

Grace Yuan; Samantha Hayes, MPH; Sara Malone, PhD; Sewuese Akuse, MD, MPH; Tremayne Watterson; Summer Reyes; Sydney Reyes; Christina Evans; Brittany Bonty; Jasmine Prater, MS ; Jamee Shelley; Jingxia Liu; PhD Stephanie Fritz, MD,MSCI; Jason Newland, MD, MEd

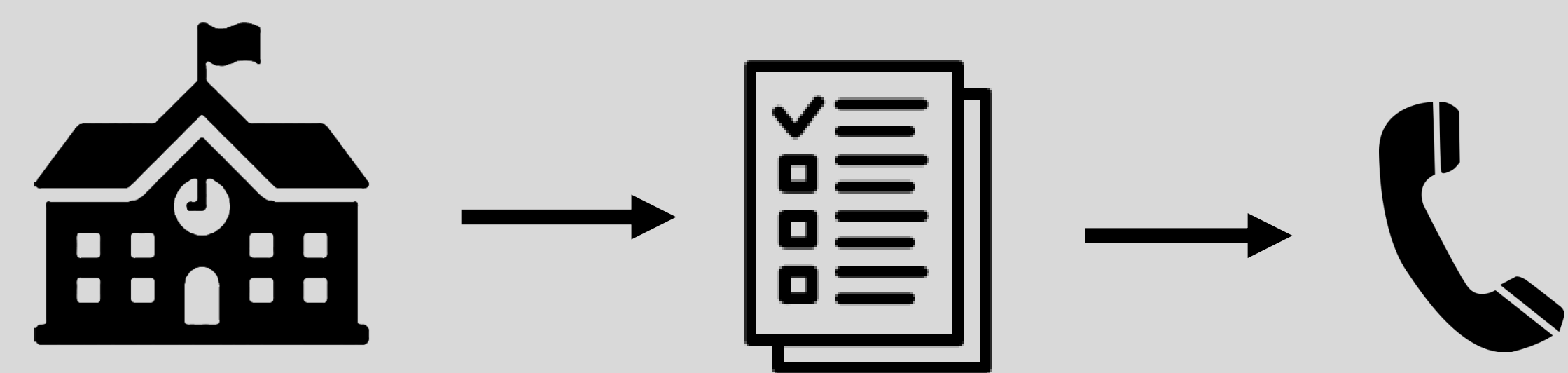
## Introduction

**Background:** Upon emergence of the COVID-19 pandemic, schools were closed to prevent widespread transmission. When schools reopened, varying mitigation strategies were implemented, including contact tracing.

