

COVID-19 Special Investigation Report: K-12 Education in New England

Prepared August 2020



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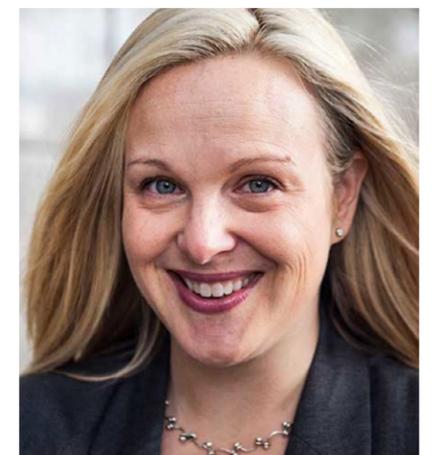
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Executive Summary

New England's K-12 schools are critical anchor institutions that serve some of the most important functions in our communities. Elementary and secondary education's primary function is youth academic development, through the cognitive, social-emotional, and physical development of children. However, to foster educational success, schools also function as a social service provider to children and their families. The vital role schools play was disrupted when K-12 education shifted online in March 2020 due to the COVID-19 pandemic. The absence of physical school has left many communities uncertain about how best to deliver both educational and social welfare services.

This special investigation report considers the key impacts of COVID-19 on the educational sector as it relates to the economic implications for families, communities, and states in New England. Furthermore, this report emphasizes the uneven and unequal impacts of COVID-19 experienced by vulnerable populations. Below, we highlight key intersecting issues and constituents that should be considered in the development and implementation of practices, programs, and policies that support the future of K-12 education during this pandemic and beyond.

As we consider the impacts of school closures and the uncertainties surrounding reopening, there is an opportunity to consider the ways in which key challenges revealed during this pandemic can be addressed. Enhancement of the K-12 education sector will require an economic investment, however, the evidence suggests that both the short- and long-term benefits of high-quality educational interventions far exceed the initial cost investment, ultimately resulting in economic savings. Evidence also suggests that early prevention efforts are more likely to be associated with cost savings, then remediation and treatment programs. During the Great Recession, states that maintained and enhanced public spending had faster recoveries. These findings suggest that the initial cost burdens of educational investments may pay future dividends. As policymakers and districts consider the impacts of COVID-19 on the future of the K-12 educational sector, they should consider the following recommendations:

- Support funding and resources to identify and remediate student learning losses associated with COVID-19 school closures.
- Explicitly fund educational interventions that support historically marginalized students and families that are disproportionately impacted by COVID-19 including: children living near or below the poverty line, students experiencing homelessness, students of color, undocumented and newcomer students, LGBTQ+ students, students who experience mental health impairments, students with disabilities, and students at risk for maltreatment.
- Explicitly fund educational interventions for students at sensitive periods of development, such as young children and children approaching high school graduation.

- Fund resources to address educational non-compliance including human resources, such as school counselors, and technologies that support student school engagement, such as access to laptops, internet and learning management software.
- Ensure that tools for educational compliance are distributed to all students, regardless of their family income or geographical region.
- Identify opportunities to invest in innovative educational accountability strategies, as districts and states reconsider the costs and benefits of standardized testing.
- Fund all necessary supportive services for students with disabilities to ensure their educational and social-emotional needs are met, including supplementing online/remote learning tools.
- Invest in teacher recruitment and retention to maintain and enhance the current teaching workforce.
- Identify and enhance access to social services that support student educational outcomes, such as access to food and nutrition programs, health and mental health services, child welfare services, services that support homeless students and their families, services for undocumented and newcomer students, and LGBTQ+ student services.
- Identify and fund related operational services that are essential for school success such as transportation services and school health and safety measures.

New England schools have a national reputation for academic excellence, and the region has the potential to lead during this moment of crisis by considering the interconnections and impacts of COVID-19 on the educational sector. This report provides an overview of the impacts of COVID-19 on students, teachers, families and schools; considers intersections between schools and the communities they serve; and highlights several key recommendations that address the needs of the various stakeholders.

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COVID-19 Special Investigation Report: K-12 Education in New England

1. Introduction

New England’s K-12 schools are critical anchor institutions that serve some of the most important functions in our society. In addition to providing opportunities for academic and social-emotional growth, our schools are critical for the preparation of the future labor force and the economic stability of the nation. With the onset of COVID-19 and the subsequent school closures that followed, many children lost access to educational resources. Closures had a ripple effect on other sectors as schools grappled with how to maintain access to free and reduced lunch, health services, as well as mental health and social-emotional support systems for students and their families. The COVID-19 disruption was a sobering reminder that school’s most public function, teaching and learning, is only one of the many pillars of the educational system.

Closing school buildings was associated with many social and economic costs. Some of these costs are easily identifiable, while others remain unclear or unknown. Reopening schools is also associated with social and economic costs. Both the loss of in-person schooling and the reintroduction of physical schooling are complicated due to education’s interconnectedness with other sectors. Reopening requires practical innovations that recognize the diverse needs of different districts throughout the New England region, the various sectors that fund and support them, as well as creative approaches to reimagine the educational ecosystem. The success of the K-12 educational sector will have both short and long-term implications for the future of the region and the nation.

Reopening requires practical innovations that recognize the diverse needs of different districts.

2. Overview of the Educational Landscape in New England

The public education system in New England is expansive. In early 2020 there were approximately 948,828 students enrolled in Massachusetts public schools.¹ Connecticut public schools served 528,000 students during the same time.² In 2019, Rhode Island 143,557 public school students were enrolled.³ During the 2018-19 school year, New Hampshire had 117,369 students enrolled in public schools.⁴ Vermont had 77,078 public school students during the 2015-16 academic year.⁵

In New England, a majority of K-12 students attended public schools in 2019, however New England states had public school enrollments lower than the national average. In Massachusetts, the rate of overall public-school attendance was 73%; Rhode Island's rate was 74%; New Hampshire's rate was 78%; Vermont's rate was 79%; Connecticut's rate was 80%; and Maine's rate was 82%.⁶ The percentage of all public-school students enrolled in public charter schools in 2017 was 6% in Rhode Island, 2% in New Hampshire, 1% in Maine, 5% in Massachusetts, 2% in Connecticut, and less than 1% in Vermont.⁷

Table 1

State	K-8 Enrollment (%)		High School Enrollment (%)	
	Public	Private	Public	Private
Connecticut	91	9	89	11
Maine	90	10	88	12
Massachusetts	91	9	88	12
New Hampshire	90	10	88	12
Rhode Island	88	12	86	14
Vermont	91	9	89	11

Note. This chart is adapted from data from the 2019 American Community Survey.

Per-student school spending varies widely across the New England states, and is intrinsically linked to the economic viability of the residential and commercial tax base of local districts (see table 2). In addition to local taxes, local school districts in New England depend heavily on state funding to cover operations, with less than 10% of educational funding coming from the federal government.⁸ With the reduction in state-level tax revenue during the pandemic, educational funding across New England is in crisis. The situation is further exacerbated by increased expenses, such as health care costs and Unemployment Insurance (UI), associated with the pandemic.

...educational funding across New England is in crisis.

