

# Attachment C-1 Covid-19 Grant Project Status Report

Before it will be possible to make any disbursement, you are required to provide to the Agency the status towards the specific purpose as stated in the grant contract (Attachment A-1). This report is to be completed by the grant recipient and each subrecipient. The grant recipient is to ensure all subrecipients' reports are to be included with cost reimbursement requests. RECIPIENT COMPLETION INFORMATION:

Upload forms using the following link: <https://ncosbm.sharefile.com/r-rc7f2ca49d574af2a>

## 1. Organization

|                           |  |
|---------------------------|--|
| Organization Name         | North Carolina Policy Collaboratory at the University of North Carolina at Chapel Hill<br>(GSPH/Epidemiology/Powers) |
| Contract Agreement Number | 23-01  |
| Date                      | February 15, 2021  |

## 2. Financial Summary

| Total Funding Authorized | Total Funding Received to Date | Balance    |
|--------------------------|--------------------------------|------------|
| \$164,919                | \$155,993.94                   | \$8,925.06 |

**3. Performance:** Recipient (or subrecipient) shall detail below how the organization has spent the amount of funding allocated for the specific purpose as stated in the grant contract. The description should include activities and progress

**Descriptive summary of how the funds were used, including specific deliverables achieved, and progress against objectives and outcomes expected to be achieved.**

- See attached

## BRIEF REPORT: SARS-CoV-2 Prevention in North Carolina Public K-12 Schools

In March of 2020, primary and secondary schools throughout the United States closed their doors in response to the rapidly developing COVID-19 emergency. With limited testing capacity, little scientific understanding of SARS-CoV-2 transmission dynamics, and no biomedical tools to reduce transmission, state and local governments issued sweeping “stay at home” orders that included school and business closures. These actions were unequivocally effective in reducing transmission of the novel coronavirus; however, they caused profound disruptions to daily life. Concerns about school closures included the potential for loss of learning, disruptions to school-based nutritional and social services, detrimental effects on students’ mental health, growing disparities, and caregiver challenges in maintaining employment while caring for children at home.

Given these significant downsides of closing schools, urgent calls soon arose from many families and advocacy groups for schools to reopen in the 2020-2021 academic year. State governments and local school boards struggled to reconcile the importance of in-person learning with legitimate concerns about the public health dangers of in-school coronavirus transmission. Amidst these high-stakes challenges, a patchwork of responses arose throughout the country, with some school districts fully reopening their buildings on the first day of school, others gradually opening over time, and others deciding to remain closed for the academic year.

In North Carolina, Governor Roy Cooper announced in July of 2020 that schools throughout the state would be permitted to reopen on August 17, 2020 under a “Plan B” (“Moderate Social Distancing”) model that would ensure distancing of  $\geq 6$  feet between people and limit density of people in school facilities and vehicles to  $\leq 50\%$  maximum occupancy. As part of this announcement, Governor Cooper also stipulated that local school districts could choose a more restrictive “Plan C” approach of remote learning only. The governor later announced that the State would allow schools to reopen kindergarten through fifth grade under a “Plan A” (“Minimal Social Distancing”) model as of October 5, 2020. With the latitude given to school districts – along with the variability across districts in terms of local priorities, resources, and epidemiological conditions – a wide variety of school reopening approaches ensued across the state in the fall of 2020. Against this backdrop, *we sought to obtain a detailed understanding of North Carolina school reopening processes, policies, and practices to inform ongoing and future efforts to protect school communities’ health and well-being.*

We had two specific aims to achieve this over-arching goal:

**Aim 1: Conduct a systematic review of written policies around COVID-19 and K-12 school reopenings in districts across North Carolina.** To understand school reopening approaches across the state in the fall of 2020, we gathered publicly available policy documents from all 115 public school districts, and we assessed the number, type, and contents of available policy documents. We analyzed reopening plans over time, and in a representative subset of 30% of the districts, we completed a “deep dive” review of documents to assess how, when, and why districts selected or modified reopening plans; the degree to which districts considered resources available for families, students, and staff; and the protocols implemented for face-to-face learning.

