



# Mitigation of Pandemic Impacts on Children

A Summary of Proceedings of the 15th Annual Symposium

WASHINGTON STATE ACADEMY OF SCIENCES

October 26, 2022

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## Foreword

The COVID-19 pandemic has exacted a heavy toll on everyone, but its effects on children have been especially dire. While most children do not have acute symptoms as severe as adults from infection with the SARS-CoV-2 virus, more than 1,300 children ages 0 to 18 in the United States have died because of the disease, and the long-term health effects of infection remain largely unknown<sup>1</sup>. Furthermore, the virus has occasioned the closing of children's schools, limited their interactions with others, resulted in the loss of parents and other caregivers, and cast a pall on their young lives.

The Washington State Academy of Sciences has a particular interest in the impacts of the COVID-19 pandemic on children. Members of the Academy have been studying different facets of the issue, and all of us are concerned about the effects the pandemic has had and will continue to have on the residents of our state. For that reason, we devoted our 2022 annual symposium, which was held as an online event on October 26, to "Mitigation of Pandemic Impacts on Children."

The symposium disseminated critically important information. After a superb keynote address on the equitable health and well-being of children in the United States, panels of researchers, practitioners, and other experts looked at the impacts of COVID-19 on the physical health of children (Chapter 2), children's education (Chapter 3), and their mental health (Chapter 4). The symposium's final session turned to some of the broader philosophical and ethical issues raised by the pandemic's effects on children, after which presenters from earlier in the day reflected on the key messages they heard during the day's discussions (Chapter 5).

My hope is that the symposium will help us protect some of the most vulnerable members of our society, our children, from the impacts of the pandemic. Obviously, we could not address all aspects of the topic in six hours. Nevertheless, I believe that the symposium established a valuable framework for moving forward.

I want to thank the staff of the Washington State Academy of Sciences for the success of the symposium. Dr. Yasmeen Hussain was essential in organizing and conducting the event. Liza Jarowey impeccably ran the technical aspects of the symposium. Steve Olson captured the richness of the symposium's presentations and discussions in these proceedings. And the Academy's executive director, Donna Gerardi Riordan, oversaw all aspects of the event as part of her commitment to making the Academy a vibrant convener for these sorts of conversations.

The Academy stands ready to work with policymakers and stakeholders to ensure that the issues discussed at the symposium get to the right eyes and right ears. Washington State has a remarkable cadre of people working on this issue. Their dedication fills me with optimism – tempered, of course, by the sadness of what has happened. I'm grateful to be part of such an amazing group of people.



**John Roll**, *President*, Washington State Academy of Sciences  
Associate Vice President for Health Sciences Research  
Professor and Vice Dean for Research, Elson S. Floyd College of Medicine  
Washington State University

<sup>1</sup> [https://www.cdc.gov/nchs/nvss/vsrr/covid\\_weekly/index.htm](https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm)

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# 1. A Path Forward

## From Mitigation of the COVID-19 Pandemic to the Equitable Health and Well-Being of All Children

The 2022 annual symposium of the Washington State Academy of Sciences, which was held virtually on October 26, 2022, began with a keynote address by Osaremen Okolo, who served as policy advisor for public health and equity in the White House Office of the COVID-19 Response from January 2021 through August 2022. In her overview of the consequences of the pandemic for children and potential ways of meeting their long-term needs, she introduced many of the symposium's major themes as well as many of the challenges that need to be overcome to ensure the health and well-being of all children.

### THE IMPACTS ON CHILDREN

"The pandemic disrupted everyone's life and wreaked havoc on our mental health and wellness," said Okolo, and children were not spared. In January 2021, when the Biden-Harris administration took office, less than half of K–12 schools were open for in-person instruction.<sup>1</sup> Besides in-person school, students lost months of play dates with friends, holidays with relatives, sports games, academic competitions – "touchstone moments that they could depend on before the pandemic." These issues manifested inequitably for Black, brown, and multiracial children, who were more likely than their peers to be learning remotely, even in schools offering in-person instruction.<sup>2</sup> Interpersonal interactions were reduced not only among children, friends, and family but among professionals like teachers, school counselors, pediatricians, and child welfare workers who are trained to recognize signs of mental health concerns, child abuse, and other problems. In an American Psychiatric

Association poll released in May 2021, more than half of parents expressed concern over their children's mental well-being.<sup>3</sup> Data reported alarmingly higher rates of social isolation, stress, anxiety, and depression among children.<sup>4</sup>

Emergency department visits for attempted death by suicide rose 51 percent for adolescent girls in early 2021, compared with the same time period in 2019.<sup>5</sup> Adolescents who experienced major depressive episodes were more likely to report that the COVID-19 pandemic negatively affected their mental health quite a bit or a lot. Preliminary data from the Centers for Medicare and Medicaid Services suggest that, despite all these findings, utilization of mental health services during the pandemic declined by 23 percent for Medicaid and Children's Health Insurance Program beneficiaries.<sup>6</sup> For adolescent beneficiaries between the ages of 15 and 18, utilization of substance use disorder health services declined by 24 percent.

1 A summary of the data and of the Biden administration's actions are available at <https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/16/fact-sheet-back-to-school-2022-giving-every-school-the-tools-to-prevent-covid-19-spread-and-stay-safely-open-all-year-long>.

2 See [https://nces.ed.gov/nationsreportcard/subject/about/pdf/2021\\_school\\_survey\\_press\\_release.pdf](https://nces.ed.gov/nationsreportcard/subject/about/pdf/2021_school_survey_press_release.pdf).

3 More information is available at <https://psychiatry.org/News-room/News-Releases/new-apa-poll-shows-sustained-anxiety-among-america>.

4 Jill Meade. 2021. Mental health effects of the COVID-19 pandemic on children and adolescents. *Pediatric Clinics of North America* 68(5):945–959.

5 Ellen Yard, Lakshmi Radhakrishnan, Michael F. Ballesteros, Michael Sheppard, Abigail Gates, Zachary Stein, Kathleen Hartnett, Aaron Kite-Powell, Loren Rodgers, Jennifer Adjemian, Daniel C. Ehlman, Kristin Holland, Nimi Idaikkadar, Asha Ivey-Stephenson, Pedro Martinez, Royal Law, and Deborah M. Stone. 2021. Emergency department visits for suspected suicide attempts among persons aged 12–25 years before and during the COVID-19 pandemic – United States, January 2019–May 2021. *Morbidity and Mortality Weekly Report* 70:888–894.

6 A summary of the data is available at <https://www.medicaid.gov/state-resource-center/downloads/covid-19-medicaid-data-snapshot.pdf>.

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All these findings were compounded by other psychological stressors that children were battling, Okolo observed. Extensive research indicates that children experience many negative mental health impacts, including anxiety and depression, in response to school shootings and deaths from gun violence in their communities.<sup>7</sup> Young people in the Black community had been battling a pandemic of racial injustice and police brutality even as they watched George Floyd's murder at the hands of a police officer from their televisions or cellphones in the summer of 2020.

Beyond the pandemic's effects on mental health were its effects on learning. According to the National Assessment of Education Progress (NAEP), the fourth and eighth graders sampled exhibited significantly lower levels of proficiency in reading and mathematics when compared with the assessment in 2019 before the onset of the pandemic.<sup>8</sup> The NAEP results indicated equally low levels of proficiency in schools that were largely open for in-person instruction throughout the pandemic and schools that were largely offering virtual instruction until early 2021. "To be clear, I am not in any way negating the importance of ensuring that our children equitably recover from learning loss," said Okolo. "But I would argue that it may be impossible to make significant improvement in these results if we don't also prioritize the complete health and well-being of our nation's children so that sickness, displacement, and mental health disorders don't further exacerbate the academic issues."

