



COVID-19 and K-12 School Reopening: A Simple Information Provision Proposal

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August 3, 2020

WHAT IS AT STAKE: COVID-19, LONG-RUN PRODUCTIVITY, AND THE 2020 SCHOOL YEAR

Month for month, the COVID-19 pandemic has done more damage to the American workforce than the Great Recession. By shutting down schools, local policymakers risk making this damage permanent. What has come to be called *educational scarring* helps explain why the Great Recession was so great and why the recovery took so long to benefit low-wage workers.¹ Young workers in the late 1990s and the years following 2000, like Wall Street investment banks, seemed to believe that the housing bubble would continue indefinitely. These beliefs led many high school graduates to forgo college and instead proceed directly to realty, construction, and real-estate-related jobs.² When the Great Recession struck, those housing-market-related skills rapidly lost value. Worse still, these medium-ability workers, because they had forgone educational opportunities in their late teens and early twenties, looked like low-skill workers to employers, putting further pressure on the bottom of the labor market. Because the lifetime pecuniary benefits of college decline with the age of initial attendance, and because the opportunity costs of attending college rise with age, workers who chose to forgo college in their youth often never set foot on a college campus. The lost labor productivity from these choices is effectively permanent; many believe that the lifetime income of cohorts exposed to the Great Recession will not recover. Recent research suggests that even the family structure of these cohorts has been permanently altered.

Local K-12 policymakers, driven by fear of COVID-19, are now poised to make the same unforced error. Teachers' unions and school superintendents have pushed for the elimination of physical schooling and even face-to-face instruction, to further reduce an already very low baseline risk from

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COVID-19.³ Los Angeles, New York City, and many of America's most populous school districts have already committed to either complete online instruction or to hybrid (online and some face-to-face) instruction.⁴ While experimentation in education should normally be commended, the available evidence already points to substantial educational scarring losses from this year's school shutdowns.⁵

Further, a recent *Wall Street Journal* op-ed reports that at least one teachers' union has negotiated bans on teaching using Zoom or Skype and secured guarantees that teachers do not have to work more than four hours per day.⁶ If such clauses become widespread, it is almost guaranteed that student achievement will suffer, and the suffering will not be borne equally. Students with access to private schooling and tutoring services can substitute for or supplement the subpar product on offer this fall. Students without access to computers, who come from the most remote or poorest households in America, run a serious risk of simply being left behind.⁷

Educational achievement is a cumulative process in which early life achievements and success build the foundation for future achievements and success. Accordingly, the K–12 years are, if anything, more essential than college for determining individual life outcomes. A much greater fraction of students complete K–12 education than college, so local school shutdowns risk doing even more permanent economic damage to a larger fraction of the generations currently in school than the Great Recession inflicted on older millennials and younger Gen Xers.

Reflecting on the link between education and overall socioeconomic status and future health, the president of the American Academy of Pediatrics recommended that children be “physically present in school” and identified specific harms of social isolation, increased abuse, depression, and increasing untreated learning deficits.⁸ If policymakers unnecessarily commit to school closures or restrictive rules, such as those adopted by Los Angeles County, they ensure lower educational attainment for future low- and medium-ability workers, large lifetime income losses for those future workers, and eventually, through reduced socioeconomic status, a lower life expectancy.

I propose an (apparently novel) dynamic information provision strategy tailored to parents and local policymakers. This strategy can be implemented without any additional data collection. If the United States follows the same trajectory in the rates of COVID-19 death and infection as other countries experiencing earlier peaks in these rates, then I anticipate that my proposal will accelerate school reopenings. My policy recommendation also balances potential future harms from COVID-19 by serving as an early warning system in the event of a COVID-19 mutation occurring in a particular area or the weakening of a particular population's immunity.

BACKGROUND: THE AVAILABILITY HEURISTIC

The decisions about school reopenings may be misguided, but they were not made in a bubble. As of late July 2020, more than 150,000 Americans have died from COVID-19, and both the number

of infections and the total number of deaths continue to rise. Although COVID-19 death rates puzzlingly fell in the summer (despite population infection levels being well below the rates associated with herd immunity), there is little chance of a successful vaccine arriving in time for the school year.