**Aim 2: Conduct in-depth web surveys with NC K-12 public school teachers about their COVID-related experiences.** As the “eyes and ears on the ground” in school settings, and as front-line workers who need careful protection against COVID-19, teachers serve a unique role and have an important vantage point from which to assess the successes and challenges of in-person learning during the pandemic. We surveyed teachers in four school districts from across the state in which in-person learning had resumed during the fall of 2020. The survey assessed teachers’ COVID-related experiences across several domains, including:

- Training and preparation for returning to in-person teaching;
- Presence of and observed adherence to in-school COVID-19 mitigation measures;
- Perceived safety in school and community settings;
- Perceived support of school staff and community for in-school COVID-19 prevention measures;
- Attitudes toward COVID-19 vaccination and testing; and
- Stress, fatigue, and perceived academic effectiveness in comparison to prior years.

We provide a brief summary of key study findings for each of these aims – the *NC COVID-19 School Reopening Systematic Review* and the *NC COVID-19 Teacher Experience Survey* – on pages 2-7. We offer overall conclusions and a brief set of recommendations arising from our work on page 8.

## AIM 1: NC COVID-19 SCHOOL REOPENING SYSTEMATIC REVIEW

To understand school reopening approaches across the state between August and December 2020, we identified and analyzed policy documents available on each of the 115 NC public school district websites in the first half of the 2020-2021 academic year. Our analysis of the full set of school districts had two main components: 1) a description of school reopening plans (defined in **Box 1**) by week, and 2) a description of the number and type of policy documents available. In a subset of 36 districts, we conducted a detailed review of the available documents to assess districts' decision-making criteria, communication approaches, and the COVID-19 mitigation measures employed in school settings. This subset was selected to achieve a 30% sample that approximated the distribution of all school districts across the state with respect to region (Piedmont, Coast, Mountains) and locale type\* (rural, suburb, city, town). We summarize key findings of the systematic review below.

**Box 1. Operational definitions of NC school reopening plans.** Districts were classified according to the least restrictive plan in place at a given time.

**Plan A – Minimal Social Distancing:** Districts were categorized as operating in plan A for a given week if >50% of students could be in school on a particular day for any grade K-12. Students could return to school with minimal distancing for all grades K-5 beginning October 5, 2020; however, some districts returned >50% of students in a smaller set of grades from the start.

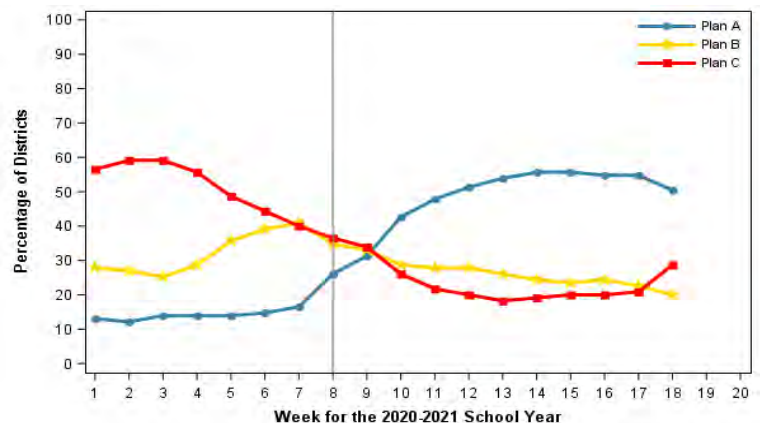
**Plan B – Moderate Social Distancing:** Districts were categorized as operating under plan B if any grade K-12 returned to face-to-face learning, but with ≤50% of students in that grade attending each day, operationalized as the average proportion of children in school each day of the week.