Table 2

State	2020 Per-pupil Educational Expenditure
Connecticut	\$19,322
Maine	\$13,690
Massachusetts	\$16,197
New Hampshire	\$15,683
Rhode Island	\$15,943
Vermont	\$18,290

Note. Table adapted from World Population Review: <https://worldpopulationreview.com/state-rankings/per-pupil-spending-by-state>

Rhode Island is experiencing a \$600 million-dollar gap in their state budget. At least 489 educators from 17 districts have been told they may be laid off due to potential budget cuts.⁹ Similarly, Vermont is also facing delays in creating and voting on new budgets due to economic conditions. With budgets still undecided, many districts have only sent "intent to employ" letters to teachers rather than actual contracts.¹⁰ As districts throughout the New England region seek to close budget gaps, they are forced to consider eliminating positions and laying off staff.

In response to COVID-19 related budget shortfalls and potential teacher layoffs, some local districts are evaluating the potential of tax overrides, which have historically been used to generate more school funding and to close budget gaps. Given that such a large percentage of the school budget is funded by local property taxes, these approaches exacerbate inequities in education funding between affluent and lower income districts. Current research finds that towns that have attempted at least one override vote in the past tend to have higher incomes per capita, smaller populations, and lower property tax rates. One of the largest issues with the override process is that districts who need the most additional services are those who have low incomes and, thus, are less likely to pass overrides.¹¹

...some local districts are evaluating the potential of tax overrides...

Many New England schools are buttressed by a robust non-profit and social services sector. These organizations work collaboratively with schools to provide critical functions, including needed academic support, after-school care, and enrichment opportunities, while helping families access essential needs such as housing and food. COVID-19 disruptions are impacting the funding and operations of these important non-profit organizations, who have also seen their revenue fall. Strains on the nonprofit sector are prohibiting them from providing needed resources to K-12 families, compounding the economic gaps facing school districts.

Many New England schools are buttressed by a robust non-profit and social services sector.

3. Implications for Teaching and Learning

The abrupt shift to online learning expanded existing inequalities within and between school districts throughout New England. For students from lower-income families and from less wealthy zip codes, remote education illuminated the ways that educational systems, programs and practices support and enrich daily life. As schools closed, so did educational resources and supports for all children, including students in special education programs. In some cases, teaching and learning ceased or was greatly reduced, as challenges to remote learning emerged.

3.1 Student Learning Losses

The pandemic has revealed and exacerbated vast inequities in the quality of educational resources available to elementary and secondary students. Recent reports raised concerns over learning losses for K-12 students associated with the transition from classroom to remote schooling, and these losses may be far greater for students from low-income families or zip codes, students of color, and students who receive special education services. Estimates of learning losses in reading and math range from a third of expected growth to half of expected growth, respectively.¹²

An analysis of summer learning losses serves as a proxy to consider the impacts of COVID-19 on school closures. In addition, research on student absenteeism and lack of schooling due to natural disasters informs impacts on school achievement. Research by the Brookings Institute¹³ suggested that a “COVID slide” may impact substantial numbers of students. In both math and reading, considerable learning losses on 4th grade and 6th grade assessments were reported. These findings suggest that students who begin schooling in the fall of 2020 may start at very different places, socially, emotionally and academically.

Educational inequities have deep economic impacts for individual students, families, and communities.

Educational inequities have deep economic impacts for individual students, families, and communities. The economic impact of past achievement gaps (as measured by standardized test scores) between White students and their counterparts of color, as well as high-income and their low-income peers of color, have been estimated between \$310 to \$670 billion in lost productivity.¹⁴ McKinsey & Company estimated several scenarios capturing student learning losses due to the pandemic, considering different iterations

of the course of the virus, as well as student access to high quality education. These learning loss impacts, and projected economic impacts are delineated for all students and disaggregated by both ethno-racial identity and socioeconomic status (see Figures 1 and 2).

Figure 1

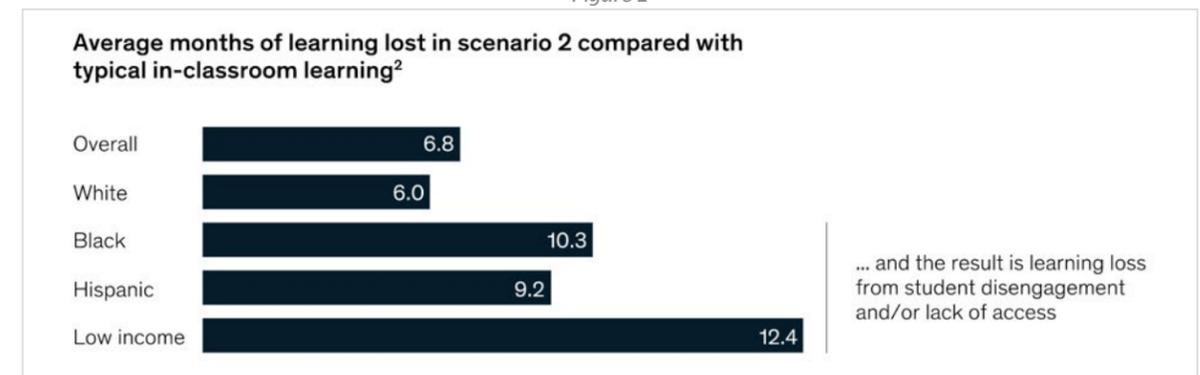
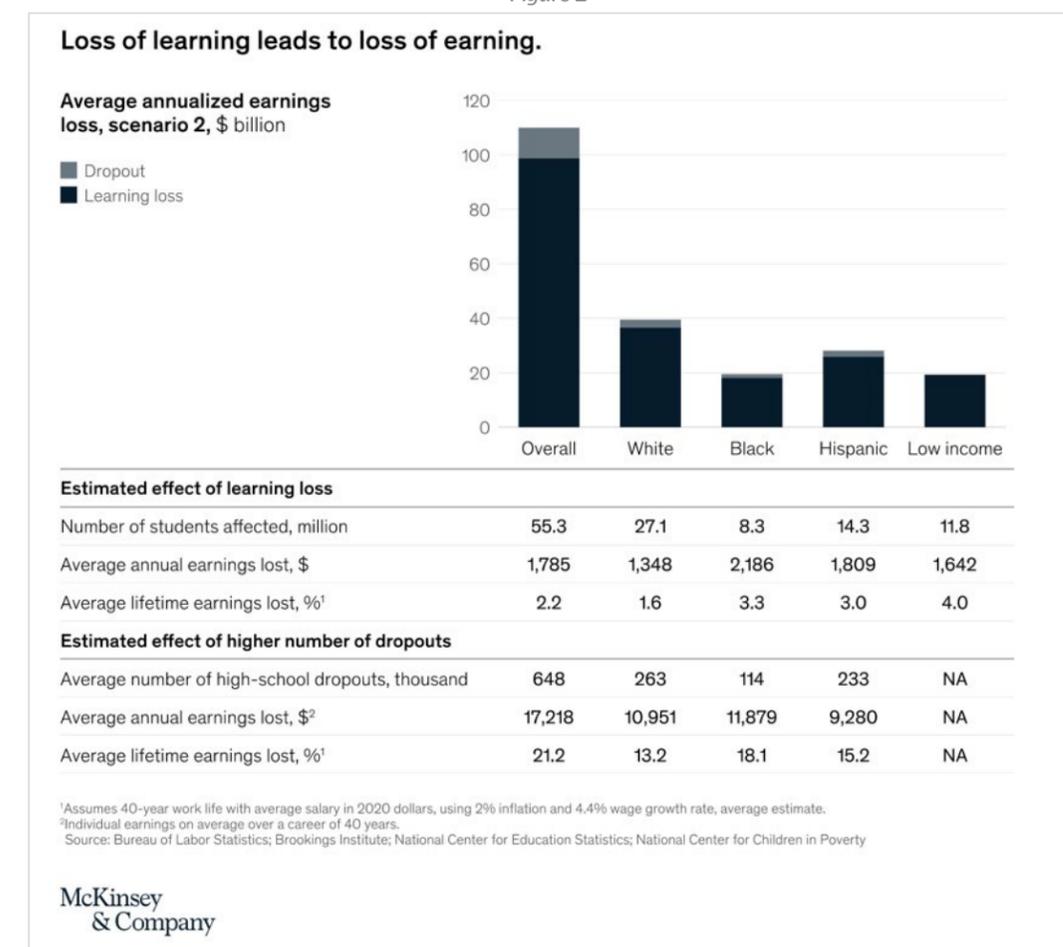