Since the beginning of the pandemic, COVID-19 has put millions of children across the world at risk of growing up without a caregiver. During the first 26 months of the pandemic, from March 1, 2020, through May 1, 2022, over 10.5 million children worldwide lost a parent or primary caregiver, including grandparents, guardians, or other older family members.<sup>9</sup> In the United States, more than 200,000

children lost a parent, custodial grandparent, or other primary caregiver.<sup>10</sup> "That's more than one in every 500 children who have lost the adult that made their home and provided for their daily care and basic needs," Okolo said. The highest burden of these losses fell within southern border states for Hispanic and Latino children, in southern states for Black children, and in states with tribal areas for American Indian and Alaska Native populations. Though white individuals represent 61 percent of the total U.S. population and racial and ethnic minorities make up 39 percent, communities of color accounted for 65 percent of those who lost a primary caregiver due to the pandemic.<sup>11</sup> That translates to one in every 168 American Indian or Alaska Native children, one out of every 310 Black children, one out of every 412 Hispanic or Latino children, one out of every 612 Asian children, and one out of every 753 white children, Okolo noted. "Children's lives are irrevocably altered when they lose a mother, father, grandparent, or guardian." Such a loss is one of the adverse childhood experiences (ACEs) associated with mental health problems, absences from school, sexual abuse, and exploitation.

Youth with intellectual or developmental disabilities found it especially difficult during the pandemic to manage disruptions to school and services, such as special education, counseling, and occupational and speech therapies.<sup>12</sup> Many American Indian and Alaska Native youth already face challenges staying connected with friends and attending school due to limited internet access. Latino and Hispanic youth reported high rates of loneliness and poor or decreased mental health. Asian American, Native Hawaiian, and Pacific Islander youth reported increased stress due to hate and harassment related to COVID-19. LGBTQ youth lost access to many school-based services that were tailored to their needs and were sometimes confined to homes where they were not supported or accepted. Youth lost touch

7 Nirmita Panchal. 2022. The Impact of Gun Violence on Children and Adolescents. Available at <https://www.kff.org/other/issue-brief/the-impact-of-gun-violence-on-children-and-adolescents>.

8 Results from the survey are available at <https://nces.ed.gov/nationsreportcard>.

9 Susan Hillis, Joel-Pascal Ntwali N'konzi, William Msemburi, Lucie Cluver, Andrés Villaveces, Seth Flaxman, and H. Juliette T. Unwin. 2022.

Orphanhood and caregiver loss among children based on new global excess COVID-19 death estimates. *JAMA Pediatrics* 176(11):1145–1148.

10 Susan Hillis, Juliette Unwin, Lucie Cluver, Lorraine Sherr, Philip Goldman, Laura Rawlings, Gretchen Bachman, Andrés Villaveces, Charles Nelson, Phil Green, and Seth Flaxman. 2022. *Children: The Hidden Pandemic 2021 | A joint report of COVID-19 associated orphanhood and a strategy for action*. Available at <https://www.cdc.gov/coronavirus/2019-ncov/downloads/community/orphanhood-report.pdf>.

11 Susan D. Hillis, Alexandra Blenkinsop, Andrés Villaveces, Francis B. Annor, Leandris Liburd, Greta M. Massetti, Zewditu Demissie, James A. Mercy, Charles A. Nelson, Lucie Cluver, Seth Flaxman, Lorraine Sherr, Christl A. Donnelly, Oliver Ratmann, H. Juliette T. Unwin. 2021. Associated orphanhood and caregiver death in the United States. *Pediatrics* e2021053760.

12 Vivek H. Murthy. 2021. *Protecting Youth Mental Health: The U.S. Surgeon General's Advisory*. Available at <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf>.

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with economic, educational, and social supports based on socioeconomic status, such as free school lunches. Youth in rural areas faced special challenges participating in school or accessing mental health services. Households faced language and technology barriers to accessing health care services and education. Furthermore, though these groups are often discussed separately, many children are situated at the intersection of these populations, which has compounded the difficulties arising during the pandemic.

In many ways, the pandemic exacerbated trends that existed before it began. In 2019, one in three high school students and half of female students reported persistent feelings of sadness or hopelessness, a 40 percent increase from

2009.<sup>13</sup> Between 2016 and 2020 the number of children diagnosed with anxiety between the ages of 3 and 17 grew by 29 percent and those diagnosed with depression grew by 27 percent.<sup>14</sup> In 2020, death by suicide was the second leading cause of death for young people between the ages of 10 and 14.<sup>15</sup> In 2020, among adolescents aged 12 to 17, 12 percent said they had serious thoughts of death by suicide, 5.3 percent had a death by suicide plan, and 2.5 percent attempted death by suicide in the past year.<sup>16</sup> “If we can’t address the mental health issues children are facing, it cascades to impact everything else they’re going through,” Okolo said.

## REOPENING SCHOOLS

On December 8, 2020, President-Elect Biden promised to get children back into classrooms and relaunch in-person instruction during the COVID 19 pandemic, Okolo recounted. He said that if Congress would provide the funding so that students, educators, and staff can be protected and if states and cities would put strong public health measures in place, the new administration would work to see that the majority of schools were open by the end of its first 100 days.

On its first full day in office, the administration published its National Strategy for the COVID-19 Response and Pandemic Preparedness, which laid out the administration’s national strategy.<sup>17</sup> It reiterated the administration’s commitment to get a majority of K–8 schools safely open for in-person instruction within 100 days and to work with states and local school districts to support COVID-19 testing in schools. On February 12, 2021, the Centers for Disease Control and Prevention (CDC) published comprehensive guidance on how schools could operate safely for in-person instruction.<sup>18</sup> The same day, the Department of Education released the first

volume of its Strategies for Safely Reopening Elementary and Secondary Schools, which focused on strategies to implement CDC’s recommended mitigation and prevention strategies.<sup>19</sup> On March 2, 2021, President Biden issued a directive to prioritize K–12 educators, school staff, and child care workers for vaccination, setting a goal of getting all these essential workers at least one shot in the month of March, and by the end of that month over 80 percent of educators and staff had received at least one dose.

On March 10, 2021, the American Rescue Plan Act was passed, which provided critical funding from Congress to support the pandemic response, including getting schools safely open for in-person instruction. The bill provided \$122 billion to keep schools open, combat learning loss, and address the social and emotional needs of students. A week later, on March 17, the administration announced that \$10 billion of the American Rescue Plan’s funding for COVID-19 testing would be allocated to K–12 schools through CDC, in part to support their school testing programs. Also that

13 Data are available at <https://www.cdc.gov/healthyyouth/data/yrbs/pdf/YRBSDataSummaryTrendsReport2019-508.pdf>.

14 Lydie A. Lebrun-Harris, Reem M. Ghandour, Michael D. Kogan, and Michael D. Warren. 2022. Five-year trends in US children’s health and well-being, 2016-2020. *JAMA Pediatrics* 176(7):e220056.

15 Data are available at <https://www.cdc.gov/suicide/facts/index.html>.

16 Data are available at <https://www.samhsa.gov/data/data-we-collect/nsduh-national-survey-drug-use-and-health>.

17 The strategy is available at <https://www.whitehouse.gov/wp-content/uploads/2021/01/National-Strategy-for-the-COVID-19-Response-and-Pandemic-Preparedness.pdf>.

18 An updated version of the guidance is available at <https://www.cdc.gov/coronavirus/2019-ncov/community/schools-childcare/k-12-childcare-guidance.html>.

19 An updated version of the handbook is available at <https://www2.ed.gov/documents/coronavirus/reopening.pdf>.

month, the Department of Education released the second volume of the COVID-19 Handbook, which focused on strategies to address students' social, emotional, mental health, and academic needs and to advance equity in reopening efforts.<sup>20</sup> By the end of the month, on April 29, 2021, which marked the administration's first 100 days of office, about 80 percent of public elementary and middle schools were offering some form of in-person instruction, either part time or hybrid, and about half of those schools were offering full-time in person instruction. "The President kept his promise," said Okolo.

By the start of the 2021–22 school year, schools were open for instruction while continuing to leverage federal vaccination testing and other mitigation resources to keep students, educators, and staff safe, Okolo continued. The omicron wave that started later in 2021 challenged these efforts, but the federal government sent millions of tests and experts directly to schools to support their work, with American Rescue Plan funding already available to schools to support testing programs. Schools were connected with surge testing sites deployed over the holidays and to other free community-based testing sites supported by federal funding. CDC released guidance on an innovative approach that allowed students to safely remain in their classrooms during a quarantine period after exposure as long as they wear a well-fitted mask and test at least two times in seven days following an exposure. As a result, when schools returned from their holiday break in January 2022, 96 percent of schools across the nation were still open and providing in-person instruction.