Nevertheless, when it comes to school reopening, policymakers and some parents have likely fallen victim to an availability bias. In his book *Valuing Life*, Cass Sunstein defines the *availability heuristic* as a method for measuring probability “by asking whether a readily available example comes to mind.” He cautions that “the availability heuristic can produce significantly exaggerated judgments about probable harm.” In fact, “‘availability entrepreneurs’ take advantage of the availability heuristic by producing or publicizing particular risk-related events, perhaps to seek legislation that they favor (as environmentalists do), perhaps to promote either selfish or altruist goals.” “Prospect theory,” Sunstein explains, “suggests that people will seek regulation, as a form of insurance, to prevent harms that are grave but that are highly unlikely to occur. This point helps explain the demand for protection against small risks of catastrophic attacks.”⁹

COVID-19’s risk to K–12 students is minimal. According to official Centers for Disease Control and Prevention (CDC) data, as of July 22, 2020, 226 Americans younger than 25 died of COVID-19. For this age group, more Americans are typically expected to die of homicide, suicide, cancer, congenital anomalies, motor vehicle accidents, or drowning than of COVID-19 each year.¹⁰ The number of COVID-19 deaths for this group is about the same as the number of flu deaths, suggesting that with appropriate precautions (such as masks), reopening schools poses real but tiny risks to K–12 students. Given the foreseeable increase in homicides, suicides, and mental and physical illnesses from a disrupted K–12 education, school reopenings will almost certainly save young lives on net, but that question is outside the scope of this policy brief.

A better reason for keeping physical schools closed is the risk of transmission from children to teachers and household members. The risk of dying or suffering long-term harms from COVID-19 is low but heterogeneous.¹¹ A household in which grandparents help raise children has a much greater risk of a COVID-19-related death than a nuclear family with a young mother and father.¹² Similarly, while the overwhelming majority of K–12 school teachers face almost no risk of dying from COVID-19, a quarter of all K–12 schoolteachers are either older than 65 or have preexisting conditions, putting them at an elevated risk if they become infected.¹³ Surprisingly, many American school districts seem not to have considered simply isolating or taking special precautions for at-risk faculty and staff and otherwise continuing the school year as usual.

Despite these heterogeneities and differences in baseline risks, 22 countries have been able to reopen schools with only occasional spikes in cases.¹⁴ Summarizing the latest available evidence for the *Times*, UK scientist Mark Woolhouse, an infectious disease epidemiologist at Edinburgh University, claims that K–9-aged schoolchildren are “probably less susceptible and vanishingly unlikely to end up in hospital or to die from it.”¹⁵ He adds, “There is increasing evidence that they rarely transmit. For example, it is extremely difficult to find any instance anywhere in the world

as a single example of a child transmitting to a teacher in school. There may have been one in Australia but it is incredibly rare.”¹⁶

One study in Ireland finds zero transmission from children age 10 to 18 to parents or teachers.¹⁷ Even if K–9 student-to-teacher transmission is a safely ignorable risk, as the evidence seems to show, physical school reopenings will surely increase contact between older students and other older students, older students and teachers, older students and staff, teachers and teachers, staff and staff, and teachers and staff. In Israel, physical school reopenings are strongly associated with the recent resurgence in infections (although few deaths have occurred so far), even with no well-documented cases of younger students transmitting the virus to their teachers.¹⁸

CURRENT POLICY DEBATE

In light of these considerable heterogeneities in baseline risk by age, medical condition, household structure, and region, the Trump administration’s current focus on static guidelines and cost-benefit analyses is unlikely to persuade local policymakers or parents caught in the grip of availability bias.¹⁹ An alternative but complementary strategy would focus on local, real-time information provision. Sunstein notes that “a great deal of information appears to be necessary to counteract the effect of strong emotions—showing that people are not impervious to such information, but that when emotions are involved, a great deal of careful work has to be done.”²⁰

The federal government is uniquely well-positioned to collect, centralize, and provide data. Currently, COVID-19 data collected at the state or county levels by (primarily) a combination of the CDC, states, and county health agencies can be accessed through the CDC website.²¹ Total COVID-19 death and infection data are usually available down to the county level. However, school districts can be both smaller and larger than counties, and county and school district boundaries need not align. Thus, county-level statistics may not have the same persuasive effect as more localized, age-specific, and real-time information.