**Plan C – Remote Learning Only:** School districts were categorized as operating in plan C if there were no grades where face-to-face instruction was occurring. Schools could still be categorized as plan C if only specialized subgroups (e.g., exceptional children) were face-to-face.

\*As determined for each district by the US Department of Education and reported by the NC Department of Public Instruction.

### ❖ District reopening plans varied considerably over time.

- On August 17, when most school districts in NC started the 2020-21 school year, 50 (43%) NC school districts began with some students returning for face-to-face instruction (**Fig. 1**).
- While the proportion of districts in Plan B remained fairly consistent over time, larger changes occurred in the proportions of districts in Plan A and Plan C.
- Among the 65 school districts beginning the year in Plan C, five transitioned to Plan B and 17 initiated face-to-face instruction with some version of Plan A before the end of 2020, with one district subsequently reverting to Plan B and three to Plan C. The average time to returning to face-to-face learning in these districts was ~8 weeks.
- Districts that started in Plan C but later switched to Plan A or Plan B often reopened with a staggered approach, usually starting with elementary grades and then moving to middle and high school grades.
- Among the 50 school districts that initiated face-to-face learning at the start of the school year, 11 moved at some point from face-to-face instruction to Plan C for remote learning.



**Fig 1.** Percentage of school districts following each plan between August 17 and December 31, 2020. The vertical line at week 8 corresponds with the announcement by Gov. Cooper that Plan A for K-5 students would be authorized.

### ❖ There was variation by region and locale type in the evolution of reopening plans.

- In the Coastal (eastern) region, 73% of school districts (33 of 45) started in remote instruction, compared to 29% (7 of 24) in the Mountain (western) region and 54% (25 of 46) in the Piedmont (central) region (**Fig. 2**).

- By the end of December, 71% (17 of 24) of school districts in the Mountain region were operating in plan A, compared to 48% (22 of 46) in the Piedmont and 42% (19 of 45) in the Coastal region.

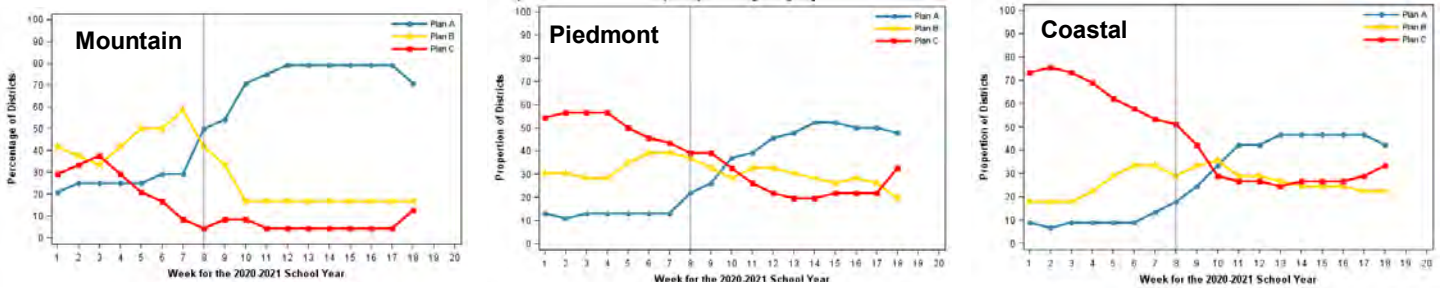


Fig 2. District reopening plans by region, August 17 through December 31, 2020.

- A higher proportion (91%; 10 of 11) of city school districts reopened in Plan C as compared to rural (56%; 44 of 78), town (44%; 8 of 18), and suburban (38%; 3 of 8) districts.

