ABC Science Collaborative

A public health initiative that unites science and schools to ensure a safe work and learning environment

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A public health initiative that unites science and schools to ensure a safe work and learning environment

The need for school attendance while understanding the risk factors associated with COVID-19 is an urgent, unmet public health need.

Schools need up-to-date information to make important decisions about returning to school that impact the health of our teachers, staff, children, families, and our communities overall.

We need to feel confident that children and staff are returning to safe work and learning environments.

-Kanecia Zimmerman, MD, MPH
Co-chair, ABC Science Collaborative
Associate Professor of Pediatrics, Duke University

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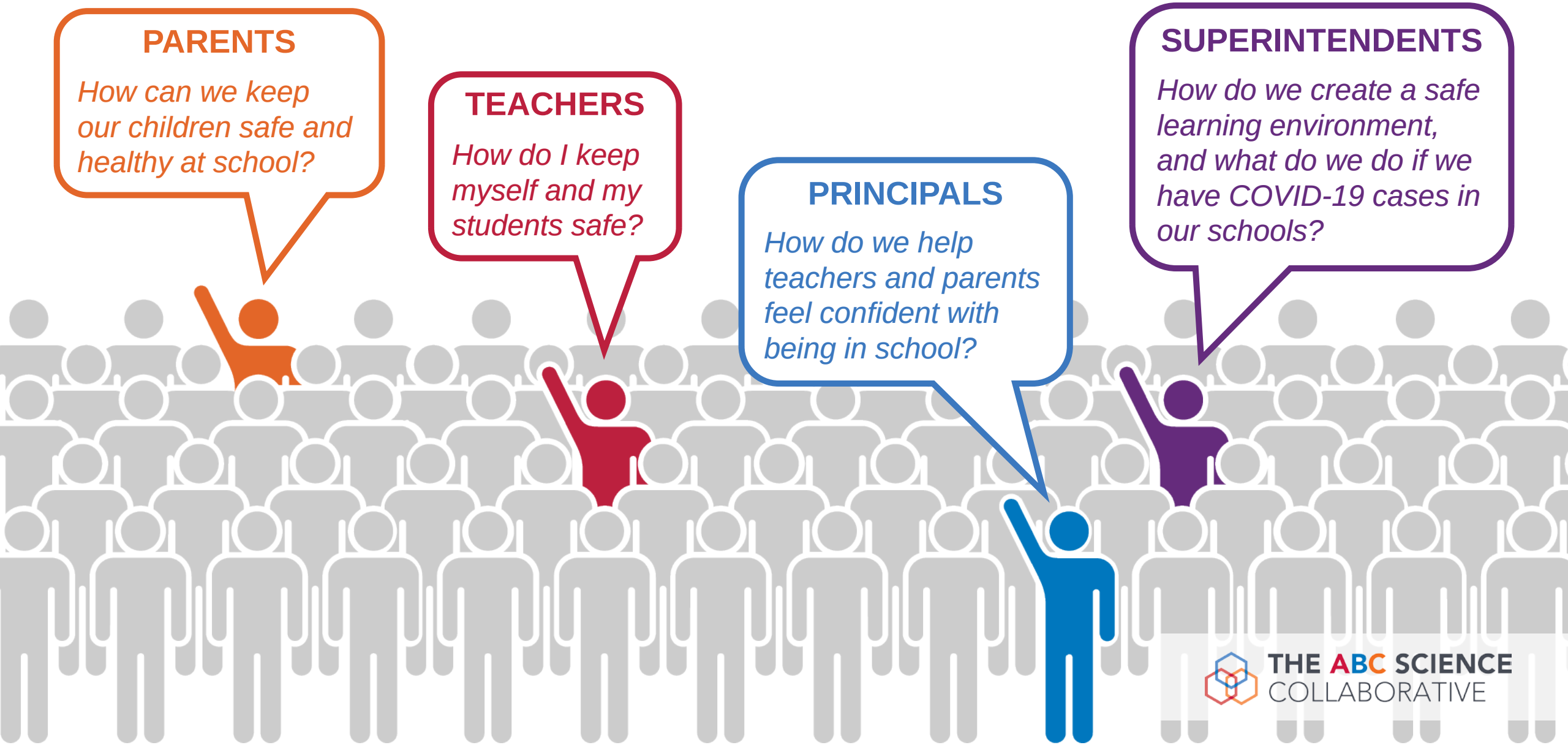
Barriers to school return: Multiple pressing questions



