tracking of positive COVID-19 cases from staff and students in six schools that serve students with IDD

	Pre-Delta (11/23/2020- 7/16/2021)	Delta (7/17/2021- 12/18/2021)	Omicron (1/3/2022- 4/1/2022)
Number of Positives, no.	22	23	115
Number of Clusters, no.	0	3	39
Age, Median (IQR)	57 (55-60)	40 (22-54)	41 (32-50)
Race, no. (%)			
White	17 (77)	16 (70)	87 (76)
African American/Black	3 (14)	6 (26)	23 (20)
Other	2 (9)	1 (4)	5 (4)
Ethnicity (Non-Hispanic/Latino) no. (%)			
Non-Hispanic/Latino	20 (90)	22 (100)	102 (89)
Hispanic/Latino	1 (5)	0	13 (11)
Other	1 (5)	0	0
Sex, no. (%)			
Female	15 (68)	16 (70)	86 (75)
Male	7 (32)	7 (30)	29 (25)
Vaccination Status			
Received CDC recommended dosages	11 (50)	8 (42)	39 (34)
Did NOT receive CDC recommended dosages	11 (50) ^a	15 (65)	76 (66)

^a Vaccines may not have been available at time of infection

Figure 1: Percent of COVID-19 positive cases from cluster transmission

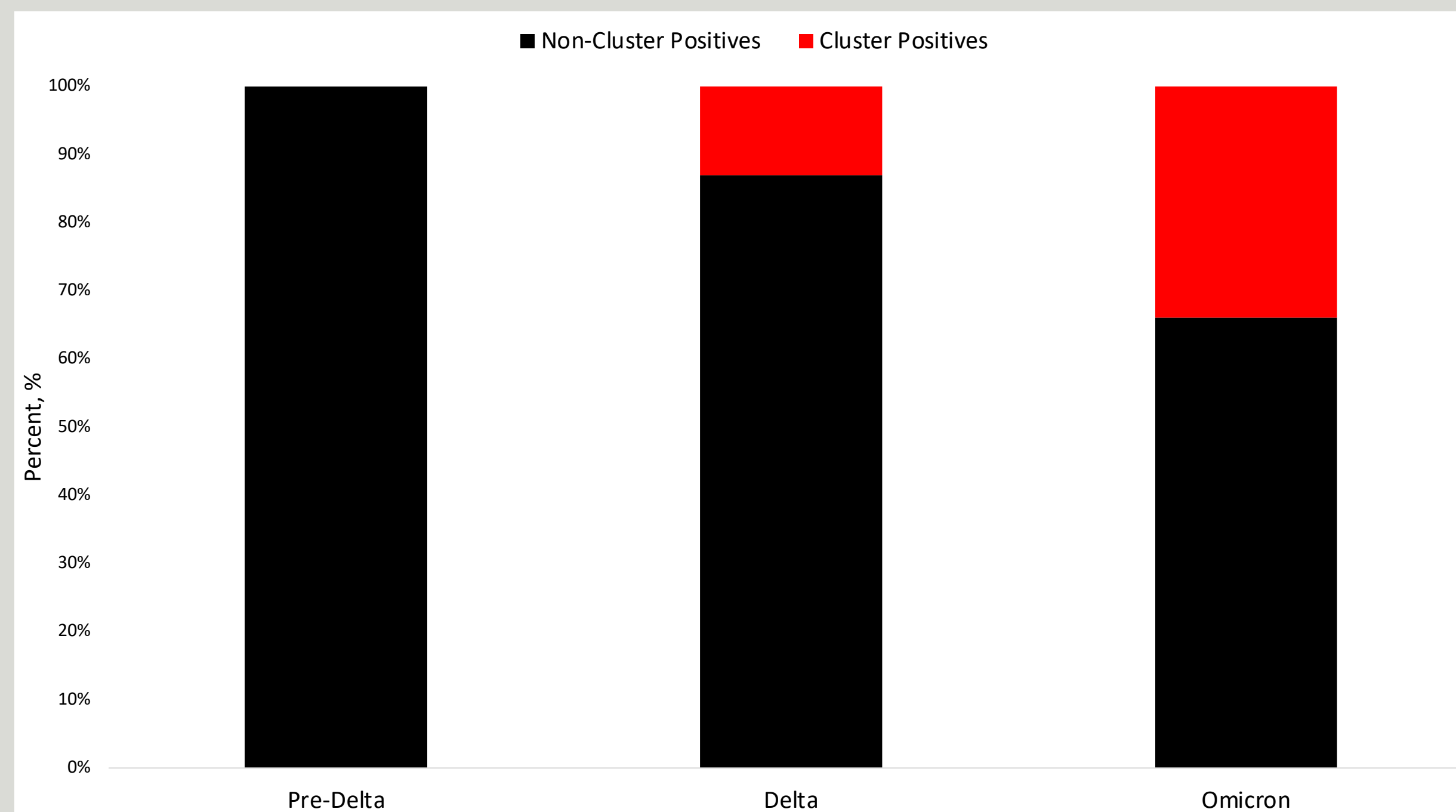
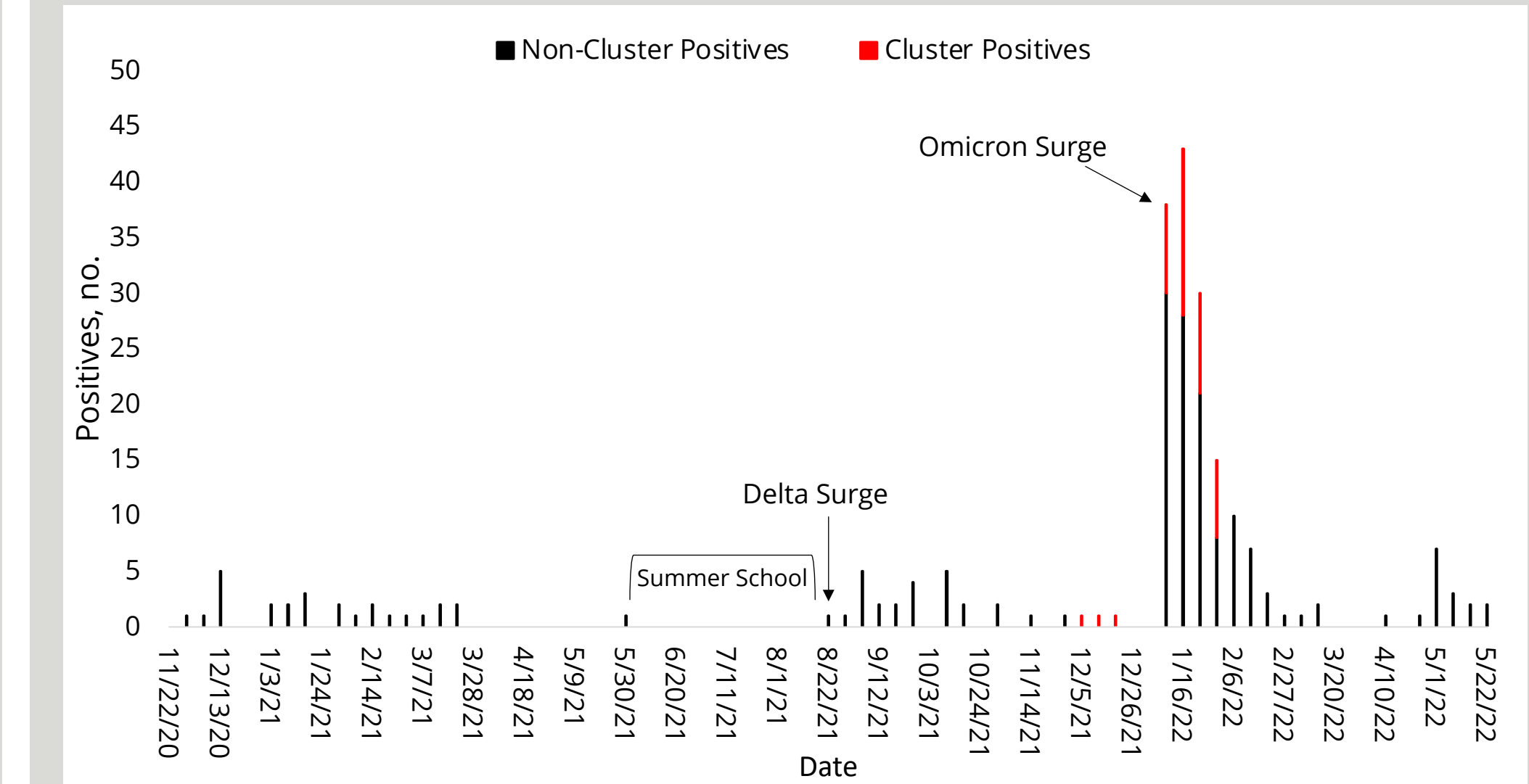