❖ **School districts had different strategies for communicating with families about re-opening plans, COVID-19 prevention practices, and implementation of policies.**

- School districts varied in the number of COVID-19 related policy resources available on their websites (median = 7, range: 1 to 66), with greater differences by locale type\* than region (Fig. 3). The effort required to locate and digest policy documents varied accordingly.
- In general, school districts provided some description of required and recommended practices set forth by the NC DHHS to facilitate safe school re-opening; however, how, when, and by whom those practices would be enforced – and consequences for non-enforcement and non-compliance – were not clearly documented on most district websites.
- For example, in the detailed review of 36 districts, only 25% described how policies for social distancing would be enforced, and 11% described how cleaning/hygiene policies would be enforced.

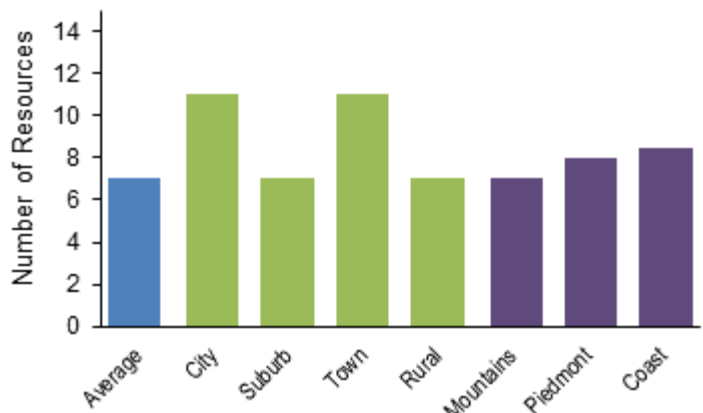
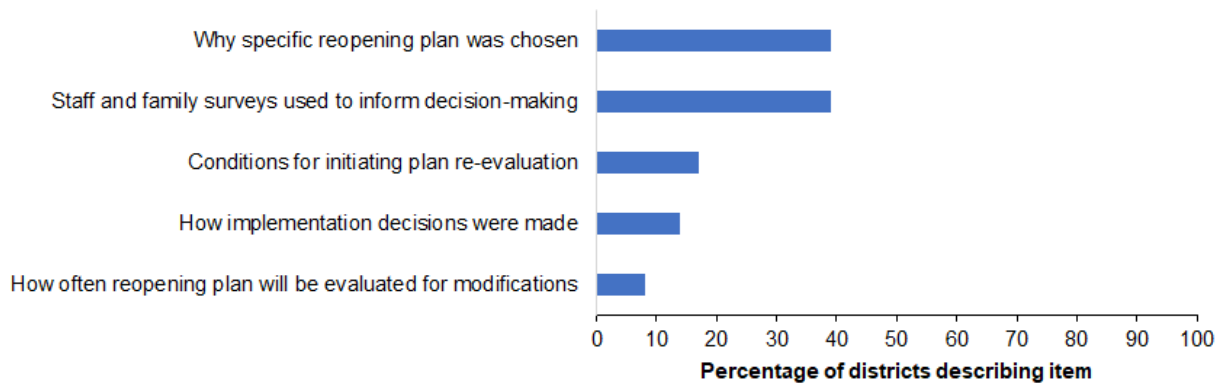


Fig 3. Median numbers of COVID-19 policy documents per district as identified on district websites, both overall and by locale type\* and region. \*As determined for each district by the US Department of Education and reported by the NC Department of Public Instruction.

❖ **Many district websites offered easily accessible information on common COVID-19 mitigation measures that would be in place in schools; however, descriptions of decision-making processes were less clear.**