Parents and families are best equipped to determine whether their children should be allowed to return to schools. Policy should be capable of taking contingencies into account. The virus may mutate (it already has at least once).²² Furthermore, in the winter, immune systems may weaken. While reopening and sending children to school is the right answer for most school districts, the best policy for parents and schools is probably dynamic. I would expect optimal policies to vary by region, district demographic characteristics (including comorbidities), COVID-19 and flu season history, and household structure.

It is now a certainty that some school districts will not physically reopen at the start of the school year. Directly challenging teachers’ unions and district administrators, which are politically powerful, is unlikely to work, especially if these challenges come from the current administration, given

the partisan valence of the issue. A better strategy would be to provide rolling weekly COVID-19 death and infection statistics by age and school district (and the area directly surrounding schools) to parents and local decision makers. If the deaths and infections are low or decreasing for individuals of the same age as those in each household, we can expect that the parents will pressure their school districts to reopen as soon as is feasible. Political pressure from below will be more efficacious in facilitating physical school reopenings district by district than static guidelines and direct exhortation at the national level.²³ Most parents intuitively understand that rising numbers of infections in Texas should not drive policy in New York, where rolling weekly COVID-19 deaths and infections have slowly and nearly continuously declined since May.

If the Trump administration is correct in its prediction that COVID-19 deaths will continue to decline into the fall, then it is difficult to imagine a better tool for persuading parents than regular updates showing zero deaths and few infections for anyone the same age as their children, themselves, their children's teachers, or members of their household. If the administration is wrong about the trajectory of COVID-19 deaths, then such a system will provide early warning to parents and policymakers, reducing overall deaths. Committing to provide this information in an accessible format can help restore credibility and public trust as well as facilitate rapid policy analyses of school reopening decisions by academics, government analysts, and independent researchers.

Since union contracts generally ensure that teachers will be paid this academic year regardless of students' educational experience, economists should not be surprised that teachers' unions have opted to minimize their COVID-19 exposure regardless of the social cost. Nonetheless, individual teachers often want to provide high-quality education for their students regardless of their incentives. The proposed system could aid in persuading individual teachers to engage in face-to-face teaching and convincing unions to allow reopenings where age- and district-specific COVID-19 risk is low enough.

PROPOSAL DETAILS: GIVE PARENTS AND HOUSEHOLDS ACCESS TO EXISTING COVID-19 DEATH AND INFECTION DATA AT THE SCHOOL-DISTRICT LEVEL AND FOR A SMALL RADIUS SURROUNDING AGE-APPROPRIATE SCHOOLS

As of now, the CDC's National Center for Health Statistics aggregates death certificate data for internal use. Death certificates usually contain the age, cause of death, and location of the individual who has died. Data for COVID-19 deaths are available for the public down to the county level. Unfortunately, as noted earlier, school reopening decisions must be made on a district-by-district basis. Although many entrepreneurial state and county public health departments (such as some in New York) have made zip-code-level infection and county death statistics by age available, these data are far from universally available. The CDC does not attempt to aggregate the available COVID-19 death or infection statistics by zip code as it does by state or county. Similarly, I was unable to find county-level deaths by age on the CDC's website, although Johns Hopkins Univer-

sity aggregates county-level deaths by age from individual health departments where that information is available. Furthermore, even if these data were readily available, for many parents, it can be difficult to find, construct, and interpret zip-code-level statistics appropriate for decision-making, such as infections or deaths by age and by school district. As with counties, school district boundaries need not align with zip code boundaries. While zip code data are usually more granular than county data, in some cases neither zip-code-level nor county-level data will be psychologically appropriate for giving parents confidence in their choice about whether to send their children to school or giving local policymakers confidence in their decision about whether to reopen.²⁴

I propose that the US Department of Health and Human Services (HHS), in combination with the US Department of Education, fill these gaps and make real-time COVID-19 death and infection data available by age at the school-district level in a format accessible to parents and other local decision makers.²⁵ A minimum viable product could simply add the proposed data product to the recently developed HHS dashboard.²⁶ Later, HHS could make this dashboard accessible through a dedicated app for mobile devices, into which parents could input their address and the ages of the members of their household. The dashboard would then provide rolling numbers of weekly deaths and infections in the school district and the area surrounding the age-appropriate school. Ideally, parents could simply pick their school from a dropdown menu and get relevant COVID-19 statistics.