The administration actively worked with the American Federation of Teachers and the National Education Association, which collectively represent more than 5 million educators and school staff, to encourage members to get updated COVID-19 booster shots as soon as possible, said Okolo. Furthermore, since all children over six months of age are now eligible to be vaccinated, the administration has called on all school districts to host at least one school-located vaccine clinic, and it is providing the resources any school needs to operate a clinic. The administration continued its efforts to provide robust access to COVID-19 testing in schools to detect infection early. Extending an earlier initiative, the administration made an additional 5 million over-the-counter rapid tests, 5 million swab-and-send PCR tests, and additional point-of-care rapid tests available to all schools for free. These tests were also available to child care providers and Early Education Learning Centers, building on \$40 billion in support secured for child care providers through the American Rescue Plan. In addition, the administration helped schools implement critical indoor air quality improvements through federal funding, guidance, and recognition. To leverage the power of competition, champion schools and districts were recognized for leading the way on indoor air quality.

Finally, shortly before the symposium, the White House encouraged families to catch up on routine childhood vaccines, understanding that children are facing more than just COVID-19 with regard to potential infection and illness.

## ADDRESSING THE HOLISTIC HEALTH AND WELL-BEING OF CHILDREN

In March 1, 2022, while delivering the State of the Union address, President Biden proclaimed, "Let's take on mental health, especially among our children, whose lives and education have been turned upside down," and the next day Secretary of Health and Human Services Xavier Becerra announced a national tour to strengthen mental health. But this was far from the first time that the Biden-Harris administration had spotlighted the mental health of children or made investments in this area, said Okolo. Examples of

previous commitments included \$800 million in American Rescue Plan funding to support students experiencing homelessness, including wraparound services to enable those students to attend school and participate fully in any school activities; \$25 million to help expand online purchasing under the Supplemental Nutrition Assistance Program (SNAP) and the development of mobile payment technologies, which allowed the Department of Agriculture and the Department of Education to partner to ensure

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<sup>20</sup> An updated version of the handbook is available at <https://www2.ed.gov/documents/coronavirus/reopening-2.pdf>.

that no child goes hungry; and \$47.6 million in new grant funding opportunities developed through the Bipartisan Safer Communities Act, which allocated funding toward mental health, including trauma care for schoolchildren.

**The issues generated by the pandemic “can’t and won’t be solved overnight,” Okolo warned. But she proposed three priorities for policymakers, practitioners, and the public in moving forward.**

**The first is cultivating mental health and mitigating psychological distress among young people.** In 2021, Surgeon General Vivek Murthy released an extensive report that outlined actions to support youth mental health, including recognizing that mental health is an essential part of overall health; empowering youth and their families to recognize, manage, and learn from difficult emotions; ensuring that every child has access to high-quality, affordable, and culturally competent mental health care; supporting the mental health of children and youth in educational, community, and child care settings; addressing the economic and social barriers that contribute to poor mental health for young people, families, and their caregivers; and increasing data collection and research to identify and respond to youth mental health needs more rapidly. States and localities like Washington State “have already heeded this call and are stepping up,” said Okolo. Shortly before the symposium, the Health Resources and Services Administration awarded nearly \$20 million to 56 organizations nationwide to support and expand pediatric mental health care access, and one of those awardees was the Washington State Department of Health. Even before then, Washington State had required all school websites to provide access to information and resources on behavioral health, including mental health—“a simple but impactful step.”

**The second priority she cited is improving outcomes for children who have experienced the death of a parent or caregiver.** These include maintaining children in their

families when possible, closely tending to families who are grieving a loved one during the pandemic, and rapidly providing access to kinship or foster care services for children without a larger family that can step in. This work also has to address racial and structural inequities to reach the children most impacted by orphanhood. It may require strengthening economic supports to those families, high-quality child care and educational support, and evidence-based programs to improve the parenting skills and family relationships of new caregivers. “Perhaps most immediately, we, including the news media, experts, and general public, must make a concerted effort to center the children who have lost a parent or caregiver to COVID-19 among those in our society most impacted by the pandemic,” she said.

**The third priority is focusing on issues of mental health and caregiver loss that have been exacerbated for communities of color, children from families of lower socioeconomic status, and children from communities hardest hit by the pandemic.** As an example of the kind of work needed, Okolo noted that when vaccinations became available to all adults in April 2021, there was a vaccination gap of about nine percentage points between Black and brown individuals and white individuals. The administration led an effort to close that gap, which was successful by September 2021, “but it took an all-of-society effort to get there.” Church leaders, community-based organizations, faith-based organizations, and physicians talked to local communities in person and on the radio. Neighbors checked on one another to ask if they had been vaccinated. Barbershops and hair salons became places to talk about vaccines and “meet people where they are.” Vaccination programs spanned pharmacies, community-health centers, and mobile vaccination units. “Everyone was involved,” said Okolo. “It’s going to take that same sort of transformational change to support mental health and mitigate the impacts of orphanhood among grandchildren.” “It’s going to take that same sort of transformational change to support mental health and mitigate the impacts of orphanhood among grandchildren.”

## A MESSAGE FOR YOUNG PEOPLE

Okolo spoke directly to young people attending the symposium. “First and foremost, one thing we all forget is that asking for help is actually a sign of strength,” she

said. Mental health challenges are real, common, and relatable. “Struggling with your mental health doesn’t mean you’re broken or that you did something wrong.” Mental

health is shaped by many factors, including biology and life experiences like living through a pandemic. “If you’re in crisis right now, you can pick up your phone and dial or text 988, the new suicide and mental health crisis lifeline, to speak with trained counselors 24/7 or to get help in other ways.” She also encouraged young people to invest in healthy relationships, find ways to serve their communities, and take care of their bodies and minds. “That might include turning off news related to COVID-19 . . . and learning and practicing techniques to manage stress and other difficult emotions.” It also is likely to include being more intentional about the use of social media, video games, and other technologies.

Earlier in 2022, Okolo was invited back to her high school to speak to students in grades 9 through 12 at their first in-person assembly since the onset of the pandemic. “Toward the end of my remarks, after I discussed my journey from their seats to my role at the White House, I told them this:

**I really believe that the most powerful way, maybe the only way, for us to overcome the very real and scary challenges at the moment that we are living in as a society, is to find your people within the person sitting next to you. A person you may not know. We are the people who look out for one another. We try to understand each other’s stories.”**

The COVID-19 pandemic has extended the bounds of community. “As we think about mitigating the impacts of the COVID-19 pandemic on children, it’ll take all of us. Public sentiment can still treat children like a separate segment of society unimpacted by the pandemic beyond their schooling and education. But as we recognize the astonishing social, emotional, and familial impacts the pandemic has had on children and the health of our youth, I encourage all of us to take a first step of approaching the young people in our lives and checking in that they’re okay. Take the first step of just listening to and understanding them.”

## RURALITY, RESILIENCE, AND RESEARCH

**“As we recognize the astonishing social, emotional, and familial impacts the pandemic has had on children and the health of our youth, I encourage all of us to take a first step of approaching the young people in our lives and checking in that they’re okay.” –Osaremen Okolo**

In response to a question about the effects of rurality on children, Okolo pointed to factors that can pull in divergent directions. On the one hand, people tend to know each other, including children, more in rural communities. They can look out for each other and check in on children to see how they are doing. Even these everyday interactions can help children get the support that they need. But rural areas also face challenges. Broadband internet access can be more difficult, causing problems both with education and health care, including mental health care. The American Rescue Plan invested in broadband in rural areas to address this problem, Okolo noted, and rural schools have received other forms of funding from the federal government that they can use to address the challenges of rurality in responding to a pandemic.

Asked a related question about how to build resilience in children, she again pointed to a duality. Resilience is often

considered a positive trait, as when children are praised for being resilient. But children who appear to be resilient because they are back in school or playing on sports teams may be simply going through the motions. What looks like resilience may be obscuring other issues with which they are struggling. More than just being back to a pre-pandemic state, resilience “means taking intentional steps and making intentional efforts to engage children where we know they may be struggling.” Building resilience has to mean supporting the mental health of children, easing social isolation and anxiety, and supporting children who have lost a primary caregiver or parent.