Figure 2



Sensitive Periods of Development

While all students are vulnerable to the effects of learning losses, both younger students and older students have unique risks. For example, ages 2-7 are considered to be sensitive periods of rapid development¹⁵, as is the adolescent period (ages 13-18). Impacts in the early childhood period can have both short and

...both younger students and older students have unique risks.

long-term consequences.¹⁶ In early childhood, school is often the place where early learning environments can nurture both students’ academic and social functioning, through play-based learning and building relationships with teachers and peers. This early childhood environment shapes the foundation for later academic successes, such as reading proficiency. In primary education, early reading proficiency is an indicator of high school completion. Students who are not reading proficiently by the end of third grade are more likely to drop out of high school than students who meet grade level reading standards.¹⁷ Missing educational and socialization opportunities for younger students can impact their learning outcomes, which in turn impacts economic self-sufficiency.

For older students, learning losses and a lack of grade level proficiency may also increase the likelihood of high school dropout. Students who dropout of high school have unique barriers to economic self-sufficiency. For example, there is a direct relationship between years of school completed and salary. In 2018, the median earnings of those with a high school degree was \$34,900 compared with individuals with a bachelor’s degree (\$54,700) or those with a master’s degree or higher (\$65,000). Individuals without a high school degree had median annual earnings of \$27,900.¹⁸ Compared with high school graduates, individuals who do not complete high school make fewer tax contributions, have higher rates of Medicaid, Medicare and welfare usage, and are more likely to have higher rates of criminal activity. These expenditures have been estimates at approximately \$272,000.¹⁹ In addition, during economic downturns, workers with higher levels of education were more likely than workers with lower levels of education to retain their employment.²⁰

3.2 Educational Non-Compliance

Student attendance and school engagement is a critical component of successful school completion. A 2016 report by the U.S. Department of Education stated that about 1 in every 6 students is chronically absent from school.²¹ Students who are chronically absent, missing at least 15 school days in a year are at greater risk of educational loss and drop out. Since school closures began in March 2020, compliance with remote learning models further exacerbated issues of attendance. An analysis of online math coursework from January 2020 to June 2020 showed an almost 70% reduction in student activity.²² These reductions were most significant for students living in low-income zip codes and least pronounced for students in high-income zip codes. Additional inequalities have been examined by race/ethnicity and geography, with Black and Hispanic/Latino/a/x students facing greater learning losses than White students. Students in rural communities have less access to online video instruction, which has contributed to a lack of active remote learning.

The Boston Globe reported distinct public education models offered different levels of student engagement between neighboring Rhode Island and Massachusetts.²³ Massachusetts, which offered a higher level of local control to school districts, had far lower rates of student engagement in remote learning. The state of Rhode Island reported student compliance rates around 90%, while Boston struggled with about 50% of students logging in consistently to remote school meetings. The states also differed on educational pedagogy, as both states reflected on the academic and social-emotional needs of their student populations. In Rhode Island the philosophy was that structure and academic standards would be necessary to provide a sense of normalcy. In Massachusetts, the focus was on concerns over disparate access to technology and capacity to engage in education during a pandemic. In Massachusetts, the teaching philosophy focused on reviewing and maintaining existing learning, rather than focus on the teaching of new curriculum.

When we look not only state by state, but at variations by rural, urban, and suburban communities, we also see disparities. A national analysis examined a representative sample of 477 school districts and found that students in city schools had the strongest access to teacher instruction and progress monitoring compared to their peers in rural and suburban schools (see Figure 3).²⁴



Note. Figure 3 taken from: https://www.crpe.org/sites/default/files/final_national_sample_brief_2020.pdf (“Gaps in Expectations for Instruction and Monitoring Progress by Region”).

Educational compliance is impacted by resource distribution...

Educational compliance is impacted by resource distribution as well. Throughout New England, affluent districts were more likely than high poverty districts to require live synchronous teaching and learning opportunities. A majority of the districts in the region did not require real-time classroom instruction. On average, only 21.8% of the schools required live teaching. For more affluent schools, the average rate of live teaching was 28.8% compared to 14.5% of schools with high rates of free and reduced lunch.

Access to Internet and Technology

As schools closed, student learning began to rely upon online and remote learning tools. The foundation of remote learning is access to computers and the internet. Students without stable internet and access to computers were not able to view assignments, teaching materials, or easily communicate with teachers and peers. The “digital divide” among students with and without reliable access to a computer and the internet is a problem throughout the New England region.

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While most New England communities have access to broadband internet, not all households have internet. According the Federal Communications Commission, broadband refers to high-speed internet access that is faster than dial-up access. Broadband includes several high-speed transmission technologies such as: Digital Subscriber Line, Cable Modem, Fiber, Wireless, and Satellite Broadband.²⁵

A national study of internet access for children ages 3-18 found that 88% of families had internet access via a computer, while an additional 8% had internet access through a smartphone.²⁶ Approximately 6% of families with school aged children did not have home internet. These barriers impact the ease and access to educational platforms and virtual and online learning and communication. Estimates of broadband coverage for New England are found in Table 3.

Table 3. New England Broadband Coverage

State	Terrestrial Broadband Coverage ²⁷	State Broadband Ranking
Connecticut	98.3%	10th
Maine	86.6%	43rd
Massachusetts	95.9%	9th
New Hampshire	89.6%	23rd
Rhode Island	96.2%	4th
Vermont	79.0%	47th

In addition to disparate access to internet, not all students and families have access to a computer. Computer access varies among states, by density (urban, suburban, rural) and with other socio-

Computer access varies among states...

demographic factors. Nationally, gaps in access to computers and the internet is correlated to family income, parent education, and race/ethnicity.²⁸ For families with the highest family incomes, 99% reported internet use compared with 87% of families in the lowest income quartile. Parents with a bachelor’s degree or higher had greater access than parents who had less than a high school diploma (99% compared with 82%). Asian families had the

highest reported rates while American Indian/Alaska Native had the lowest (98% versus 80%). Families who reported two or more races and white families reported the high rates of internet access (97%, 96% respectively) compared to Hispanic families (91%), Black families (90%) and Pacific Islander families (87%).