The system I propose would be opt-in, but Department of Education guidelines could be used to encourage local school districts to make such information available to parents through, for example, Blackboard or email, and to alert parents about the existence of the HHS dashboard. For those parents in remote areas or deep poverty, who may not have access to cell phones, school districts should be encouraged to regularly make district information on COVID-19 deaths and infections available through other means (i.e., paper copies available for pickup at local libraries, city halls, and places of worship).

The app could draw from HHS's latest available data on the date and location of deaths and infections, information on school district boundaries and school addresses from the Department of Education, and home addresses (for locating the school nearest to the parents) from either the Census Bureau or the US Department of Transportation's national address book.²⁷ (The Census Bureau's address book is more complete but potentially more time-consuming to access.)

Results from a 2019 Pew survey show that 81 percent of Americans own a smartphone, and that percentage is likely even greater today.²⁸ Thus, a smartphone app can be an appropriate medium for government provision of real-time, local data for American families. That said, parents without a smartphone should be provided with alternative options for live information updates, including web applications and simple text messaging systems. For example, parents could text their address and the number and ages of their household members to a dedicated number maintained by HHS. Then each day parents could receive updates on the rolling weekly number of infections or deaths in both the school district overall and a small radius surrounding the age-appropriate schools (e.g.,

schools with kindergarten and grades 1–5 for a student aged 5), with options available for disabled or challenged students if those students are educated in a separate facility.

Ninety-six percent of Americans have access to a cell phone. The data required for the app I proposed earlier, specifically of household member ages and addresses, are so minimal that it could plausibly be implemented on a regular cellphone without access to the internet. Eventually, geo-targetable web applications such as Facebook, Twitter, or NextDoor could be used to provide local rolling counts of deaths and infections, but the use of web and mobile phone apps should be prioritized owing to their ubiquity.

POLICY AND PRESENTATION DETAILS

Currently, all the data required to implement this proposal for deaths are already being collected, but HHS guidance requiring the reporting of infections by zip code only goes into effect on August 1.²⁹ Despite this slow start, by mid-August, a rolling weekly count of infections by zip code could be used to impute infections by age by each school district.

At HHS, the Office of the Chief Information Officer, the Office of the Chief Technology Officer, and the chief data officer have dramatically improved their capacity since the Affordable Care Act website debacle, as evidenced by their rapid rollout of a dedicated COVID-19 dashboard (in addition to updates to the existing CDC website).³⁰ If the federal government did not have the capacity, will, or resources to develop such a system, one could imagine Facebook, Amazon, or Google publishing imputations based on publicly available data. The administration should consider an executive order to facilitate information-sharing between the Department of Education, HHS, and either the Census Bureau or the Department of Transportation to enable the rapid development of the proposed application without a time-consuming interagency process. It is worth noting that the system proposed here is far less invasive than similar information provision systems in China, Hong Kong, South Korea, or Taiwan, which rely on central government surveillance of all residents, regardless of individual citizens' infection risk, as well as elaborate contact tracing.³¹

One worry might be that large school districts would simply report much larger numbers. To address this issue, officials should consider expressing the weekly number of school district deaths and infections per 100,000 people, in addition to expressing the absolute numbers.

POLICY ALTERNATIVES: SUBSTITUTES AND COMPLEMENTS

In this proposal, I have concentrated on providing data along only two dimensions: age and location. Once a simple real-time information provision system is up and running, policymakers will face a temptation to add more and more information to the system. Parents and local policymakers might reasonably want statistics on risk by sex or race or for individuals with preexisting condi-

tions. While death rates by sex and race are usually readily available from death certificates, reliable preexisting condition data can be harder to come by. Indeed, other features citizens might imagine, such as where the deceased were infected or whether the infected have preexisting conditions, cannot be obtained using the federal government's existing data stores. While there is debate about whether cost-benefit analyses can be coherently applied to data collection enterprises, it stands to reason that there will be diminishing returns to each potential cross-tabulation built in.³² Policymakers should think carefully about the costs of additional complexity on both the front end and back end of any information provision system as well as the data collection and sharing burdens such a system would impose on individuals and state and local health departments.