Responding to a question about the most fundamental shift in understanding caused by COVID-19 that she hopes will persist, Okolo pointed to the investment made in the health and well-being of the American people, including children. The American Rescue Plan was a \$1.9 trillion bill, with about \$400 billion dollars dedicated to public health. “That level of public health investment has not been made in this nation. And we were able to do transformative work with those resources.” However, this work cannot continue unless funding is sustained. Policymakers tend to respond to crises, as was the case with COVID-19. But

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### 1. A Path Forward

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long-term investments are needed to not only mitigate the current pandemic but prepare for future pandemics. One such investment is building a public health workforce, which the COVID-19 response did through a multiyear program to support training done by states, localities, tribes, and territories. Similarly, many states and localities have leveraged COVID-19 response funding to increase school-based programming for mental health support, which needs to continue, Okolo said. "We all need to come together to think collectively about how we can transform the educational experience and improve it for all children across the U.S."

**"If we can't address the mental health issues children are facing, it cascades to impact everything else they're going through." –Osaremen Okolo**

Okolo also directed attention to how quickly a vaccine was developed, a speed previously unheard of. "But that's only because there was research happening at NIH on coronaviruses already." Research quickly led to the tools needed to counter the virus, including vaccines, tests, and treatments. Today, vaccines are available for anyone older than 6 months, COVID-19 testing is free, accessible, and rapid, and health centers have treatments for older people so that they are less likely to be hospitalized. The administration

is also investing in a National Research Action Plan on Long COVID Impacts, both for understanding the condition and for providing the services that people need. All these developments are in sharp contrast to experiences with past epidemics.

She warned about treating the current generation of children as somehow permanently harmed by going through the pandemic. This generation of children should not be labeled or thought of as the "COVID-19 generation," she said, "forever attaching some stigma to this generation of youth... I'm urging us to work together to leverage the tools we have and to advocate for the action and additional resources that will be necessary to prevent the necessity of such a label."

Finally, a Washington fellow of the American Junior Academy of Sciences asked about the most influential risk factor for children during the pandemic that could lead to long-lasting social and emotional impacts.

**"Learning loss and academic loss are really critical. But as a public health practitioner, I think that the health issues, the mental health issues, that children are facing, cascade to impact everything else they're going through.... I hope that we take it upon all of us to work within communities to support the mental health of each other, and especially children."**

## 2. Physical Health

### The Impacts of COVID-19 on the Physical Health of Children

In the first panel discussion of the symposium, three speakers examined the effects of the COVID-19 pandemic on the physical health of children. While children generally are less affected than adults by the acute phase of infection with SARS-CoV-2, the consequences of COVID-19 in children can be severe, and much remains unknown about the long-range effects of the virus on their health.

#### WHAT DOES COVID-19 LOOK LIKE IN CHILDREN?

As of the date of the symposium, about 15.5 million cases of COVID-19 had occurred among children younger than 18, representing 17 percent of the approximately 89 million cases that had occurred in the United States.<sup>21</sup> “Fortunately, when it comes to deaths from COVID, that proportion is much lower,” said Sara Vora, associate professor of pediatric infectious disease and virology at Seattle Children’s Hospital. Of approximately 905,000 deaths from COVID-19 before early October 2022 in the United States, 1,781 had occurred in children less than age 18, representing about 0.2 percent of the total.

The proportions have been similar in Washington State, said Vora. During a two-week period in the fall of 2022 (September 10–24), 2,930 cases of COVID-19 were reported in children (155.4 cases per 100,000 population), with the highest case rate among children younger than 4 (178.2 cases per 100,000 population).<sup>22</sup> There were 47 hospitalizations among children, or 2.5 hospitalizations per 100,000 population. Between January 1, 2021, and September 24, 2022, 22 deaths from COVID-19 were reported in children in Washington State.

Until the end of 2021, the number of cases among children 5–17 years of age in the United States was higher than among 0- to 4-year-old children, but since then the situation has reversed (Figure 2-1). Furthermore, the number of cases in children was higher in the late summer of 2022 than at any

time earlier in the pandemic except for the initial omicron surge in the winter of 2021–22. COVID-19 is “an ongoing problem,” said Vora. “It is certainly not over.”

The effects of COVID-19 in children can range from no symptoms at all to mild or severe symptoms. The initial effects are a direct response to the virus; later, patients’ inflammatory responses play a larger role in the symptoms that occur. At Seattle Children’s Hospital, the range of symptoms led to the development of clinical guidance to standardize care of acute COVID, which was in its eleventh version as of the symposium. “This has been an evolving process over the last two and a half years, based on data as it emerges,” Vora said. “And from what I’ve heard across the country, people are using this guidance.”

Severe disease in children and adolescents has been associated with several risk factors: severely immunocompromised patients, patients with obesity, and patients who are dependent on technologies to help them breathe. Moderate risk factors include diabetes, other immunocompromised states, sickle cell disease, and chronic cardiac, respiratory, or kidney disease. Another risk factor is not being immunized, which Vora described as “probably the number one” factor in decreasing risk for individual patients.

Treatment methods for children have evolved largely from the experience with adults, but over time more specific

<sup>21</sup> Data are available from <https://covid.cdc.gov/covid-data-tracker/#datatracker-home>.

<sup>22</sup> Data are available from <https://doh.wa.gov/emergencies/covid-19/data-dashboard>.