**Case and contact investigation** is a mitigation strategy to understand SARS-CoV-2 transmission.<sup>1</sup>

**Objective:** Investigate SARS-CoV-2 transmission in schools that employ contact tracing.

## Methods

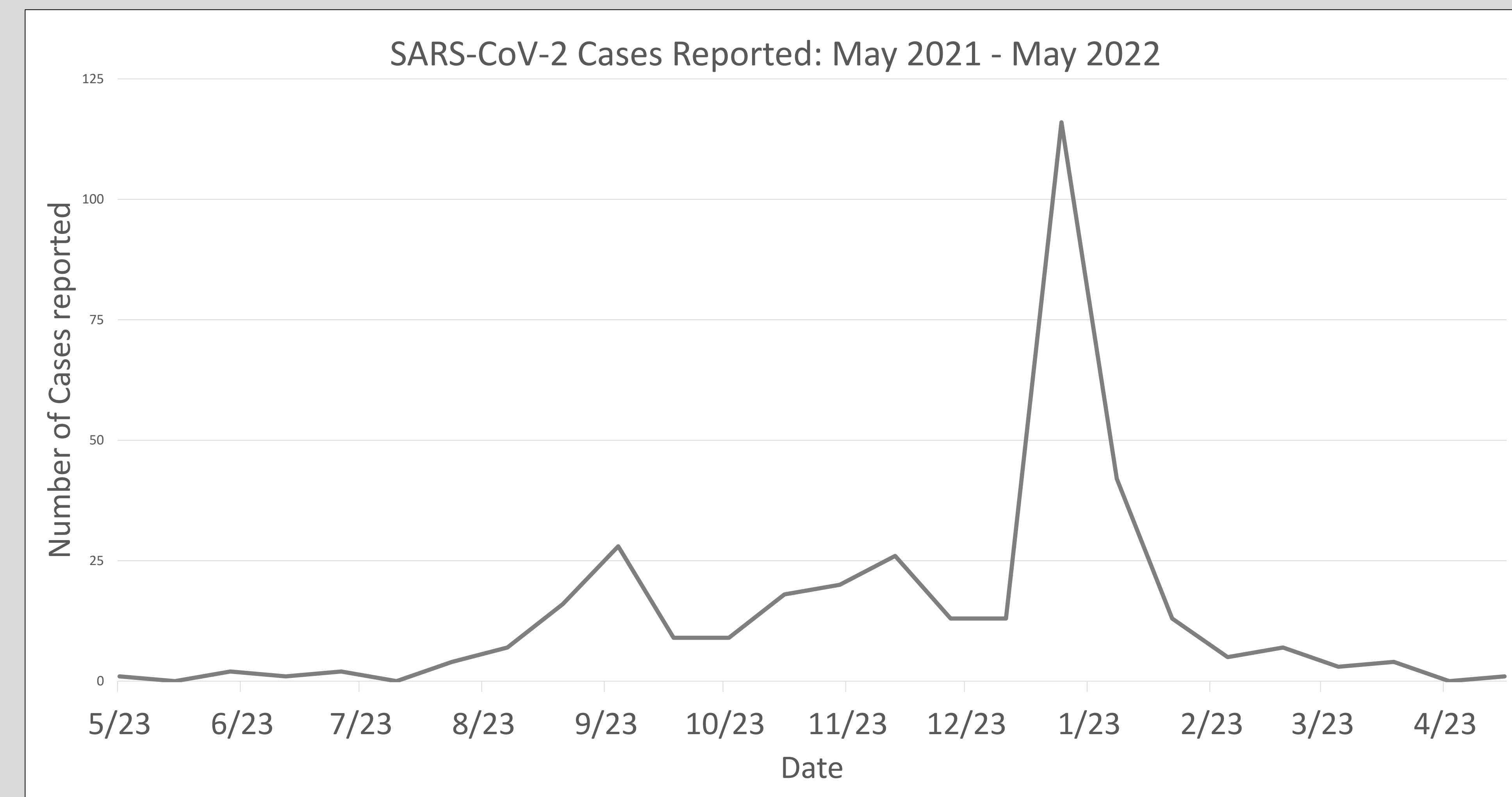


- This research is from a subset of participants in a randomized control trial evaluating SARS-CoV-2 testing strategies in schools.<sup>2</sup>
- Study Population: Students, teachers, and staff members at 5 middle and high schools in Metropolitan St. Louis.
- Weekly, each school provided the incidence rate of COVID-19 cases among their students, teachers, and staff members.
- Two schools provided daily case and contact information:
  - Cases** were eligible for interviews if they were identified with a known positive test or were a presumed positive by a practitioner.
  - Contacts** were eligible for interviews if they were identified as a close contact\* to a case within their school.
    - \*An individual less than 6 feet away from an infected person for a total of 15 minutes or more over a 24 hour period
- Trained interviewers conducted a semi-structured interview with cases and controls to collect the following information:
  - Demographics
  - Perceived exposure location (cases)
  - COVID-19 transmission risks within the household
  - Activities inside and outside of the school setting
  - Presence of symptoms, symptom description and start date (if applicable)
  - Role in school (e.g., student, teacher, or staff member)