State Facts and Statistics

- **Connecticut:** Nearly 10% of students lack access to a computer and 6% lack internet access. A new project led by the Connecticut Conference of Municipalities aims to create a plan studying where high-speed internet access and computers are most needed. They aim to release a report with recommendations and funding by August.²⁹
- **Maine:** Federal funds are supporting 24,000 students.³⁰ For about 13% of public-school students in the state, these funds will provide connections to the internet through a \$9.3 million grant to fund Wi-Fi hotspots, laptops and tablet computers.
- **Massachusetts:** It was projected that about 15% of students lacked personal computers.³¹ Projected costs to remediate technological state gaps were projected at about \$50 million.³²
- **New Hampshire:** About 1,700 Chromebooks were distributed in Nashua after the Governor instituted the state’s stay at home order.
- **Rhode Island:** Early planning for remote teaching in late February led to early action on the dissemination of student laptops and Wi-Fi.
- **Vermont:** Districts have been collaborating with companies and organizations to expand access to internet and computers.³³

Unfortunately, access to basic technology and the internet is only one barrier to educational access. Additionally, some families may also lack the physical space to ensure their students have a space to work quietly and complete online and remote learning activities. For children living in smaller homes and apartments, some children may not have a clear space to work on daily activities and homework

assignments. Some families with multiple children may have one computer that must be shared by family members, creating barriers to school engagement.

Learning Management Systems

The pivot to remote learning shifted the teaching environment and educational learning platform leaving many teachers to quickly learn how to transfer their teaching and learning goals to a virtual environment. While some teachers had previous access and training in online modalities such as Canvas and Google classroom, many teachers had little or no training in these domains. Scaling up remote training happened quickly, within hours, days or weeks of school closures. And while these quick transitions may have offered some form of remote teaching and learning, most online educators require significantly more time and training to develop high quality educational materials. One study conducted in March of 2020³⁴ found that 43% of teachers were making decisions about which online tools to utilize during the school closures, almost 57% reported they did not feel prepared to move classes online, and more than half of teachers reported using no learning management system (LMS) to organize their teaching and student learning.

Different school districts in New England had different levels of investment in LMS. The costs of learning management software vary, and LMS systems can be delivered to individual schools, districts or to entire states. Prices can be estimated based on per student costs, per use costs, and license fees. Per student costs often decline with greater numbers of students. Per use costs may depend on the volume of course modules, courses offered, or number of students enrolled per class. Licensing fees may be for one-time access to the LMS or for LMS access over a period of time. In 2016, some estimates of licensing LMS fees ranged from less than \$500 to \$20,000 annually.³⁵

Educational Accountability and Testing

One way to gauge student learning is through accountability measures, such as testing. During the spring of 2020, many schools initiated optional learning goals and expectations, as students transitioned from school-based to home-based learning. Local subject testing, state standardized tests, and national advanced placement and college boards were all impacted. The current waivers of state testing have provided opportunities and challenges as states consider how best to continue to assess student learning, learning gaps, and mechanisms for remediation of learning losses. The costs of new assessments may match existing testing costs or exceed them, as new testing models and dissemination strategies are designed, evaluated and implemented.

Estimates of the total costs of standardized testing prior to COVID-19 were approximately \$1.7 billion. In Massachusetts, state testing for K-12 in 2019 was estimated at approximately \$33 million.³⁶ In Connecticut the Smarter Balanced Assessment Consortium (SBAC) estimated costs at approximately \$20 million to develop and implement. A breakdown of some state costs associated with testing is below (see table 4).

Table 4. Estimates of State Testing Spending

State	Years	Yearly Amount	Cost per student
Connecticut	--	--	--
Maine	2010	\$2,490,420	\$25
Massachusetts	2007-2012	\$32,469,904	\$64
New Hampshire	2010-2012	\$3,168,565	\$30
Rhode Island	2007-2012	\$2,917,997	\$37
Vermont	2007-2012	\$1,798,897	\$38

Note. Table shortened/adapted from original: Chingos, M. M. (2012). *Strength in numbers, State spending on K-12 assessment systems*. Washington, D.C.: Brown Center on Education Policy at Brookings. No data was available for CT.

The removal of state tests poses additional challenges, as standardized testing has been the historic metric to determine the distribution of school resources. Using data from previous years may be possible, but may underestimate school and district needs. In addition, there are legal ramifications of continued testing waivers, such as a lack of compliance with state law, as each state will need to consider the impacts of waivers and the methods necessary to maintain alternative accountability measures.

Over the last several years, the very use of standardized testing has been critiqued, and concerns about the validity of the tests as an indicator of academic ability have been raised. Additionally, concerns about the total costs of state testing has led to increased advocacy to reconsider the use of state tests. Critics of the tests have cited research that links performance on standardized tests to factors such as race, measures of social class, and levels of parent education. In the spring of 2020, most schools in New England reversed decades of precedent and provided waivers to cancel state tests.³⁷

Special Education Services and Supports

About 7 million children ages 3 to 21 receive special education services in the US. The Individuals with Disabilities in Education Act (IDEA) costs approximately \$12 billion. This is estimated to cover about 14% of the additional costs associated with special education funding.³⁸ Prior to the Covid-19 pandemic, students received services in school through an Individual Education Plan (IEP) or 504 accommodation plans. These mechanisms provided guidance to students, teachers and families about the programs and interventions required to maximize learning outcomes through supportive services in schools.

School districts throughout New England had diverse approaches to shifting educational practices online. One concern was over equity in teaching and learning for children who receive special educational services.

School districts throughout New England had diverse approaches to shifting educational practices online.

While some schools quickly shifted to remote teaching, others paused to consider how educational materials could be equitably delivered to all students regardless of their participation in special education programs. A lack of specific guidance on best practice meant that there was a range of programming within and between states. In some cases, lags in programming meant that no new educational content was being delivered to students. As schools began to offer educational programming, districts were then required to “make every effort” to provide special

education to students with disabilities.³⁹

Some disabilities may require additional learning support such as increased teachers and teaching aids, specialized materials, and technological resources. Students with visual or hearing impairments may have difficulty accessing printed materials, books in braille, or other communication supports such as access to American Sign Language translators as they rely on computers while learning remotely. Consideration of technology that aligns with diverse learning needs is essential for students who will not be able to quickly return to school and may need to rely on remote learning tools.

Consideration of technology that aligns with diverse learning needs is essential...

Initial feedback on school responsiveness to students with disabilities highlighted disparities within and between schools and states on student experience. Parents of

students with disabilities are more likely to report lower rates of support and a reduction in educational services, as schools shifted online. Parents of students with disabilities also report lower rates of remote learning and increased concerns over mental health compared to parents of students without IEPs. As schools develop and implement best practices, they must weigh individual student’s needs and consider how to address single and complex educational interventions that span from speech, physical and occupational therapy to counseling, behavioral, medical and health services.⁴⁰ The costs associated with technology dissemination and teacher’s time for individualized learning needs must be included in holistic educational cost estimates.