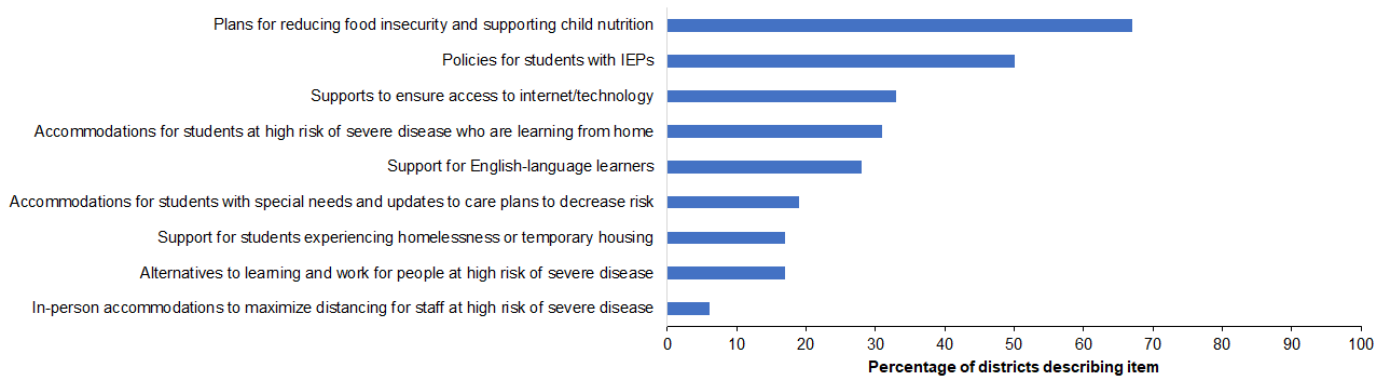
- In our detailed review of selected districts, we found that most district websites described COVID-19 prevention strategies related to symptom/temperature screening and mask use, but relatively few described considerations around ventilation, sick leave for staff, quarantine rules for siblings of exposed students, and reducing exposure risks during music and physical education classes.
- School district re-opening strategies may have been communicated to families, but how plan changes were (or would be) made was not documented regularly in the descriptions of policies/practices available on district websites (Fig. 4). There is room to improve communication about district decision-making criteria and the rationale for choosing when and whether to return to face-to-face instruction.



**Figure 4.** Percentage of districts providing selected details around initial decision-making and future modifications.

❖ **Transparency around equity considerations can be improved.**

- For policies addressing equity, most districts could improve communication about inequitable access, accommodations for high-risk staff and students, and support for homelessness and English-language learners. Written policy documents from half of districts addressed accommodations for students with an individualized education plan (IEP), and documents from two-thirds of districts mentioned plans to reduce food insecurity (**Fig. 5**).



**Figure 5.** Percentage of districts providing details around selected equity considerations.

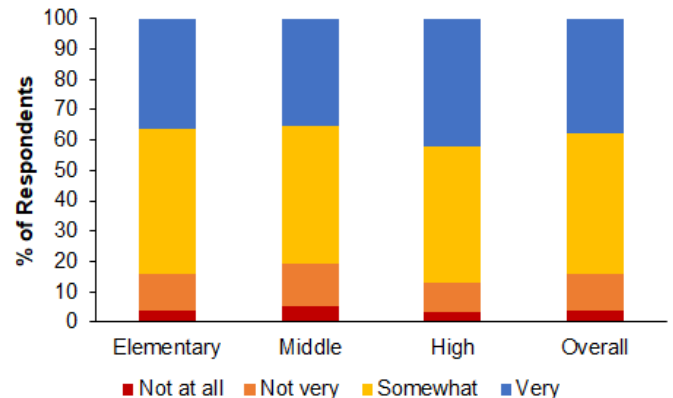


## AIM 2: NC COVID-19 TEACHER EXPERIENCE SURVEY

From mid-November through mid-December of 2020, we surveyed 700 K-12 teachers across four North Carolina public school districts where in-person learning had begun for the 2020-2021 academic year. Districts were selected to ensure inclusion of teachers from each of the three main regions of the state, with two participating districts in the Piedmont region and one each in the Mountain and Coastal regions. We highlight several key findings of the teacher survey below.

### ❖ There is room for improvement in COVID-19 safety training to prepare teachers for classroom teaching during the pandemic.