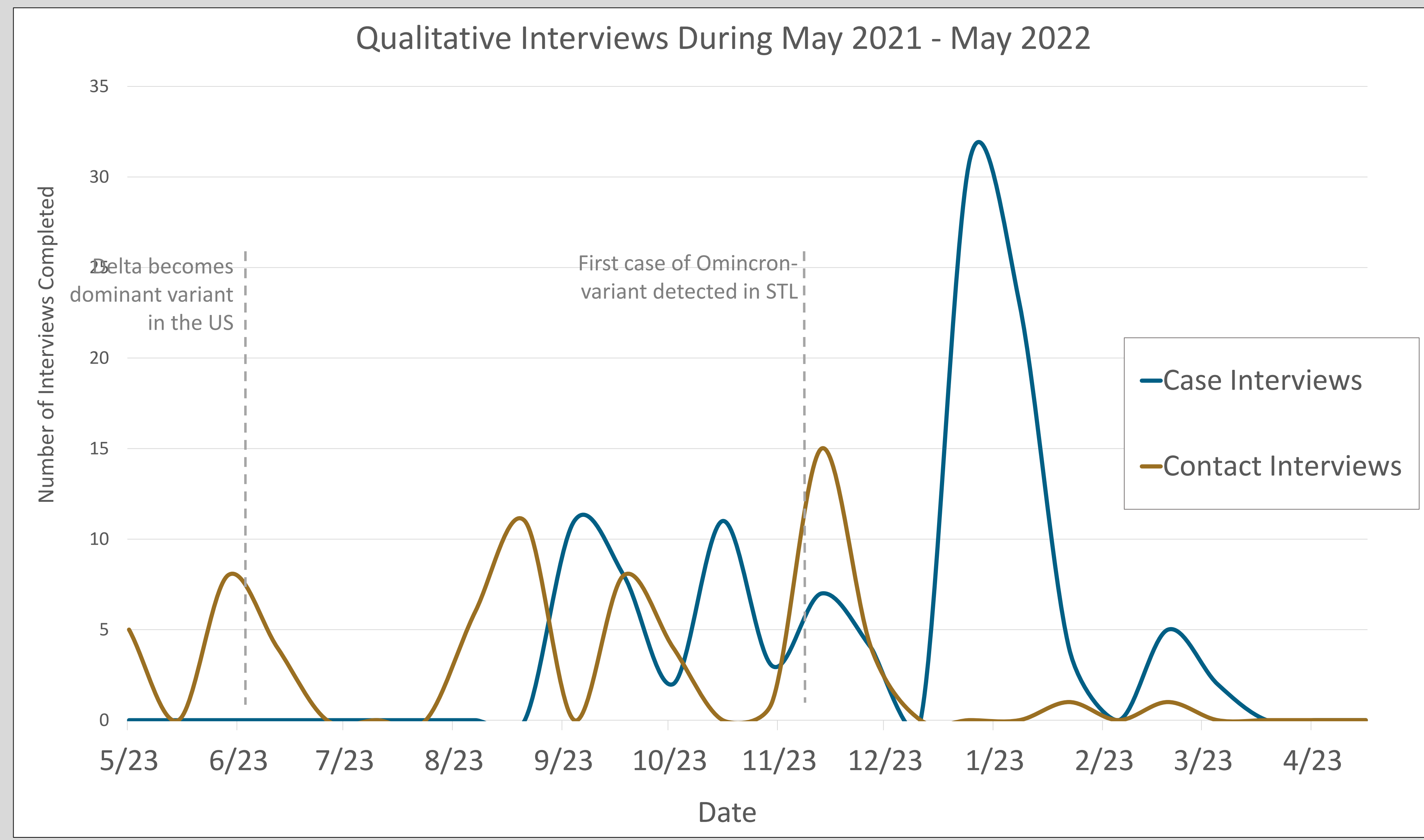
## Results

- From 5/2021-4/2022, 360 cases (45% during Omicron surge) and their 412 contacts were identified (Fig 1).
- 111 case investigations and 68 contact interviews were conducted (Fig 2).