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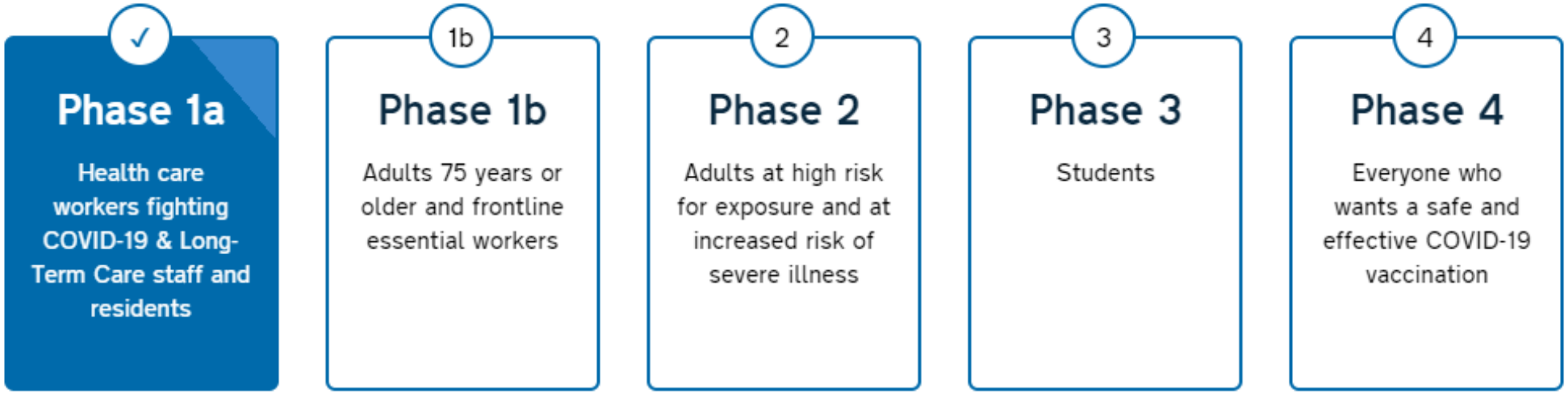
The changing landscape: rising cases and vaccinations

- Are vaccines safe?
- Why should we get vaccinated?
- Who is eligible, when (teachers vs. students)?
- How will vaccinations impact school years 2020-21 and 2021-22?



https://covid19.ncdhhs.gov/vaccines

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Introducing the ABC Science Collaborative

What Is the ABC Science Collaborative?

A program that pairs scientists and physicians with school and community leaders to help understand the most current and relevant information about COVID-19. Seed funding from the National Institutes of Health.

NIH

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The Team

Public health scientists and physicians affiliated with the Duke School of Medicine, the Duke Clinical Research Institute, and the University of North Carolina School of Medicine.