3.3 Staffing Schools

Tension surrounding staffing of schools has challenged unions and local leadership across the country.⁴¹ COVID-19 has required teachers and staff to work in new and different ways. Activities and considerations such as online curricula development, contact hours with students, assessment, duration of synchronous activities, and participation in administrative and student meetings are straining educators and staff.

Tension surrounding staffing of schools has challenged unions and local leadership across the country. . .

At the same time, teachers are facing employment uncertainty.⁴² In April 2020, about 468,000 public school jobs were lost. This compounds staffing issues that have not been remediated since the job losses associated with the Great Recession (see Figure 4). In the fall of 2019, before COVID-19, schools were already below necessary staffing levels. Estimates suggest that 300,000 additional public-school teachers and staff were needed to meet public-school enrollment needs.

In addition to work demands, teachers and school staff have reasonable concerns related to their health and safety related to COVID-19. Many of the teachers working in the New England region are at high risk by virtue of their age alone, as around a quarter of teachers are over 55 years of age.⁴³ Furthermore, these risk factors could be compounded by the presence of comorbidities including diabetes, asthma, autoimmune disorders or obesity. Teachers and staff who are pregnant, also have unique considerations as scientists are still determining the impacts of COVID-19 in utero. Maintaining home-work life balance is an additional consideration as many teachers have caregiving responsibilities for their own children or family members.

THE TEACHER GAP

Public K–12 education employment has collapsed

Local public education employment and employment needed to keep up with enrollment, 2003–2020

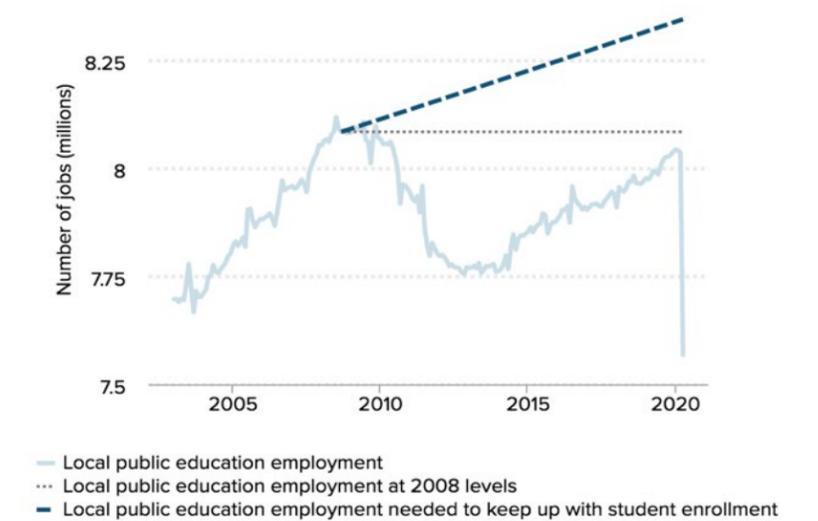


Chart Data

Source: EPI analysis of data from the Current Employment Statistics public data series and U.S. Department of Education, National Center for Education Statistics.

Additional consideration about the childcare crisis can be found with Modestino’s Special Investigation Report (see GRI Whitepaper Series 2020-5).

As school administrators devise staffing plans it is clear that social distancing requirements will likely mean the need for more staff. Concurrently, some teachers may elect to take leaves due to medical considerations, and a portion of the teaching population may retire. The loss of highly experienced teachers could exasperate an already strained labor force. According to the Department of Education, the only state in New England not experiencing a teacher shortage is New Hampshire.⁴⁴

...social distancing requirements will likely mean the need for more staff.

4. Intersecting Sectors

The education sector is reliant on many other community and social services that support student outcomes. COVID-19 highlighted the importance of school buildings as hubs for access to free and reduced lunch, breakfast, and other food related interventions. As schools closed, many students also lost access to health services, mental health supports, and other social-emotional support systems. School’s most public function, teaching and learning, became only one of the many fundamental aspects of the educational system. Below we consider a few intersecting sectors that have been impacted by the current pandemic, as these sectors have both social, academic, and economic impacts on students, families, communities, and the broader economy.

4.1 Access to Food & Nutrition⁴⁵

Nationwide, in 2018, approximately 30-35 million children received food from the U.S. Department of Agriculture (USDA) National School Lunch Program.⁴⁶ The cost of this program in FY 2018 was almost \$14 billion. The New England Journal of Medicine⁴⁷ outlined both long- and short-term impacts of missed meals, such as fatigue and reduced immune response, as well as developmental, psychological, and physical risks. To deter short and long-term psychological and physical risks associated with nutritional loss, local school districts have transitioned food service programming to the USDA’s summer programs to offer flexibility in meeting community needs. While the mission of the summer program is to support nutritional needs of vulnerable children, the program has not historically reached all eligible families. States and municipalities are quickly seeking alternative methods and delivery systems, while trying to balance nutritional standards, accessibility, and public health standards to reduce the spread of COVID-19. Federal legislation has also included allowances for the use of flexible spending for SNAP, however there are children who may not qualify or receive these additional funds due to eligibility issues, or parental concerns over utilizing these benefits. For example, the utilization of public benefits such as SNAP may impact pathway programs to citizenship for immigrant families under changes to the “public charge” rule.

All New England states received federal approval to initiate the Pandemic EBT (P-EBT) program.⁴⁸ For example, in Massachusetts that would provide \$5.70 per student per day in food costs to families to supplement existing “grab and go” food support programs. In Vermont, households with eligible children received a benefit of \$387.60 for each child. Maine’s Department of Education also extended its USDA’s Summer Food Program Services (SFPS). This initiative became a joint effort between almost 185 school districts and community partners to continue providing meals to students in need. This program allows children to pick-up meals at specific locations while also utilizing bus routes to deliver meals.

Typically, SPFS is only offered in school districts where 50% or more students receive free and reduced lunch. However, through community and district partnerships, accessibility to these services has been expanded to nearly all school districts. Rhode Island is currently providing “Grab and Go” meals in districts throughout the state. While some sites only serve enrolled students, most districts are providing free

meals to anyone under the age of 18. New Hampshire is also expanding efforts to ensure that children have access to food. New Hampshire’s “Got Lunch! Program”, which previously served the 27% of students who qualified for free and reduced lunch, has now been adjusted to serve even more students and families. States are also relying on the local philanthropic efforts and nonprofit organizations to better meet the needs of hungry students.

4.2 Access to Health and Mental Health Services

Many schools serve to provide and/or refer students for health and mental health care. With the pandemic crisis, schools should anticipate an increased demand for such services in order to prevent longer term health problems. This will be especially true for children or families with existing health or mental health impairments and/or who are immunocompromised. Students with health impairments face many barriers to education, including higher rates of absenteeism and less focus and attention on school tasks. Health impairments, such as undiagnosed or untreated vision or hearing impairments, dental pain, asthma or other emotional or behavioral disorders can reduce a student’s academic achievement.⁴⁹ Chronic health problems such as childhood onset cancer, heart disease or epilepsy have been associated with long term negative outcomes such as lower rates of college completion, lower levels of employment, lower overall income, and higher rates of receiving public assistance.⁵⁰

The rates of depression and anxiety are likely to increase among children and adolescents during and after the pandemic.⁵¹ Social isolation has been identified as a significant public health issue associated with reduced or eliminated social interactions with teachers and peers. Several studies have linked actual and perceived social isolation with an increased risk for early mortality.⁵² Social isolation increases the risk for mental health challenges among primary and secondary school children.⁵³

Social isolation increases the risk for mental health challenges. . .