Figure 2: COVID-19 positive case count from clusters



Results

- 42 (20%) positive cases were a results of cluster transmission
- Pre-Delta, Delta, and Omicron had 0, 3, and 39 positive cases from clusters, respectively.
- The rate of cluster frequency increased significantly at week 59 following a return to school from winter break during the Omicron variant surge.
- During the Omicron surge, all the clusters were identified from 1/3/22 to 4/1/22 when masks were still required in these schools.

Limitations

- Not all students and staff were enrolled in the study, which may have led to the misclassification of people involved in cluster transmission.

Conclusion

- The increased frequency of clusters during the Omicron variant was coupled with an increased frequency of positive cases.
- Staying up-to-date on vaccinations will play an important role in limiting the frequency of cluster-based transmission.
- As schools, including those for children with IDD, decrease the number of mitigation strategies during this current school year, monitoring clusters in these schools may be a helpful strategy to help determine the need for the addition of more mitigation strategies to limit COVID-19 transmission.

References

- Centers for Disease Control and Prevention COVID-19 Guidance: Prioritizing non-healthcare worksite assessments for Coronavirus Disease 2019 (COVID-19) Available at: <https://www.cdc.gov/coronavirus/2019-ncov/php/community-mitigation/prioritizing-non-healthcare-assessments.html>
- Sherby MR, Walsh TJ, Lai AM, Neidich JA, Balls-Berry JE, Morris SM, Head R, Prener CG, Newland JG, Gurnett CA; COMPASS-T Study Group. SARS-CoV-2 screening testing in schools for children with intellectual and developmental disabilities. *J Neurodev Disord.* 2021 Sep 1;13(1):31. doi: 10.1186/s11689-021-09376-z. PMID: 34465306; PMCID: PMC8407928.