Duke University School of Medicine

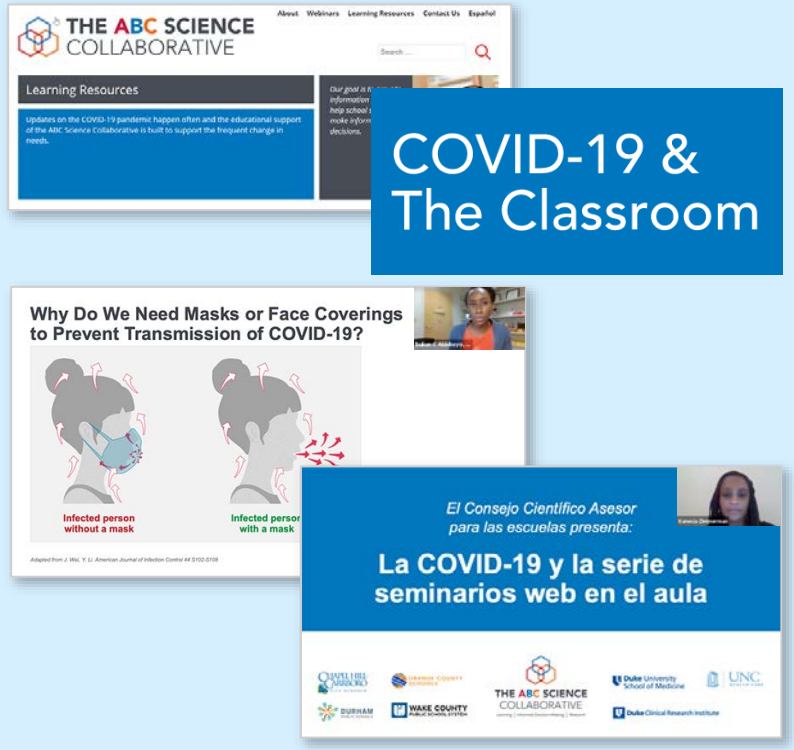
UNC HEALTH CARE

ABC Science Collaborative: A data-driven approach to support decision making

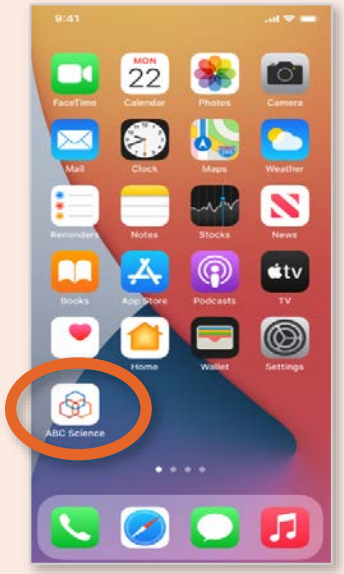
Informing Evidence-Based Decision Making

- Superintendent lifeline
- Coordination with state and local health departments
- Stakeholder groups

Delivering Educational Resources for All



Advancing Public Health



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Piedmont-Triad / District 5

Alamance-Burlington School System
Davidson County Schools
Davie County Schools
Guilford County Schools
Lexington City Schools
Mt. Airy City Schools
Surry County Schools
Thomasville City Schools
Winston-Salem Forsyth Schools
Yadkin County Schools

North Central Region / District 3

Chapel Hill-Carrboro City Schools
Chatham County Schools
Durham County Schools
Edgecombe County Schools
Franklin County Schools
Granville County Schools
Johnston County Schools
Lee County Schools
Nash County Public Schools
Orange County Schools
Vance County Schools
Wake County School
Warren County Schools
Wilson County Schools

Northeast Region / District 1

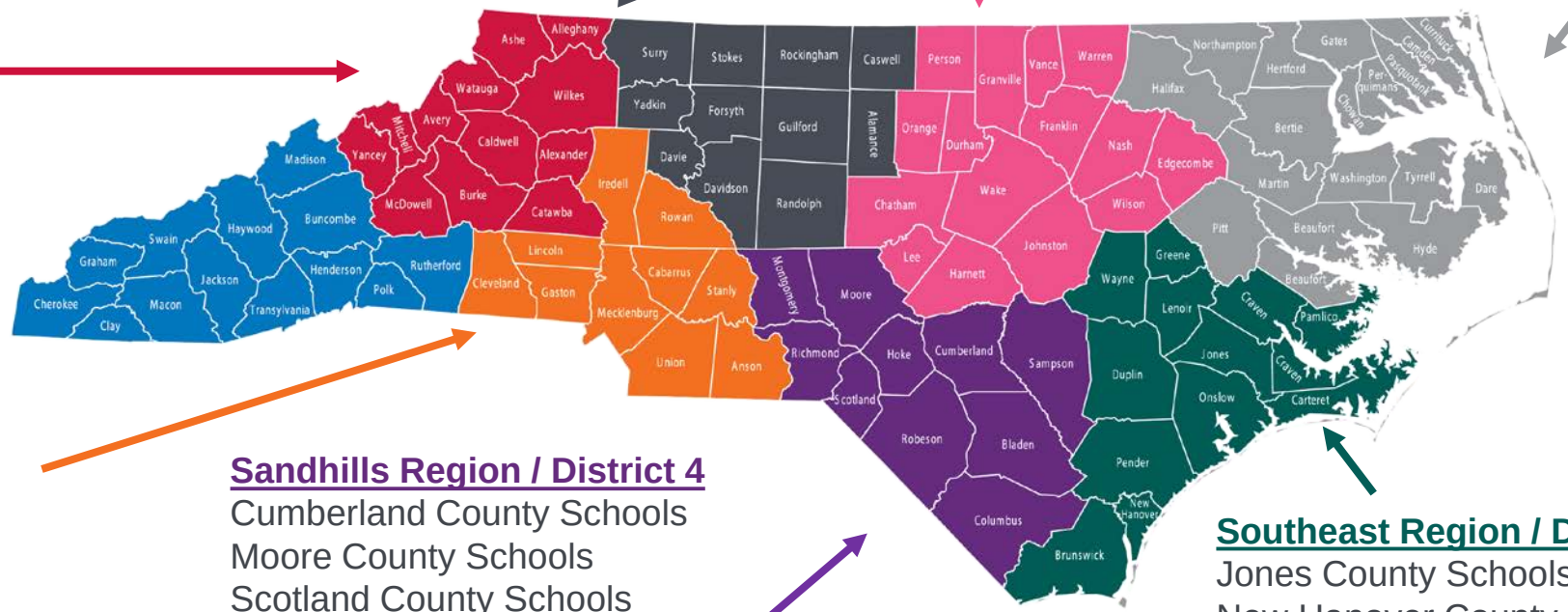
Bertie County Schools
Elizabeth City-Pasquotank Schools
Gates County Schools
Hertford County Schools
Hyde County Schools
Northampton County Schools
Pitt County Schools
Washington County Schools