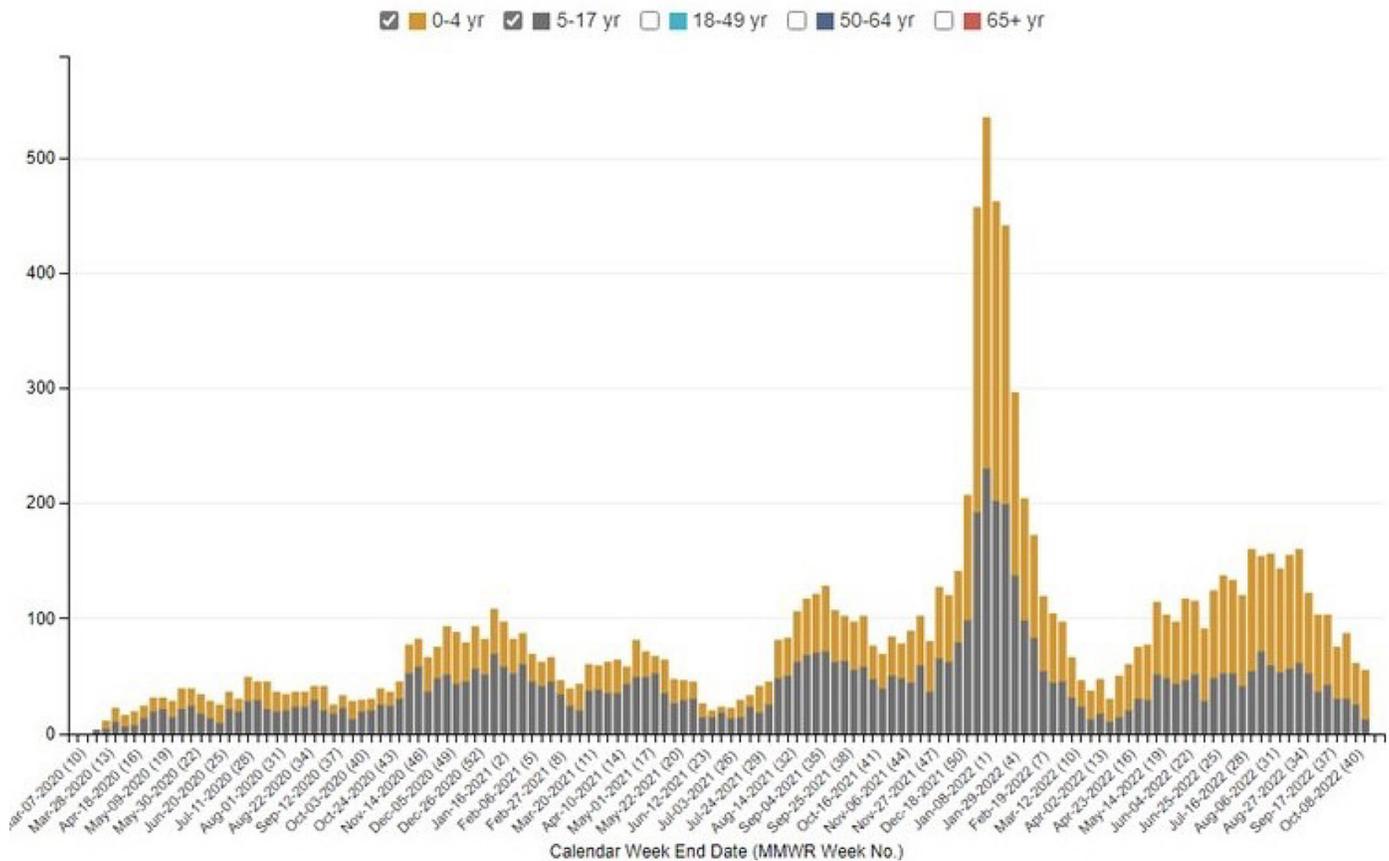
2. Physical Health

pediatric data have also been emerging. Treatments include antivirals, monoclonal antibodies, immunomodulators, and other preventative agents. A major problem is that treatment options are very limited for young children, Vora noted. “In fact, for kids under 12, we have only remdesivir, which is intravenous, so we have no oral options for treatment of COVID.” Even with the treatments available for older children, the studies that led to the emergency use authorizations for those treatments did not include pediatric data. “That’s what we grapple with as pediatricians—weighing the risks and benefits of using these agents in our patients.” Data gathered from Seattle Children’s Hospital from 2021 through

2022 on the use of COVID-19 antivirals in high-risk pediatric patients have added information about the safety of these medicines in children and teens.<sup>23</sup>

The effects of COVID-19 can be delayed, as in the case of multisystem inflammatory syndrome in children (MIS-C), which “really took us in the pediatric community by surprise in 2020 when we saw reports of this entity emerging from the UK.” MIS-C typically occurs four to six weeks after acute infection and presents with fever, laboratory evidence of inflammation, the involvement of two or more organs (cardiac, renal, respiratory, hematologic, gastrointestinal, dermatologic, neurologic), and no alternative plausible diagnosis. Based

**FIGURE 2-1** Cases of COVID-19 among children in the United States peaked in the winter of 2021–22, with younger children overtaking older children in case counts. *Source: Centers for Disease Control and Prevention*



23 Surabhi Vora, Janet A. Englund, Indi Trehan, Alpana Waghmare, Ada Kong, Amanda Adler, and Danielle M. Zerr. Monoclonal antibody and antiviral therapy for treatment of mild-to-moderate COVID-19 in pediatric patients. *Pediatric Infectious Disease Journal*.

on similar conditions, treatment has included steroids and antibodies. Fortunately, the incidence of MIS-C has decreased with each subsequent SARS-CoV-2 variant.

Children are also at risk for long COVID, though data are still limited. A recent meta-analysis of 21 studies and more than 80,000 children found that 25 percent had ongoing symptoms 4 to 12 weeks after infection and also after 12 weeks.<sup>24</sup> The most common symptoms were mood alterations (17 percent), fatigue (10 percent), and sleep disturbances (8 percent). In addition, these patients had increased shortness of breath, lack of smell, and/or fever compared to controls without SARS-CoV-2 positivity.

**COVID-19 is “an ongoing problem. It is certainly not over.” –Sara Vora**

Finally, Vora reported on the multiple studies that have shown greater impacts of COVID-19 on Hispanic and Black populations in both adults and children, which has also been evident in rates of Multisystem Inflammatory Syndrome in

Children (MIS-C).<sup>25</sup> In addition, disparities have been evident in treatments—for example, antivirals were initially dispensed least in zip codes with the highest social vulnerability.<sup>26</sup> Seattle Children’s Hospital has so far not found evidence of disparity in treatment in terms of those who had treatment requested versus those approved in terms of ethnicity and race. However, “this does not account for disparities in actual requests, which is harder to measure,” Vora said. “This is an ongoing process. We’re looking at our experience and trying to monitor for any inequities.”

In general, despite less severe disease and deaths, children are still significantly impacted by COVID-19 through acute infection, MIS-C, and long COVID, Vora concluded. Children need access to SARS-CoV-2 therapeutics to prevent infection and treat disease, they should be included in research studies early on, and more research is needed to understand the long-term impacts of infection on children and to closely monitor disparities.

## COVID-19 VACCINES FOR CHILDREN

The Seattle Flu Study, which included investigators from the University of Washington, Seattle Children’s Hospital, and the Fred Hutchinson Cancer Center, was the first to identify a case of SARS-CoV-2 transmission in Washington State, which “really changed my life, our lives, and perhaps everyone’s life,” said Janet Englund, principal investigator of the New Vaccine Surveillance Network, Center for Disease Control, Seattle Children’s Hospital. “We at Seattle Children’s have been involved in SARS-CoV-2 from the very beginning.” principal investigator of the New Vaccine Surveillance Network, Center for Disease Control, Seattle Children’s Hospital. “We at Seattle Children’s have been involved in SARS-CoV-2 from the very beginning.”

Children die less often from COVID-19 than do adults, but they still need to be vaccinated, Englund observed. They can efficiently transmit SARS-CoV-2, accounting for 10 percent of cases, and infection can lead to MIS-C. Furthermore, the indirect consequences of COVID-19 in children can be devastating, including increased mental health challenges. “Our emergency department is crammed full, and has been crammed full, of children seeking care for mental health as well as physical health,” said Englund.

Many factors influence the pediatric response to vaccination, including factors intrinsic to the child such as age or comorbidities, perinatal host factors, behavioral

24 Sandra Lopez-Leon, Talia Wegman-Ostrosky, Norma Cipatli Ayuzo Del Valle, Carol Perelman, Rosalinda Sepulveda, Paulina A. Rebolledo, Angelica Cuapio, and Sonia Villapol. 2022. Long-COVID in children and adolescents: a systematic review and meta-analyses. *Scientific Reports* 12(1):9950.

25 Laura D Zambrano, Kathleen N. Ly, Ruth Link-Gelles, Margaret M. Newhams, Manziat Akande, Michael J. Wu, Leora R. Feldstein, Keiko M. Tarquinio, Leila C. Sahni, Becky J. Riggs, Aalok R. Singh, Julie C. Fitzgerald, Jennifer E. Schuster, John S. Giuliano Jr., Janet A. Englund, Janet R. Hume, Mark W. Hall, Christina M. Osborne, Sule Doymaz, Courtney M. Rowan, Christopher J. Babbitt, Katharine N. Clouser, Steven M. Horwitz, Janet Chou, Manish M. Patel, Charlotte Hobbs, Adrienne G. Randolph, Angela P. Campbell, and Overcoming COVID-19 Investigators. 2022. Investigating health disparities associated with Multisystem Inflammatory Syndrome in Children after SARS-CoV-2 infection. *Pediatric Infectious Disease Journal* 41(11):891–898.

26 Jeremy A.W. Gold, James Kelleher, Jake Magid, Meng, Brendan R. Jackson, Meghan E. Pennini, Diana Kushner, Emily J. Weston, Bobby Rasulnia, Sachiko Kuwabara, Kelly Bennett, Barbara E. Mahon, Anita Patel, and John Auerbach. 2022. Dispensing of oral antiviral drugs for treatment of COVID-19 by zip code-level social vulnerability—United States, December 23, 2021–May 21, 2022. *Morbidity and Mortality Weekly Report* 71(25):825–829.

factors, nutritional factors, and factors associated with the administration of the vaccine. To study these responses and the safety and efficacy of immunization, Seattle Children's Hospital became involved with a study of the Pfizer vaccine in children ages 5 to 11, which led to FDA and CDC approval of the first vaccine in children. In Seattle and at 40 sites around the world, the vaccine was tested at various dose levels, leading to the conclusion that the antibody response to the vaccine in children 5 to 11 years of age was the same as for adolescents and young adults. In Seattle, about 200 children representative of the broader community were enrolled, with each child undergoing multiple blood draws and nose swabs. "People really wanted to be involved in research," she said. "These kids were so brave and so amazing."