A related policy would involve regular COVID-19 testing of students, teachers, and staff for each K-12 institution. For instance, schools could temperature test all students, faculty, and staff every day, administering a specific COVID-19 test to staff and teachers each week, and all students each month. Where resources are limited, testing should concentrate on groups most at risk. Because it is expected that these tests will usually be negative, recently legalized pooled testing can substantially reduce costs.³³ Since population-scale testing passes any reasonable cost-benefit analysis, mass testing concentrated on schools to facilitate reopenings likely has an even greater rate of return.³⁴ As is the practice in China, Germany, Israel, and South Africa, a positive pooled test result would yield more intensive individual testing. Mass testing gives policymakers the flexibility to consider a temporary shutdown and resumption of virtual education conditional on evidence of a physical-school-induced viral outbreak.³⁵ These thresholds and details can be determined at the local level to reflect each community's tolerance for risk and available educational (and health) resources.³⁶

Mass testing of students, teachers, and staff should help fearful teachers and community leaders gain more confidence in the information-provision system's results.³⁷ Similarly, the system complements the Trump administration's current policy of providing information on the benefits and costs of school reopening. COVID-19 mutates slowly and, absent further mutations, a typical school district can expect zero deaths and few infections for K-12 learners. To the extent that these low COVID-19 risks are reflected in each school district's test results, a testing system concentrated on schools helps sustain an equilibrium in which schools stay physically open. Similarly, parents and policymakers in school districts that have already committed to physical shutdowns with potential for reopening are unlikely to be persuaded by cost-benefit analyses conducted using out-of-date information, but schools doing hybridized instruction might consider increasing the ratio of physical attendance to online attendance if COVID-19 infections are consistently low.

Daily pooled tests have an additional advantage over the information-provision system I propose. In the unlikely case that COVID-19 becomes more virulent, or in the more likely case that the population's immune systems become compromised, which often occurs in the winter months, rising death and infection rates at the district level can still provide critical confirmation that

early cost-benefit analyses and guidance *were* incorrect, at least for that school district. Parents can respond by revising their choice to send their children to school, and they can take additional individual and household precautions to avoid exposure to the virus. Policymakers, with parents, can rethink reopening decisions accordingly. However, because of the lag in aggregating data, mass tests concentrated on schools will almost always provide an earlier warning to parents than any app the federal government could be expected to implement. A federal government guarantee to provide enough tests for a given school district to ensure that infections and COVID-19-related deaths remain low could do more to engender confidence in the choice to reopen than any static set of guidelines or any individual policy analysis, which have historically had a very short half-life (for example, analyses of lockdowns, ventilators, hydroxychloroquine, and masks).

Finally, provisions should be made to sunset these applications two years after their start date, with the option to renew data sharing and provision should COVID-19 deaths fail to significantly fall from their current levels.

CONCLUSIONS

Physical school shutdowns will do permanent economic damage to K–12 students. COVID-19 poses minimal death and infection risks to those in grades K–9. For those in grades K–12, the risks are about the same as with the flu. An overwhelming majority of educators face minimal threat from COVID-19, but schools in which many children’s household members or teachers or school staff are older or have preexisting conditions may face substantial threats. At the local level, strategies of isolating vulnerable individuals according to age and comorbidity should be considered. Absent any new COVID-19 mutations, physical school reopening and the resumption of face-to-face teaching with additional precautions is the right answer for most but probably not all school districts. At the federal level, information on the weekly averages of deaths and infections by school district (and the area around schools) and age should be made available for all parents and local policymakers. Federal policymakers should make this information available first through the HHS dashboard and eventually through a dedicated mobile app. Mass testing efforts should be concentrated around schools at risk of a physical shutdown or around schools running hybridized instruction programs. Recently legalized pooled tests offer an opportunity to conduct mass testing at the school level cheaply.

ABOUT THE AUTHOR

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NOTES

1. Social scientists call disruptive life events that permanently harm people *scarring*. For instance, the unemployment caused by the COVID-19 pandemic will bring about higher individual unemployment rates in the future because individuals miss out on the skill building that they would have gained with employment today. This phenomenon is called “unemployment scarring.”
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