- Among the 88% of participating teachers who reported performing some in-person teaching in the fall of 2020, approximately one-quarter reported not receiving training from their school and/or district on COVID-19-related health, safety, and/or procedures before returning to school.
- Upon returning to in-person teaching, fewer than 40% of teachers across all school levels reported feeling “very knowledgeable” about infection control practices, mitigation measures that would be in place, and teachers’ role in monitoring and enforcing adherence to mitigation measures (**Fig. 6**).
- Teachers reported wanting more training on quarantine and contact tracing protocols, personal responsibility outside of school, teaching proper mask use, management of students with symptoms or likely exposures, enforcement of student adherence to COVID policies, and procedures for staff who are ill.



**Fig 6.** Among teachers who had returned to in-person teaching, the distribution of responses to the question, “How knowledgeable did you feel about your role in monitoring and enforcing adherence to mitigation measures?” Similar responses were received to parallel questions about infection control practices and the mitigation measures that would be in place upon the return to school.

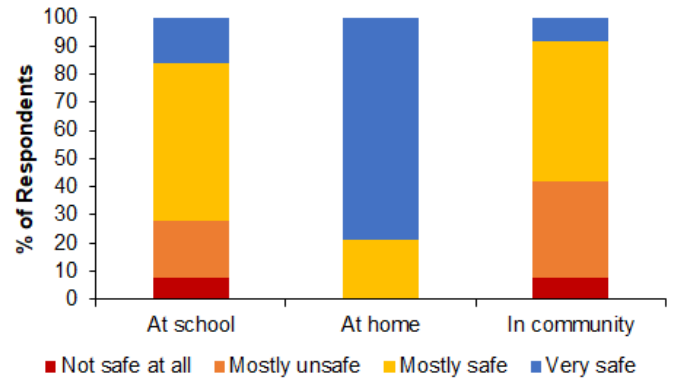
### ❖ Teachers confirmed the implementation of many COVID-19 mitigation measures and indicated relatively high levels of adherence for most; however, some areas for improvement were noted.

- Participants teaching in classrooms were asked about mitigation measures required or recommended by the NC DHHS in the following categories:
  - social distancing and minimizing exposure (26 measures assessed: 11 required & 15 recommended)
  - face coverings (8 measures assessed: 7 required & 1 recommended)
  - cleaning and hygiene (18 measures assessed: 17 required & 1 recommended)
  - ventilation (4 measures assessed: all recommended)
  - symptom monitoring (11 measures: 8 required & 3 recommended)
  - handling suspected cases (4 measures: all required)
- The only required measure with <50% of teachers confirming that it was in place was the provision of marks on restroom floors to indicate proper social distancing.
- Required measures with 50%-75% of teachers reporting that they were in place included face covering requirements throughout all school grounds (including outside), provision of guidance to the school community on proper use of face coverings, monitoring of adherence to good hygiene practices, provision of frequent hand washing and sanitation breaks, and provision of individually labeled cubbies, containers, or lockers to keep students’ personal items separate.
- Required measures with >75% of teachers reporting that they were in place included face covering requirements inside buildings, signs and markings to encourage distancing in waiting and reception areas, provision of hand sanitizer, teaching of hand hygiene practices, and symptom and temperature screenings upon staff and student entry to buildings.

- Recommended measures with <75% of teachers reporting that they were in place included one-way hallways, desk separation by at least six feet, outdoor classes, keeping doors/windows open, designating separate entrance/exit doors for classrooms and restrooms, and “cohorting” to keep small groups of students and teachers together.

❖ **While higher proportions of teachers reported feeling safe at school vs. in the community, one out of four teachers reported feeling unsafe in the school setting.**