The study showed that different dose levels produced similar immune responses but different levels of side effects, mostly fever and headache, which led to a recommendation that the dose levels be lower for 5- to 11-year-olds—just a third of the dose given to adolescents. Vaccination yielded 91 percent protection against COVID-19, which "is better than we get with flu vaccine," said Englund.<sup>27</sup> The vaccine's effectiveness has decreased somewhat with new variants of the virus, but the study's results were sufficient to secure emergency use authorization for the vaccine in October 2021. According to recent evidence, every million vaccinations in children 5 to 11 years old prevents hundreds of hospitalizations, MIS-C cases, and admissions to intensive care units, Englund reported.<sup>28</sup>

To study the effects of the Pfizer vaccine in children younger than 5, Seattle Children's Hospital also participated in a study of 2,250 children worldwide who received two doses of the vaccine separated by 21 days. This study showed that the immune response in 2- to 4-year-olds was not as good as in older children, leading to the recommendation that younger children receive three rather than two doses for their primary series. This finding slowed down the approval process, but the FDA and CDC recommended the three-dose series for the Pfizer vaccine in June 2022. Englund also noted that the antibody response is better with three doses of the

Moderna vaccine, though it is licensed in young children for two doses as the primary series.

At the time of the symposium, Englund and her colleagues at Seattle Children's were studying the bivalent booster vaccine, which had already been approved by the FDA and CDC, though few data exist to demonstrate its safety and efficacy in children. They also were studying vaccination in children with cancer and transplants, "so we are really busy here."

With an approved COVID-19 vaccine available for children, what are the next steps? Governments and medical organizations need to recommend vaccination, Englund said, and the vaccine needs to be readily available in clinics, schools, and pharmacies. Perhaps most important, widespread publicity and education need to occur with families, health care workers, and the community regarding the risks and benefits of the vaccines. In that respect, Englund briefly discussed the work Seattle Children's Hospital has done with the Seattle Public Schools, which she described as "a model for success." Using a multipronged approach, the hospital has partnered with the school district and with the community to use on-site nurses and personnel who are multilingual and understand their patients and the surrounding culture. Principals, teachers, and staff work to promote vaccine clinics. Examples of local and regional health care providers that have participated include the Othello Station Pharmacy, which serves the Somali community in Seattle, and the Seattle Urban Indian Health Board. "Seattle Public Schools has done, in my opinion, an amazing job," said Englund. Seattle has the highest vaccination rate in the country for children 5 to 11 years of age, at over 70 percent. However, Seattle still has disparities in vaccination rates, she added. The rates for multiracial, white, and Asian children are approaching 90 percent, while rates for African American, Pacific Islander, and Native American children are under 80 percent. "We need to do better, and we are working on it."

Finally, Englund noted that after a massive reduction in the transmission of respiratory viruses associated with

27 Emmanuel B. Walter, Kawsar R. Talaat, Charu Sabharwal, Alejandra Gurtman, Stephen Lockhart, Grant C. Paulsen, Elizabeth D. Barnett, Flor M. Muñoz, Yvonne Maldonado, Barbara A. Pahud, Joseph B. Domachowski, Eric A. F. Simões, Uzma N. Sarwar, Nicholas Kitchin, Luke Cunliffe, Pablo Rojo, Ernest Kuchar, Mika Rämetsä, Iona Munjal, John L. Perez, Robert W. Frenck Jr., Eleni Lagkadinou, Kena A. Swanson, Hua Ma, Xia Xu, Kenneth Koury, Susan Mather, Todd J. Belanger, David Cooper, Özlem Türeci, Philip R. Dormitzer, Uğur Şahin, Kathrin U. Jansen, William C. Gruber. 2022, and C4591007 Clinical Trial Group. 2022. Evaluation of the BNT162b2 Covid-19 vaccine in children 5 to 11 years of age. *New England Journal of Medicine* 386(1):35–46.

28 See <https://www.cdc.gov/vaccines/acip/recs/grade/covid-19-pfizer-age-5-11-eua-etr.html>.

the pandemic stay-at-home order, many different kinds of respiratory viruses were being transmitted in the community, including not just SARS-CoV-2 but influenza viruses, cold viruses, and respiratory syncytial virus. After several years of no flu exposure, an early and severe flu and RSV season was expected in the United States in the winter of 2022–23. “These other viruses are causing our hospitals to be very full—we don’t have any beds some of the time.” Children who have not been sick for several years and were not exposed to viruses are getting sicker than they would have otherwise.

Furthermore, children are behind on their routine vaccines, which is leading to outbreaks of measles, pertussis, mumps, and other vaccine-preventable diseases. “Children bear a large burden of the disease. They need the COVID-19 vaccine to prevent infectious disease and spreading,” Englund said. “We do not want children dying.”

**“Our emergency department is crammed full, and has been crammed full, of children seeking care for mental health as well as physical health.” – Janet Englund**

## IMPACT OF DELAYED AND DEFERRED PEDIATRIC CARE DURING THE COVID PANDEMIC

Washington State had many underserved pediatric sub-populations prior to the COVID pandemic, particularly in rural and urban areas, observed Chris Anderson, pediatrics clinical education director at Washington State University and medical director for Project ADAM Inland Northwest. Washington State also had significantly under-resourced services in pediatric care, especially in developmental and behavioral health and in pediatric emergency medical services. Eleven of Washington’s 39 counties did not have a single pediatrician, while others had as many as eight or more pediatricians per 10,000 children (Figure 2-2). As Anderson summarized these observations, “There are many gaps across the state.”

The COVID pandemic has further caused significant delays, deferments, and lapses in pediatric care across the state of Washington and nationally, with a disproportionate impact on economically and socially disadvantaged children. Anderson defined neglected pediatric care as care that is recommended but not followed through due to parental concerns or unwillingness to engage in care. Deferred pediatric care he defined as care that is recommended but not followed through due to disruption of clinical care delivery. And disrupted pediatric care is either neglected or deferred care or both with negative consequences for the child.

The disruptions created by COVID have been caused by a number of different factors, including changes in the structure of health care clinics, fears of contracting the

disease, having close contact with someone who has COVID, patients having COVID or symptoms that could be COVID, scheduling changes in procedures, and poor access to care. In general, data on gaps in care caused by the pandemic are scarce, but some are available. A September 2020 national survey of parents found that more than a quarter reported impacts from delaying or foregoing children’s health care.<sup>29</sup> Almost one in five respondents reported that the delayed or foregone care had worsened one or more of their child’s health conditions, and about 15 percent reported that their child was limited in the ability to go to school or child care or do schoolwork. Furthermore, disruptions were more common in families with incomes less than 250 percent of the federal poverty level, with these disruptions including immunizations and treatment or follow-up care.

**“Erosion and loss of trust in even the most basic, evidence-based preventive health care is exacerbating the problem.” – Chris Anderson**

Another national study that used data from the Census Bureau found that “the prevalence of missed or delayed preventive visits was significantly higher among respondents who reported material hardships (ie, not caught up on rent/mortgage, difficulty paying usual household expenses, children not eating enough because of lack of affordability) than among respondents who did not report material

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29 Dulce Gonzalez, Michael Karpman, Genevieve M. Kenney, and Stephen Zuckerman. *Delayed and Forgone Health Care for Children during the COVID-19 Pandemic*. Urban Institute. Available at [https://www.urban.org/sites/default/files/publication/103652/delayed-and-forgone-health-care-for-children-during-the-covid-19-pandemic\\_1.pdf](https://www.urban.org/sites/default/files/publication/103652/delayed-and-forgone-health-care-for-children-during-the-covid-19-pandemic_1.pdf).

