**CSS Impact Question 4 Research Article #1**

**Overarching research question:** What is the association between engagement of prevention strategies and changes in Covid-19 schools’ caseloads?

1. Intro and Lit Review

Z Timpe (assisted by T Tripathi, C Murray)

1. Methods

Data sources

Survey data: waves 2 and 3 Z Timpe

Sampling frame X Deng

County level data and SVI data R Iachan

Key variables: independent and dependent R Iachan

**Dependent:**

Difference score between Waves 2 and 3 of the NSCPS, standardized in two different ways: 1) divided by student enrollment; 2) divided by the time length in days between those waves

**Independent variables:**

**Prevention strategies (all dichotomized as yes/no)**: requiring masks, new HVAC system, HEPA in classroom, opened doors and windows, adherence to cleaning schedule, classroom distancing, diagnostic testing, screening of students and staff, contact tracing, information for parents, on campus vaccination, quarantining unvaccinated students

**County (and higher)-level characteristics:** These will include, among others, the Social Vulnerability Index (SVI), Covid case rates, region, state…

**School-level characteristics:** percent student body eligible for free and reduced lunch, percent student body White, Asian, Hispanic, and Black, urbanicity, enrollment (?).

Statistical Methods R Iachan

**Approach:** We collected case count data from two sources, including the NSCPS and voluntary state health department submissions for schools selected into our sample. We elected to use case data from Waves 2 and 3 of the NSCPS due to greater completion rates than from health departments, resulting in an initial sample size of approximately 170, mostly due to missingness in Wave 3 data. Steps 3-5 will be conducted with an imputed (see steps 1 and 2) and the subset of schools having complete data. As such, our plan of analysis is as follows:

1. Impute Wave 3 cases by building a regression prediction model using the county level case data (aggregated by month leading up to December, the month when Wave 3 became live)
2. Using predicted Wave 3 cases, create complete data with Waves 2 and 3 survey data
3. Conduct initial bivariate analyses using complete case data to examine association between wave 2 cases and covariates
4. Use a machine learning approach to identify the strategies and covariates most strongly related with changes in cases
5. Conduct a series of regression models testing for an association between individual prevention strategies (selected from 4) and changes in case counts after accounting for relevant covariates. This may also include testing the effect of a composite strategy index (cumulative strategies).
6. September-January; look at correlations to between county and state cases
7. Results R Iachan
8. Discussion R Iachan (assisted by T Tripathi, C Murray)

**CSS Impact Question 4 Research Article #2**

**Overarching research question:** What is the association between districts’ Covid-19 prevention policies and subsequent Covid-19 schools’ caseloads?

1. Intro and Lit Review Z Timpe (assisted by T Tripathi, C Murray)
2. Methods

Data sources

State reported data L McConnell

District policies Z Timpe

Sampling frame X Deng

County level data and SVI data R Iachan

Key variables: independent and dependent R Iachan

**Dependent:**

Change in 3-month average monthly cases between fall 2021 and spring 2022 (tbd exact months)

**Independent:**

**District policies** as defined through the district policy assessment led by James Demery

**County (and higher)-level characteristics:** These will include, among others, the Social Vulnerability Index (SVI), Covid case rates, region, state…

**School-level characteristics:** percent student body eligible for free and reduced lunch, percent student body White, Asian, Hispanic, and Black, urbanicity, enrollment (?).

Statistical Methods R Iachan\

**Approach:** We collected case count data from two sources, including the NSCPS and voluntary state health department submissions for schools selected into our sample. For this analysis, we use state-reported data linked with school district policies. As such, our plan of analysis is as follows:

1. Construct fall and spring average case counts by averaging three months of cases together, by school.
2. Conduct initial bivariate analyses using complete case data to examine association between changes in cases, district policy indicators, and covariates
3. Use a machine learning approach to identify the district policies and covariates most strongly related with changes in cases
4. Conduct a series of regression models testing for an association between districts’ prevention strategies and changes in case counts after accounting for relevant covariates. This may also include testing the effect of a composite strategy index (cumulative strategies).
5. Results R Iachan
6. Discussion R Iachan (assisted by T Tripathi, C Murray)