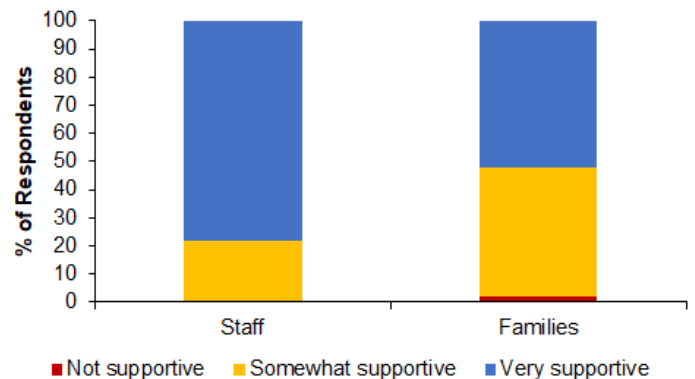
- Nearly three-quarters (72%) of respondents who were teaching in person reported feeling “mostly” or “very” safe from infection at school, and about one-quarter reported that they felt “mostly unsafe” or “not safe at all” in school settings (Fig. 7), with little difference according to school level.
- Among all teachers, a lower percentage (58%) reported feeling “mostly” or “very” safe in community settings, while nearly all respondents (99.6%) reported feeling “mostly” or “very” safe at home.



**Fig 7.** Distribution of responses to questions asking, “How safe do you feel from infection at school, at home, and in the community?”

❖ **Most teachers reported that school staff members were very supportive of school administrators’ COVID-19 prevention efforts, with lower perceived support from students’ families.**

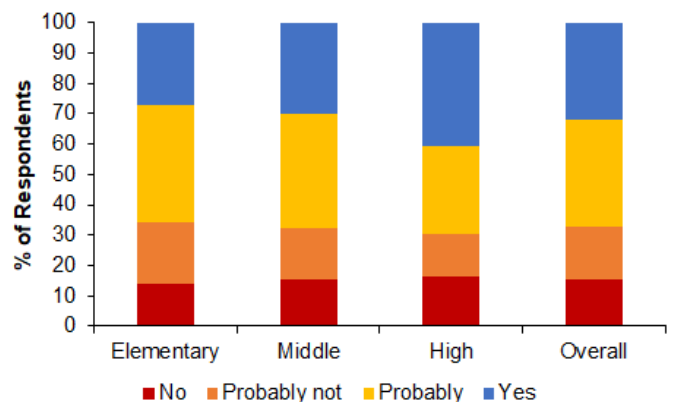
- When asked how supportive school staff had been of the efforts that school administrators were taking to prevent infection, approximately 80% of survey participants reported that staff were “very supportive,” and the remaining 20% reported that staff were “somewhat supportive (Fig. 8).
- Respondents signaled lower levels of support for infection prevention efforts from students’ families, with approximately 52%, 46%, and 2% reporting that families were “very,” “somewhat,” and “not” supportive of infection prevention efforts, respectively.



**Fig 8.** Among teachers who had returned to in-person teaching, distribution of responses to questions asking, “How supportive have school staff and students’ families been of administrators’ efforts to prevent infection?”

❖ **Most teachers expressed interest in COVID-19 vaccination and testing programs; however, vaccine hesitancy among a sizable minority could hinder vaccine uptake and suggests a need for education campaigns.**

- When asked (prior to FDA authorization of any COVID-19 vaccines) if they would want to receive “a fully tested and licensed vaccine that protected against COVID-19,” about two-thirds of respondents said “probably” or “yes” (Fig. 9).
- Only 20% believed that vaccines should be mandatory for teachers, and about 25% believed they should be mandatory for students.

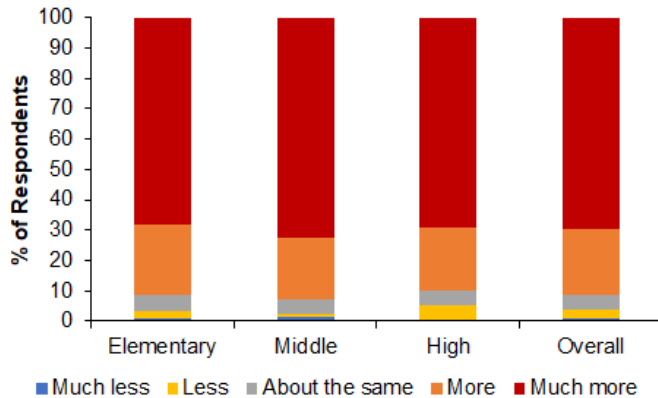


**Fig 9.** Distribution of responses to the question, “If a vaccine that protects against COVID-19 that is fully tested and licensed becomes available, would you want to get the vaccine?”