Northwest Region / District 7

Alexander County Schools
Ashe County Schools
Caldwell County Schools
Hickory City Schools

Western Region / District 8

Asheville City Schools



Southwest Region / District 6

Cleveland County Schools
Gaston County Schools
Iredell Statesville Schools
Kannapolis City Schools
Mooresville Graded School District
Stanly County Schools

Sandhills Region / District 4

Cumberland County Schools
Moore County Schools
Scotland County Schools

Southeast Region / District 2

Jones County Schools
New Hanover County Schools
Carteret County Public School System

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Support of charter schools

Existing partnerships

- Stakeholder organizations
  - NCDHHS
  - National Institutes of Health
  - Local members of AAP
  - North Carolina Association of Educators
  - National Educators Association
- National Expansion
  - California
  - Georgia
  - Missouri
  - Ohio

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Immediate impact

- Successful return to in-person learning environment
- CDC meeting → prioritization of schools (first to open, last to close)
- 12 principles for reopening
- School-specific metrics to evaluate school/district performance

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Secondary transmission in schools: Background and methods

- School closures during a pandemic are designed to mitigate spread of infectious diseases
- Secondary transmission in schools is therefore a key marker for whether or not schools can keep students and staff safe and whether or not schools contribute to increases in community transmission
- 11 ABC districts agreed to track incidence and secondary transmission of SARS-CoV-2
- Local health department staff adjudicated secondary transmission
- Superintendents met weekly with ABCs faculty to share lessons learned and develop prevention methods.

Zimmerman et al. *Pediatrics* 2021

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Secondary transmission in schools: Characteristics of 11 participating districts

District	Students in Person	Primary Infections
Alexander	3972	60
Ashe	2163	43
Davie	5068	69
Gaston	19434	315
Hickory	2835	24
Iredell	16523	91
Jones	628	6
Moore	8815	69
Mount Airy	1024	7
Pitt	12700	83
Yadkin	4284	6

[1]North Carolina reports ethnicity as a separate category within race.
[2]Races with <1% for all districts listed include Native American and Pacific Islander.

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Secondary transmission in schools: results

- More than 90,000 students and staff attended school in-person for the first 9 weeks of instruction
- 773 community-acquired SARS-CoV-2 infections were documented by molecular testing
- Through contact tracing, NC health department staff determined an additional 32 infections were acquired within schools
- No instances of child-to-adult transmission of SARS-CoV-2 were reported within schools