According to a recent poll, nearly three in ten (29%) parents say their child is "already experiencing harm" to their emotional or mental health because of social distancing and closure.⁵⁴ Furthermore, the poll indicates that stressors are disproportionately experienced among children from families with lower SES. For example, parents with less than a college degree (33%) are more likely than those with a college degree or higher (24%) to say their child's emotional or mental health is already compromised. A survey of youth ages 13-19 and reported several key findings⁵⁵:

- Thirty percent of young people say they more frequently feel unhappy or depressed, and nearly as many say they are much more concerned than usual about having their basic needs met.
- More than 1 in 4 reported an increase in lost sleep due to worry, feeling unhappy/depressed, under strain or experiencing a loss of confidence in themselves.
- Young people living in cities were 15% more likely to report poorer health indicators than those in rural areas. Asian and Latinx youth were significantly more likely to report poorer health than Black or White youth.
- Families would benefit from immediate and ongoing support for basic needs, physical and mental health, and learning opportunities.

4.3 Consideration of Vulnerable Students

Child Welfare

School personnel are part of a network of mandated reporters of child maltreatment, including child abuse and neglect. Teachers and other school staff develop relationships with children, see them daily, and respond when children exhibit physical or emotional symptoms associated with child abuse or neglect. Child maltreatment is associated with significant social and economic costs.⁵⁶ Children who experience maltreatment are more likely to drop out of high school, engage in crime, produce lower overall lifetime earnings, and have a greater reliance on social welfare services. Based on a 2015 analysis, researchers estimated the per victim economic cost of child maltreatment to be over \$314,000.⁵⁷

A key mediator of those effects is prevention and early intervention efforts. Identification of child maltreatment is paramount to prevent future maltreatment and remediate effects. Identification of child maltreatment can happen in many ways, but schools have historically been one key touchpoint for students at risk of maltreatment. Teachers and other school professionals are mandated reporters of child abuse and neglect. Mandated reporters are legally bound to report suspicions of abuse or neglect.

As children left schools and remained home, many parts of the country experienced reductions in reports of child maltreatment, even as family stress was rising. Researchers estimated that the cause of the reduction was most likely not a function of actual reductions in maltreatment, but rather a lack of opportunity for mandated reporting.⁵⁸

Students Experiencing Homelessness

As schools consider how to engage students and families and maintain educational progress, homeless youth and their families need to receive additional support. About 1.5 million students in public schools have been identified as experiencing homeless. These children may face additional barriers to successful school completion, as they are more likely to be facing daily challenges such as finding adequate housing, food, and health care. Homeless youth and families may be at higher risk for staying in unsafe housing, and may experience elevated levels of stress and exposure to risk. Like other students from low-income families, students experiencing homelessness may also lack the materials and resources needed to complete school tasks, such as computers, internet access or basic school supplies. Concerns over homelessness and housing insecurity for low- and moderate-income families are increasing due to Covid-19. One study from spring 2020 highlighted concerns over housing security and evictions, especially for Hispanic and Latinx families.⁵⁹ State estimates of student homelessness and funding for New England are below.

About 1.5 million students in public schools have been identified as experiencing homeless.

Table 5

State	Students Experiencing Homelessness	McKiney-Vento fiscal year funding (\$)
CT	5,015	639,329
ME	2,443	260,890
MA	23,601	1,199,220
NH	3,982	210,745
VT	1,097	192,500

Note. All estimates are for FY 2017-18 except the number of homeless students for VT which used SY 2016-17 available data. Table adapted from Federal Data Summary School Years 2015-16 through 2017-18. Educational for Homeless Children and Youth. National Center for Homeless Education. See: <https://nche.ed.gov/wp-content/uploads/2020/01/Federal-Data-Summary-SY-15.16-to-17.18-Published-1.30.2020.pdf>

Undocumented and Newcomer Students

The New England Journal of Medicine highlighted concerns for undocumented immigrants and the prevention and treatment of COVID-19.⁶⁰ Recent legislation regarding the “public charge” rule, which limits legal pathways to citizenship for undocumented immigrants who had previously utilized social services, has created additional barriers for immigrant children and their families to access services. These and other immigration policies, such as a lack of access to health care, have meant that families may be limiting their access to both medical and social services to support family well-being.

Undocumented families are especially vulnerable to not receiving vital social services such as access to food. School lunch programs, which may have offered some protections may not be available for undocumented families who disenrolled in food programs such as the Supplemental Nutrition Assistance Program (SNAP). Food insecurity is associated with both social and economic costs, as food security is associated both with academic achievement, labor force engagement, health and mental wellbeing. During the last recession in 2009, every \$1 increase in SNAP benefits was associated with a \$1.70 increase in economic activity.⁶¹

Food insecurity is associated with both social and economic costs. . .

LGBTQ+ Students

Researchers discussed their concerns over the risks and challenges facing the LGBTQ+ population, given the COVID-19 pandemic.⁶² These concerns were highlighted specifically for LGBTQ+ youth who live at home. For some youth, the home environment may be supportive, however, concerns about the safety and welfare of LGBTQ+ were questioned, especially for youth in families where their sexuality was not known or supported. In addition to health and safety concerns, there are economic implications for LGBTQ+ youth who are rejected by families or experience significant family conflict.⁶³ It is critical to ensure that LGBTQ+ youth have access to social, emotional, and health care supports, especially those who had access to safe spaces at school through organizations like Gay-Straight Alliances (GSAs).

5. Additional School Related Operational Consideration

In addition to the many academic, physical, and socio-emotional needs of students associated with the closing of schools there are several operational considerations that have economic implications.

5.1 Transportation and School Arrival

For many K-12 students throughout New England the school day starts with the bus. Eighty percent of Maine's students utilize the public school bus system.⁶⁴ In Connecticut more than 300,000 students use public school buses daily.⁶⁵ Throughout the Greater Boston area, a blended system of public transportation, district buses, and private contracts transport students to schools. Additionally, some students are transported to districts outside of their immediate area as part of the METCO program.⁶⁶

Public transportation has been impacted by COVID-19. Revenues generated by ridership were down dramatically on the MBTA in Boston. Many individuals, including public and private school students depend on public transportation exclusively. Modifications to operations including frequency and availability of certain routes could impact student school arrivals and departures.

Public transportation has been impacted by COVID-19.