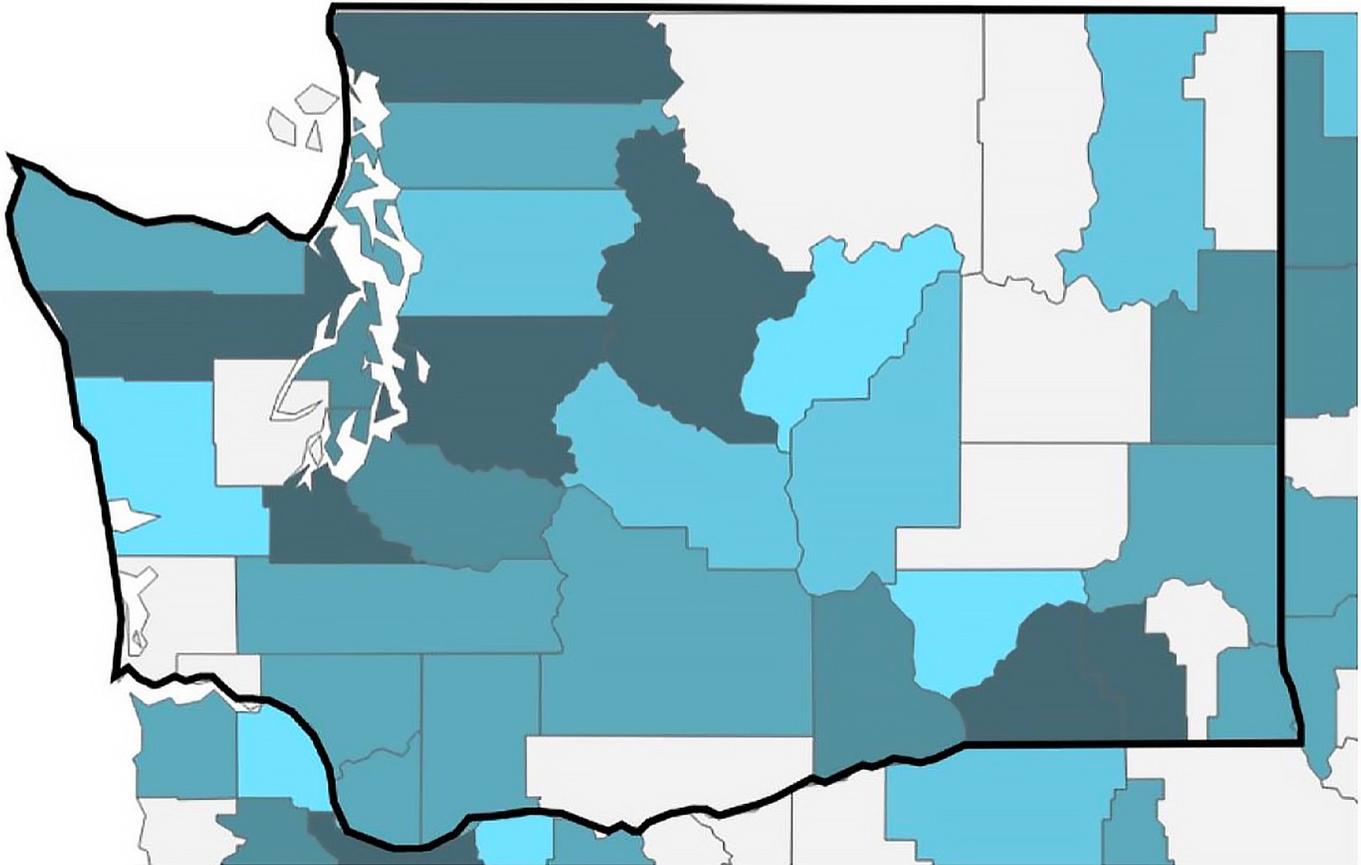
2. Physical Health

hardships.<sup>30</sup> This study concluded that “programs and policies could reduce gaps in children’s preventive care caused by the pandemic, with a particular focus on addressing social determinants of health.” Using the same data set, a separate study looked at the reasons for children missing or skipping preventive medical checkups during the pandemic.<sup>31</sup> In almost 30 percent of cases, the health care provider’s location was closed due to the coronavirus pandemic, and in 5 percent of

the cases the children in this survey had no health insurance or had a change in health insurance during the pandemic.

In Washington State, the Department of Health found that vaccine administration in 0–18 year-olds remains below pre-pandemic levels and that vaccination coverage declined in all age groups except in 13- to 17-year-olds, with the largest impact on the youngest age groups.<sup>32</sup> This report concluded that “efforts should focus on increasing coverage

**FIGURE 2-2** The number of pediatricians in Washington State’s 39 counties ranges from zero (white) to more than 8 per 10,000 population (darkest blue). *Source: Chris Anderson*



30 Lydie A. Lebrun-Harris, Olivia R. Sappenfield, and Michael D. Warren. 2022. Missed and delayed preventive health care visits among US children due to the COVID-19 pandemic. *Public Health Reports* 137(2):336–343.

31 Kimberley H. Nguyen, Kimchi Nguyen, Devika Lekshmi, Laura Corlin, and Richard W. Niska. 2022. Delays in children’s preventive health services during the COVID-19 pandemic. *Family Medicine* 54(5):350–361.

32 Kelley Meder, Emily Youngers, Teal Bell, Ashley McHugh, and Jessica Marcinkevage. 2022. Effects of the COVID-19 pandemic on vaccine doses administered and routine childhood vaccination coverage. Washington State Department of Health.

as the pandemic continues, to increase rates back to pre-pandemic levels.”

Finally, Anderson reported on an informal survey of 127 faculty pediatricians with the Washington State University College of Medicine, which revealed several prominent themes. In response to the question “What has been the impact of the COVID pandemic to your patients in terms of neglected and deferred care?”, pediatricians registered impacts in terms of delayed and deferred preventive care, poor socialization, worsened mental and behavioral health, poor outcomes, misinformation, disinformation, loss of trust, and impacts to vulnerable/underserved communities. With regard to delayed and deferred care, pediatricians reported poor outcomes after home child delivery or attempted home delivery when mothers were afraid to come to the hospital, longer times to oncologic diagnosis, and waits for some specialties of up to two years. Poor socialization included COVID isolation in the neonatal intensive care unit leading to delayed contact and bonding of babies with their parents and decreases in patient interaction caused by the wearing of masks. Mental and behavioral health impacts included larger numbers of children with depression, anxiety, suicidal

thoughts, and other self harm due to social distancing measures and school closures; a lack of mental health resources and access amidst a rapidly increasing need for services; and developmental delays because children are not getting well-child care or specialized services. As one pediatrician said, “My practice as a general pediatrician has become pediatric psychiatry.”

In terms of poor outcomes, pediatricians reported uncompensated congestive heart failure caused by delayed treatment, patients who came in with more advanced disease, and mothers who died from COVID shortly after they had given birth to babies. Finally, in terms of misinformation, disinformation, and loss of trust in the pediatric community, respondents cited increased vaccine hesitancy and in some cases hostility, parental refusals of care, broken provider-parent relationships, and lowered vaccination rates. As one physician said, “the biggest need post-pandemic is to restore trust in medical care and decision making.”

As Anderson concluded, “erosion and loss of trust in even the most basic, evidence-based preventive health care is exacerbating the problem.”

## BUILDING TRUST

In response to a question about how to get families to have greater trust in health care providers, Vora said that it is easy to see how people could get confused when they are bombarded by information from so many different sources: news media, social media, friends and family, and experts. It is important to be clear and honest about what is known and what is not known, she said. It is also important for health care providers to establish trust with families and the concerned friends of patients.

Englund pointed to new understandings about how health care providers should be talking with people. “There’s really good evidence that the way you approach it makes a difference.” For example, physicians may expect that patients are going to listen to them and follow their advice, but that is not always the case. Though it can be time

consuming, Englund recommended providing “anticipatory guidance,” such as emphasizing that vaccines work and that the experience with them is extensive. That “will capture a large percentage of the people who are vaccine hesitant, [though] it will not capture everyone.”

Anderson replied that he has seen a loss of trust in his own practice. “My workday was longer by an hour or two in the earlier months of the pandemic, trying to answer questions and concerns and eliminate disinformation.” He recommended a personalized approach that “meets our patients where they live.” When confronted with misinformation, “we have to try to listen and then disavow [misinformation] in a compassionate manner. But it’s hard, and it does take a lot of time.”