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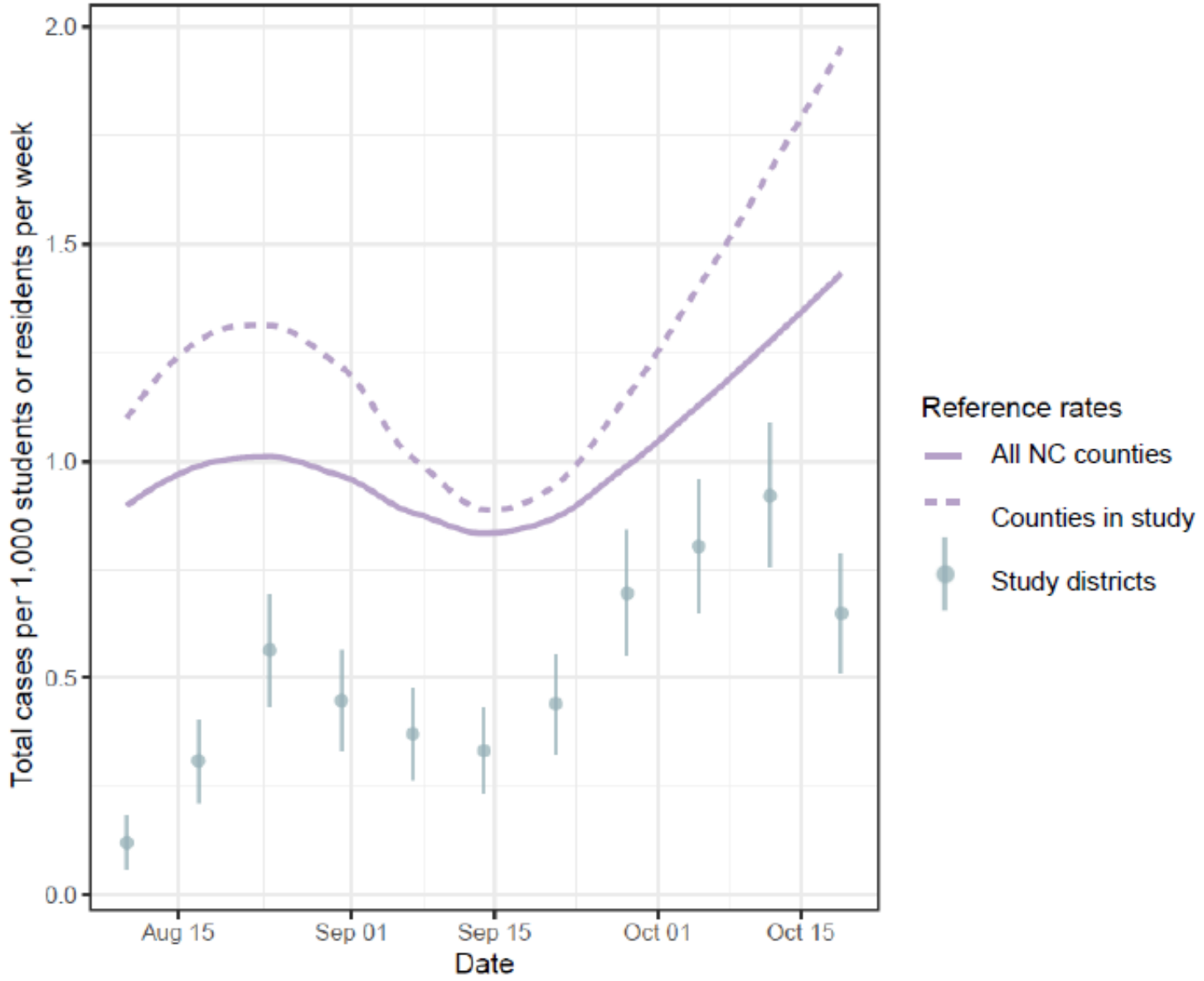
Cases in counties surrounding school districts



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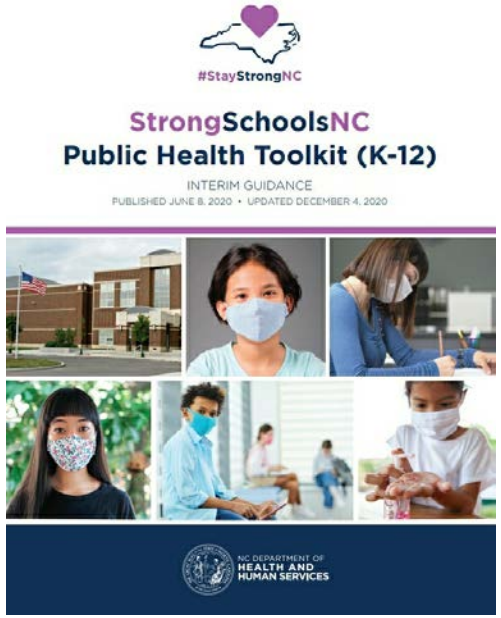
Secondary transmission: Conclusions