5.2 Enhancing School Safety: Measures to Reduce the Spread of COVID-19

The United States Government Accountability Office estimated that 41% of the nation’s public school districts need to update or replace heating, ventilation, and air conditioning (HVAC) systems.⁶⁷ Researchers are currently evaluating the risk of COVID-19 spread related to the quality of air flow and ventilation of indoor spaces.⁶⁸ In addition to air quality, policymakers are reviewing costs associated with providing other protections such as Personal Protection Equipment (PPE). Officials in Maine are estimating that costs for sufficient PPE for staff and students could cost \$27 million.⁶⁹ Districts in Massachusetts have recently been given cost estimates from the state so they can start planning for the fall. One suburban district was told to plan for up to \$65,000 per week to cover the costs of PPE.⁷⁰ Some states have already established that these costs could be incurred by families, and that schools will be expected to subsidize as needed. Costs associated with meeting the needs for social distancing are likely to be high as well, as additional staff will be necessary to provide supervision to students in order to adhere to recommended measures. Additional costs associated with sanitizing schools, medical products, and increased staffing will also need to be anticipated when estimating costs to districts.

6. Recommended Courses of Action

As policymakers review and respond to the impacts of COVID-19 on the educational sector, it is vital that the needs of all children and families are considered. However, inequities in access to educational resources have been exacerbated for historically marginalized groups such as children living near or below the poverty line, students experiencing homelessness, students of color, undocumented and newcomer students, LGBTQ+ students, students who experience mental health impairments, students with disabilities, and students at risk for maltreatment. In addressing the recommendations below, policymakers should consider both universal impacts and specific impacts for racial, economic and social justice.

...policymakers should consider the impacts of early investments on both short-term and long-term outcomes.

When looking at the economic and social costs, policymakers should consider the impacts of early investments on both short-term and long-term outcomes. Evidence from a host of intervention programs have shown the benefits of high quality educational and social programs on individual, family, and community well-being are associated with economic savings.⁷¹ While the initial economic investments will most likely be quite large, prevention efforts are more likely to be associated

with cost savings when compared to future remediation and treatment programs. The impact of public spending, despite economic recessions, shows that states that maintained and enhanced public spending during the Great Recession, had faster recoveries.⁷² The following section illuminates the resources and investments necessary to build a viable K-12 educational sector as it evolves during and after this historic pandemic.

6.1 Implications for Teaching and Learning

Student Learning Supports

School districts face myriad challenges to address COVID-19, both to remediate existing learning losses and prevent future learning loss. School funding must address existing and expanding inequalities, and ensure that each child has access to the tools, materials, and resources necessary to succeed in school. Policymakers and districts should consider the following:

- Support funding for resources, training, and staff who can support differentiated learning. While supporting unique learning needs of students is central to schools' functions pre-COVID, they are now also going to have to address the learning loss resulting from "COVID slide".
- Support funding for academic remediation in summer school and out-of-school time programming to address the "COVID slide."

- Disaggregate data and invest resources to mitigate the unique barriers faced by historically marginalized populations, such as students with disabilities, students from low-income families and zip codes, and students of color.
- Focus funding on high-risk education groups - those who are developmentally sensitive such as early childhood or early primary school, as well as students nearing graduation who may be at risk for dropping out.
- Repurpose funding allocated for standardized testing. Consider the role of state tests as an appropriate measure of school accountability. As districts reflect on costs of the pandemic on school budgets, state tests may become one of many cost savings that schools should consider as they seek to balance economic and educational needs.

Fostering Educational Compliance

Many schools are being asked to devise multiple proposals in preparation for the fall of 2020. It is possible that schools will start with one model, and shift to another due to public health realities. There are three predominate models being considered by districts for reopening schools:

- 1) Fully in-person: This model mirrors in-school learning prior to the COVID-19 pandemic.
- 2) Hybrid approaches: This approach is a blend of in-person and remote learning and could include a rotation of cohorts in-school and home.
- 3) Fully remote/online: All students and teachers would engage in teaching and learning remotely, using virtual teaching and learning tools.

Each of these models will present their own benefits and challenges. Hybrid and online learning will require different approaches and resources than traditional in-person practices including the need for high speed internet access, software and hardware. Policymakers and districts should consider the following as they may need to modify traditional in-person teaching and learning practices:

- Develop plans at school and district levels to address student non-compliance. Consider school and community support to help track and provide outreach to children and families absent from school as teachers will be unable to fulfill these tasks alone given new demands on their instructional roles. Communicate these practices and policies to students and families to decrease non-compliance.
- Support the Emergency Broadband Connections Act of 2020 which aims to expand access to reliable, quality broadband connection to low-income households.
- Fund the utilization of Single Sign On (SSO) learning platforms to facilitate streamlined academic management for teachers, students and families.
- Centralize decisions at the state level in order to lower overall per student costs and support less well-resourced school communities. While state level decisions to implement specific Learning Management Software may limit or remove individual school or district and teacher level decision making, this is economically advantageous for overall budgets and most high-need districts.
- Support funding for needed laptops or tablets to students whose families lack access.
- Provide communication and family engagement resources in schools. Examples could include a paid professional position or a parent liaison model, where members of the school community are trained and provided with some compensation for bridging communication between home and school. These models can be particularly useful in multilingual settings.

- Fund mechanisms that will allow supplemental materials (non-digital) to and from home to ensure that learning materials are reaching students.

Teaching and Staffing Supports

Teacher and staffing supports are vital to the delivery of high-quality education to students in New England. Supporting teachers and providing them with the needed resources will be critical to assuring learning continuity, while promoting job retention. Policymakers and districts should consider the following:

- Invest in sufficient staffing and expand staffing in order to meet the needs of student learning, social distancing, union negotiations, and those of at-risk staff and students.
- Anticipate and account for teacher retainment and issues of retirement, especially for highly experienced teachers.
- Invest in a robust substitute teacher pool that is trained and available for districts.
- Provide sufficient funding to ensure adequate family and medical leave coverage. Review school and district sick and medical leave policies and communicate any adjustments so that teachers and staff have sufficient coverage and understand what is available to them.
- Invest in staffing for non-academic roles: counselors, health care, guidance, adjustment counselors and others to ensure that teachers can focus on the academic needs of students.
- Identify, disseminate, and fund high quality existing online learning resources to teachers to supplement their existing curricular materials.
- Fund instructional designers at the school, district, and/or state level to develop content for educators to meet the needs of virtual, hybrid, and asynchronous learning.
- Identify, disseminate, and fund the resources, staffing, and materials needed to support students who are unable to return to school due to health concerns.
- Fund incentives for teachers who participate in training for online learning implementation during summer months and throughout the 2020-2021 school year.

6.2 Meeting the Needs of Vulnerable Students

Schools support the needs of vulnerable students through both in-house programs and services and through partnerships with local community organizations. COVID-19 reduced or eliminated access to many of these supportive services. Policy makers and districts should consider the following:

- Support funding for programs and services targeted to vulnerable students and their families are funded and accessible regardless of the teaching and learning modality.
- Support specific community non-profit organizations that are able to implement their services directly to vulnerable students and their families to ensure a continuity of services despite school closures.

COVID-19 reduced or eliminated access to many of these supportive services.

Child Welfare

Without interactions from teachers and school personnel, students are at increased risk of unnoticed and unreported maltreatment. Policymakers and districts should consider the following:

- Support funding for enhanced personal or virtual check-ins on vulnerable students at risk of child abuse or neglect.
- Highlight existing resources for the reporting of child maltreatment to ensure that mandated and non-mandated reporters, such as family members or neighbors, have access to resources to protect vulnerable students.