**Figure 1: Number of Reported Cases from 5/2021 to 4/2022**



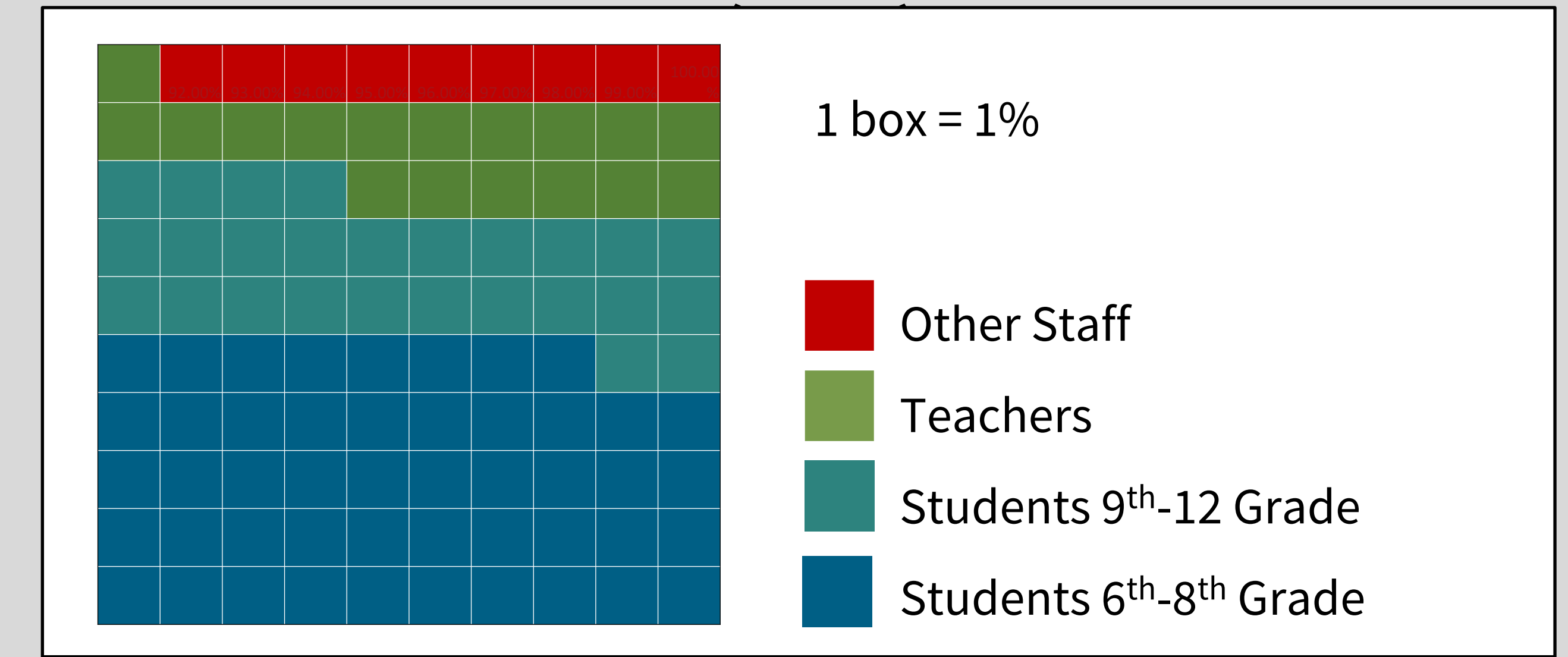
**Figure 2: Interviews conducted during Key COVID-19 Events**