- On average, NC residents infected with SARS-CoV-2 infected ~1.1 other individuals during these 9 weeks
- If secondary transmission were as common in schools as in the community, we would anticipate ~900 secondary infections of SARS-CoV-2 within schools (not 32)
- enforcing SARS-CoV-2 mitigation policies such as masking, physical distancing, and hand hygiene, resulted in
  - minimal clusters of SARS-CoV-2 infection
  - diminished secondary transmission in schools
  - No increase in community infection burden
- **Successful return to in-person school**
  - **Defined by strong leadership**
  - **Defined by adherence to mitigation strategies**
  - **Not defined by community transmission**



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School-specific metrics

Cluster Event	Action Taken
Rapidly* increasing number of infections that are linked epidemiologically within a school	District leadership discusses the safety benefits of remote learning for the individual school with the school board, an independent body, local health department, and key stakeholders.
Rapidly increasing number epidemiologically linked across a school district	District leadership discusses the safety benefits of district-wide remote instruction with the school board, an independent body, the local health department, and key stakeholders.
Substantial secondary transmission within a school**	District leadership discusses the safety benefits of remote instruction for the individual school with the school board, an independent body, local health department, and key stakeholders.
Substantial secondary transmission in a school district**	District leadership discusses the safety benefits of district-wide remote instruction with the school board, an independent body, the local health department, and key stakeholders.

* Rapidly increasing number of infections for a school is defined as ≥15 linked cases within a two-week period
** Substantial secondary transmission: defined as >5 cases of COVID-test positive, within-school transmission per 1,000 students/week

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12 Principles for safe schools

1. **BE TRANSPARENT**
   Report all primary COVID-19 cases by week, by school.

2. **MAKE A ROAD MAP FOR CONTACT TRACING AND TESTING**
   The school district and local health department(s) should make available publicly who will do what in a successful contact tracing.

3. **DEVELOP A DASHBOARD**
   A pandemic management dashboard should include primary cases, secondary cases, testing rates, and comparisons to county-wide data.

4. **IMPLEMENT LESSONS LEARNED**
   School leadership should work with staff to understand secondary transmissions and to implement lessons learned.

5. **WORK WITH A TRUSTED THIRD PARTY TO ANALYZE DATA**
   For example, partner with the ABC Science Collaborative.

6. **LEVERAGE SCHOOL-BASED METRICS**
   Secondary transmission per 10,000 students and number of clusters per 10,000 students are metrics that are preferable to county data because the crucial element of managing schools is to prevent spread within schools.

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12 Principles, cont.

7 FIGHT PANDEMIC FATIGUE
Target >99 percent adherence to masking by all mainstream curriculum students, teachers, and staff on school property at all times (except for eating and drinking). Use an anonymous hot line or web portal to report non-compliance or a simple daily walkthrough to check that all masks are over the nose, mouth, and chin.

8 MAKE A DETAILED SCHEDULE
Customize the schedule for each school. Examples for elementary, middle, and high schools are available from the ABC Science Collaborative. ***The Toolkit is especially important here.***

9 CONSIDER EXTRACURRICULARS
In addition to a detailed plan for the general school day, develop a detailed plan for all extracurricular and school-sponsored activities such as sports and the arts.

10 CONSIDER SPECIAL NEEDS
This group of teachers and students need additional precautions. Plans should be developed locally, and these groups should receive allocation of extra resources because masking is not always possible.

11 DEVELOP A COMMUNICATION PLAN
How will districts communicate, with whom, and when? Develop a communication plan that is detailed, but that can be revisied as new data and insights come to light.

12 WALK, THEN RUN
A defined return to in-person learning (for example, in a hybrid model) can give everyone a chance to adapt to new procedures and policies.

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Learnings from the field to move NC schools forward

- School specific data are key
  - Transparency to build and cultivate a culture of safety and trust
  - Case management for cases and exposures (varying periods of quarantine, vaccination status)
  - Regular data analysis to evaluate progress
- Rapid, consistent, transparent contact tracing and access to testing
  - Quickly identify in-school exposures
  - Consider effects of quarantine on staff availability
  - School staff from counties outside school district
- Ensure adherence to mitigation strategies (masking)
  - Support culture of safety without fear of retribution

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Opportunities for NC

- To lead policies for schools
- To prevent disrupted 2021-22 school year
- To create and refine a “playbook” for future pandemic mitigation efforts

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Thank you.

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