- When asked if they would want to participate in a (hypothetical) free program of weekly nasal or saliva testing for COVID-19, approximately 75% said that they would “probably” or “definitely” want to participate.
- Approximately 55% and 45% reported that widespread participation in such a testing program by teachers and students, respectively, would make them feel “more” or “much more” comfortable with in-person teaching.

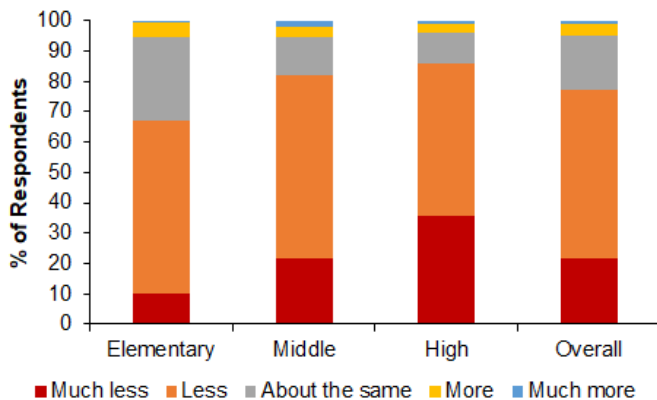
❖ **The pandemic is taking a massive toll on teachers’ well-being and perceived job performance, with the vast majority reporting higher stress levels and lower perceived teaching effectiveness than in previous years.**

- More than 90% of respondents reported feeling “more” (22%) or “much more” (70%) stressed or tired in the fall of 2020 than in prior school years (**Fig. 10**).



**Fig 10.** Distribution of responses to the question, *“How tired or stressed do you feel throughout your day this school year compared to previous years?”*

- The majority of teachers rated the effectiveness of their teaching on student learning as “less” or “much less” effective in the fall of 2020 than in previous years, with notable differences according to school type: 10%, 22%, and 36% of elementary, middle, and high school teachers rated their fall 2020 teaching as “much less” effective than in prior years (**Fig. 11**).



**Fig 11.** Distribution of responses to the question, *“How effective would you say your teaching is for student learning this school year compared to previous years?”*



## **CONCLUSIONS & RECOMMENDATIONS**

In reviewing school reopening approaches and assessing COVID-related perspectives of NC public school teachers, we have observed: 1) intensive efforts being made by administrators, staff, and teachers to operate schools safely during an ongoing public health crisis; 2) tremendous variability in reopening timing, procedures, and experiences across the state over the fall semester, and 3) several areas where improvements to protocols and communication could be made. On the basis of our findings, we recommend that reinforced efforts to protect school communities' health, safety, and well-being include the following components:

- Clear communication with teachers, staff, and families around district plans, policies, and procedures, with transparency around decision-making criteria, operationalization of COVID-19 mitigation strategies, and equity considerations;
- More comprehensive teacher training on COVID-19 safety measures before and throughout periods of in-person teaching;
- Enhanced outreach and education to foster greater support by students' families of school-based COVID-19 safety measures;
- Education campaigns to deliver sound scientific information about COVID-19 vaccines and encourage their uptake among teachers and other school staff;
- Consideration of regular asymptomatic testing programs among teachers, staff, and students to monitor infection rates and detect potential outbreaks;
- School-level evaluations of mitigation measures employed and corresponding levels of adherence to identify challenges and gaps to be addressed; and
- Increased support to address teachers' high levels of stress, fatigue, and concerns about teaching effectiveness.

A series of more detailed reports focusing on specific survey and systematic review domains is forthcoming.

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