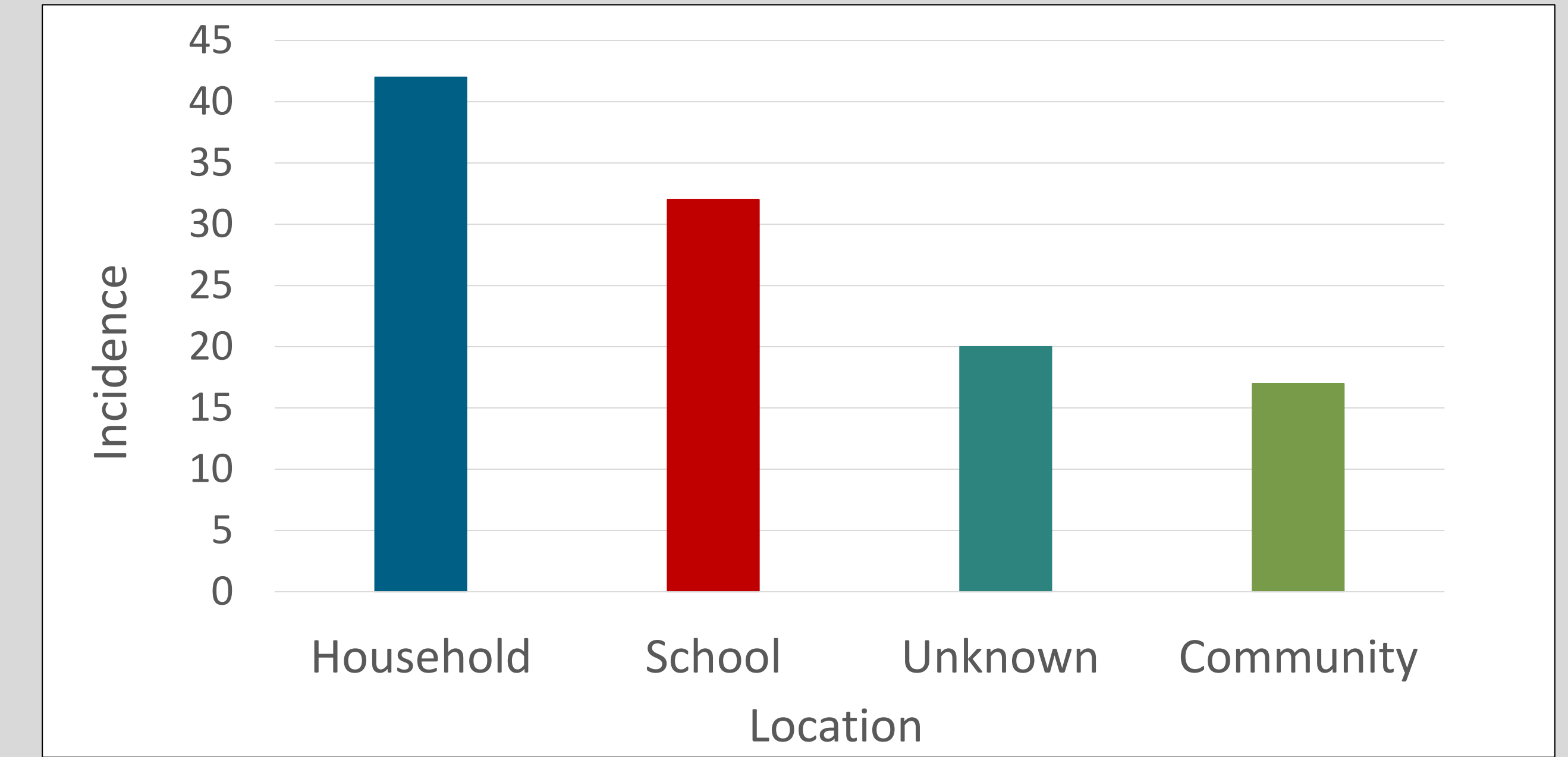
## Results

- Among the interviewed cases:**
  - 84(75%) were students (Fig 3)
  - 68 (61%) were vaccinated with their primary series
  - 103 (92%) reported symptoms.
  - 32 (29%) reported school-based exposure, mostly commonly in classrooms (Fig 4).
- Among the interview contacts:**
  - 64 (94%) were students
  - 2 (3%) reported symptoms.
  - The most common activities that students participated in were band (n=9) and sports (n=22).
  - 3 reported a household-based exposure
  - 5 reported a non-household or school-based exposure

**Figure 3: Roles of Interviewed Cases**



**Figure 4: Perceived Exposure Locations of Interviewed Cases (n=111)**



## Discussion

- Nearly **one-third of cases** reported a **school-based exposure**. This higher-than-expected finding was likely due to the increased transmissibility of the SARS-CoV-2 Omicron variant.
- In addition to identifying close contacts, case investigations can help schools identify potential areas of high-risk exposure.
- Case and contact investigation** can be a **valuable** tool to assess SARS-CoV-2 transmission in schools; however, efficacy is **limited by the reliance of self-reports and participation**. A multifaceted approach should be considered to mitigate COVID-19 transmission.
- Readily available, **as-needed COVID-19 testing** is important for schools.

References:  
1. CDC. Guidance for COVID-19 Prevention in K-12 Schools and ECE Programs. Centers for Disease Control and Prevention. Published July 9, 2021. Updated January 13, 2022. Accessed March 22, 2022. <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-guidance.html>  
2. Hayes, S., Malone, S., Bonty, B., Mueller, N., Reyes, S. M., Reyes, S. A., Evans, C., Wilcher-Roberts, M., Watterson, T., Akuse, S., Shelley, J., Yuan, G., Lackey, I., Prater, J., Montgomery, B., Williams, C., Butler-Barnes, S. T., Caburnay, C., Dougherty, N. L., Liu, J., Lai, A., Neidich, Julie., Fritz, S., Newland, J. G. (2022). Assessing COVID-19 testing strategies in K-12 schools in underserved populations: study protocol for a cluster-randomized trial. *BMC public health*, 22(1), 1177. <https://doi.org/10.1186/s12889-022-13577->