Students Experiencing Homelessness

Homeless students face additional challenges at school, and these have been exacerbated due to the COVID-19 pandemic. Policymakers and districts should consider the following:

- Inform teachers and administrators of key federal policies that ensure the protection of students experiencing homelessness, such as the McKinney-Vento Act.
- Provide sufficient funding to connect school personnel with community-based social services.
- Invest in legislative supports, such as the Emergency Family Stabilization Act (EFSA). The EFSA specifically targets funds for housing, health, education and safety. Enhancement of these services is warranted to ensure that the most vulnerable students are located, engaged, and supported.
- Identify, support, and engage students and families experiencing homelessness to maintain educational progress and minimize further disruption and displacement.

Undocumented and Newcomer Students

Undocumented families are especially vulnerable to not receiving vital social services such as access to food. Additionally, many of these families are not eligible for other safety net programs such as Unemployment Insurance. Undocumented students specifically and newcomer students more broadly also often face language barriers and transportation barriers to accessing services. Further, depending on the path of arrival, many newcomer students may have faced severe disruptions in their education even before COVID-19. Policymakers and districts should consider the following:

- Ensure undocumented families maintain access to broader essential services, like food, even when schools are remote or hybrid.
- Support funding for outreach to families about COVID-19 in all relevant languages.
- Support funding for medical care, economic and social support that does not compromise their ability to be in the U.S.
- Invest in and provide culturally and linguistically competent staff to translate, communicate, and at times provide available resources to families.

LGBTQ+ Students

Students, teachers and administrators should have easy access to resources and supports for the LGBTQ+ community, including health and mental health resources. Policymakers and districts should consider the following:

- Recognize that LGBTQ+ students are more vulnerable to mental health challenges when confined to homes where families are not supportive of their identity.
- Support funding for staff with expertise in LGBTQ+ issues so that they are available for all students, no matter the education approach that districts take in the fall. For example, stipends could allow teachers to continue hosting co-curricular activities or clubs for this community and its allies.

6.3 Student Health and Wellness

Students with health challenges need to have continuous and accessible services. School personnel must also consider the impacts of the pandemic on all physical, social, emotional and mental health. Policymakers and districts should consider the following:

- Support funding for assessments of all students experiencing risk factors associated with health and mental health impairments, including trauma associated with both the physical and mental health burdens resulting from COVID-19.
- Support funding of school staff and/or referral services to experts in health, mental health, and trauma delivery services to students, staff, and families.
- Consider the role of school systems and school health professionals in the provision of Telehealth services.
- Expand access and flexibility of the use of Medicaid and the Children's Health Insurance Program (CHIP). Provide funding to ensure continued access to these necessary health services.
- Align academic expectations with student physical, social, and emotional health.

6.4 Additional Family Supports

In order for school reopening to succeed, families will need sufficient support to ensure home-work-life balance. Policymakers and districts should consider the following:

- Support funding for effective communication strategies. Communicate concise, clear, and streamlined information with families about academic and logistical expectations. These communications should be translated into the languages present in each school/district and account for varied access to technology.
- Support funding for high-quality affordable after-school care for working families for children K-5.
- Support funding for access to after-school and enrichment programs for middle and high school youth. The costs of quality after-school programs have been associated with subsequent cost savings on educational remediation and crime.
- Fund and create linkages to child supervision resources for families where parents are deemed essential workers when learning is hybrid or remote.
- Fund wraparound support and referrals for families directly impacted by COVID-19, such as the loss of parental employment, family mortality, eviction or relocation, and food (in)security.

6.5 School Related Operational Recommendations

Food and Nutrition

Planning for food access will need to occur in tandem with all reopening plans. If schools need to transition to hybrid or full online, contingency plans will need to be in place to ensure consistent access to the food resources many families depend on. Policymakers and districts should consider the following:

- Communicate and engage families to ensure that families are aware of the resources available to them and how to access them.

- Fund and coordinate the assessment of innovations such as the use of mobile devices to offer easy access to mobile food pick up locations. For example, determine the efficacy of the debit card and grab and go model to determine their continued practice and potential expansion.
- Fund nutrition programs in the summer and ensure their availability to all families at risk of food insecurity, including undocumented children. These may include access to food grab and go sites, or debit cards.

Transportation

Lower density requirements for bussing students will present complex logistical challenges and economic implications. In either hybrid, or in person models policymakers and districts should consider the following:

- Stagger school arrivals, drop-off times, or locations to promote social distancing.
- Support funding for increased shuttling of fewer students more frequently, and/or reduce the number of students who utilize bussing.
- Support funding for ADA compliant transportation that also address social distancing for students with special needs
- Fund additional supervision at the school to accommodate the longer transportation drop off and pick up timeframe.
- Support funding for resources to clean and sanitize high touch areas in compliance with CDC guidelines between, and at times within trips.
- Develop operational plans for drivers so that they can maintain the recommended distance of six feet during on-boarding, off-boarding, and transporting students. Municipal busses have piloted approaches to these, and best practices should be adopted to ensure the wellness of transportation staff.
- Support funding for the installation of protective barriers such as plexiglass to minimize exposure for drivers and/or bus aids.

Health and Safety Planning

Maintaining the health and wellness of students and staff during the pandemic will be complex and costly. District leaders will need to consider physical space including air quality, risks associated with surfaces and needed barriers while concurrency considering operations, human resources, and social behavior. Policymakers and districts should consider the following:

- Support funding for appropriate supplies and practices for the sanitation of school spaces.
- Fund the immediate repair or replacement of HVAC systems that compromise air quality so that these are complete before the start of the school year.
- Fund the provision of sufficient PPE, especially given necessary changes following direct contact with students.
- Develop school and district sanitation plans to disinfect frequently used surfaces.
- Continuously teach and reinforce handwashing to all students.
- Fund the provision of hand sanitizer that contains at least 60% alcohol when soap and water are not available.

- Encourage students to cover coughs and sneezes with a tissue and properly dispose of used products. Additional resources may be needed to provide sufficient tissues and disposal bins in all spaces.
- Develop explicit district guidance on the conditions under which students will be sent/kept home and the preconditions to returning to school. Communicate this guidance to staff and caregivers.
- Develop explicit district guidance on the conditions under which teachers and staff will be sent/kept home and the preconditions to returning to school. Communicate this guidance to staff and caregivers and provide sufficient resources to maintain adequate staffing to protect both health and learning objectives.

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About the Global Resilience Institute

Based at Northeastern University in Boston, MA, the Global Resilience Institute's (GRI) research and educational mission is to develop and deploy practical and innovative tools, applications, and skills that drive social and technical changes, which strengthen the capacity of individuals, communities, systems, and networks to adapt to an increasingly turbulent world. Launched in 2017, GRI is the world's first university-wide institute to respond to the resilience imperative. Today, GRI undertakes multi-disciplinary resilience research and education efforts that draw on the latest findings from network science, health sciences, coastal and urban sustainability, engineering, cybersecurity and privacy, social and behavioral sciences, public policy, urban affairs, business, law, game design, architecture, and geospatial analysis. GRI works in close partnership with industry, government, communities, and non-governmental organizations, as well as engages in external outreach to inform, empower, and scale bottom-up efforts that contribute to individual and collective resilience.

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