## 3. Education

### Impacts of COVID on Educational Settings and Strategies for Mitigation

The impacts of COVID-19 on educational settings and strategies for mitigation was the topic of the second panel discussion of the symposium. Speakers abundantly documented that school closures contributed to significant declines in test scores, with larger declines for disadvantaged groups. The pandemic also imposed stresses on parents and students alike, one effect of which was an increase in abuse and neglect that was harder to detect with schools closed.

#### EFFECTS ON LEARNING

In just two years, the COVID-19 pandemic erased much of the gains made by 9-year-old students over the past two decades in mathematics performance, observed Ben Cowan, associate professor in the School of Economic Sciences at Washington State University. As a Brookings Institution study found, the drop in mathematics test scores in grades 3 through 8 was almost a quarter of a standard deviation, while reading scores were down as well, though not by as much.<sup>33</sup> “These are large declines,” said Cowan, “comparable to what happened to evacuees after Hurricane Katrina.”

An obvious question is whether drops in test scores matter to adult outcomes, but Cowan insisted that they do. A 2013 study of the effects of class sizes found that “test-score effects at the time of the experiment were an excellent predictor of long-term improvements in postsecondary outcomes.”<sup>34</sup> In particular, said Cowan, higher test scores in this study led to an increase in the likelihood of earning a college degree and studying in a higher earning field. “This isn’t definitive, of course, but it does seem in a number of studies—this just being one example—that test scores are at least a predictor of adult outcomes.”

**“These are large declines, comparable to what happened to evacuees after Hurricane Katrina.” – Ben Cowan**

Why did the pandemic cause such a large drop in test scores? Cowan pointed out that learning loss may have occurred even if all schools remained open during the pandemic. For example, teachers and students would have had an increased number of absences for a variety of reasons, including anxiety and stress resulting from the pandemic. However, policy decisions about school closings were clearly a big driver of the effects on students and their families. In a study that divided schools in each state into low, middle, and high levels of poverty, based on the percentage of students who qualify for free and reduced-price lunches, large differences were apparent across states in the amount of time students spent learning remotely, with some states spending more than half the 2021–21 school year in remote learning while other states had just a few weeks without in-person instruction.<sup>35</sup> However, within all the states that had roughly similar levels of remote learning, high-poverty schools had more remote learning

33 Megan Kuhfeld, Jim Soland, Karyn Lewis, and Emily Morton. 2022. The pandemic has had devastating impacts on learning. What will it take to help students catch up? Available at <https://www.brookings.edu/blog/brown-center-chalkboard/2022/03/03/the-pandemic-has-had-devastating-impacts-on-learning-what-will-it-take-to-help-students-catch-up>.

34 Susan Dynarski, Joshua Hyman, and Diane Whitmore Schanzenbach. 2013. Experimental evidence on the effect of childhood investments on postsecondary attainment and degree completion. *Journal of Policy Analysis and Management* 32(4):692–717.

35 Dan Goldhaber, Thomas J. Kane, Andrew McEachin, Emily Morton, Tyler Patterson & Douglas O. Staiger. 2022. The Consequences of Remote and Hybrid Instruction During the Pandemic. National Bureau of Economic Research Working Paper 30010.

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on average than low-poverty or mid-poverty schools. In another of multiple studies demonstrating the negative effects remote learning had on achievement, schools where learning was remote had much larger losses of proficiency in mathematics and reading-language arts than did schools that remained in person.<sup>36</sup> With schools that have larger numbers of Black and Hispanic students, the benefits of being in person were even greater than for schools with fewer Black and Hispanic students. Another study found that learning loss was more than half a standard deviation for high-poverty schools that relied heavily on remote instruction while being only about a quarter of a standard deviation for low-poverty schools that were remote just as much.<sup>37</sup>

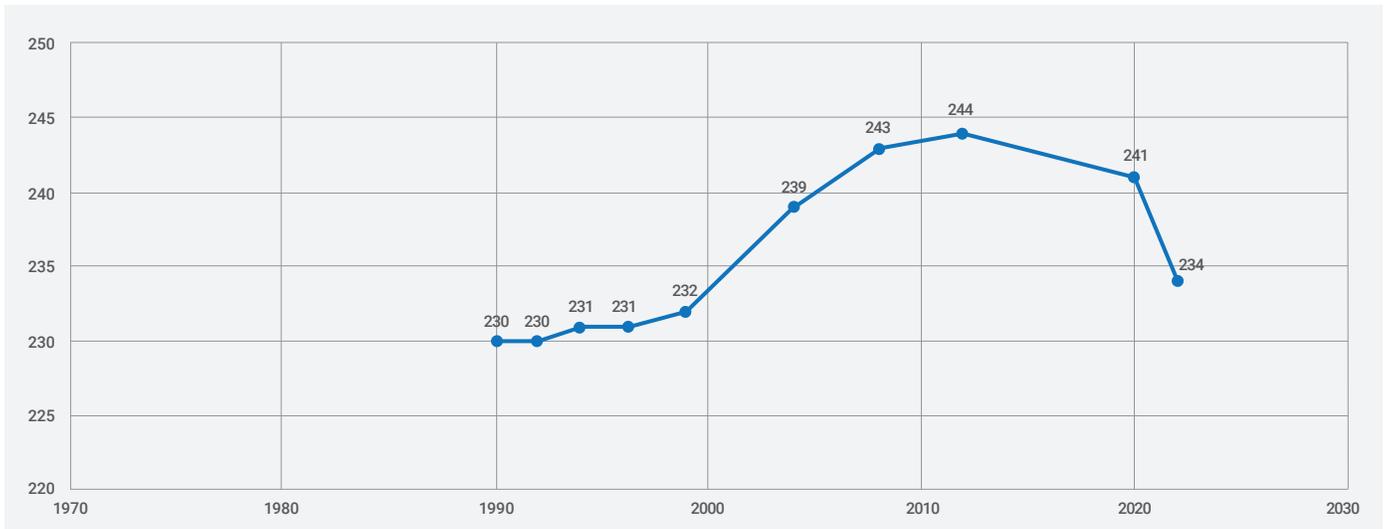
The Brookings Institution study also looked at policy interventions that could most effectively counteract the negative effects on learning from the pandemic. Based on a meta-analysis of many studies, the researchers found that reductions in class size do not, on average, have much effect

on test scores, though the variance across studies in this case was large.<sup>38</sup> Summer programs do better, according to this analysis, but the improvement is still relatively small compared to the drops in test scores. The “gold standard” for improvement, said Cowan, is tutoring, “which has been shown in many settings in many studies to improve student test scores. The difficulty, of course, is that tutoring is by far the most expensive way to do this.” Even implementing summer programs has caused shortages of teaching staff, and the problem would be much worse with one-on-one tutoring, not to mention the high costs of such an approach.

Next, Cowan described the work that he and his colleague Kairon Garcia have done on school closures and parental work outcomes. They used Current Population Survey data from the Census Bureau to measure labor market outcomes among parents based on what schools in their counties were doing, with the latter measure coming from cellphone data that made it possible to determine whether a school

**FIGURE 3-1** Average mathematics scores for 9-year-old students fell dramatically as a result of the COVID-19 pandemic.

Source: U.S. Department of Education



36 Clare Halloran, Rebecca Jack, James C. Okun & Emily Oster, 2021. Pandemic Schooling Mode and Student Test Scores: Evidence from US States. National Bureau of Economic Research Working Paper 29497.

37 Dan Goldhaber, Thomas J. Kane, Andrew McEachin, Emily Morton, Tyler Patterson & Douglas O. Staiger. 2022. The Consequences of Remote and Hybrid Instruction During the Pandemic. National Bureau of Economic Research Working Paper 30010.

38 Megan Kuhfeld, Jim Soland, Karyn Lewis, and Emily Morton. 2022. The pandemic has had devastating impacts on learning. What will it take to help students catch up? Available at <https://www.brookings.edu/blog/brown-center-chalkboard/2022/03/03/the-pandemic-has-had-devastating-impacts-on-learning-what-will-it-take-to-help-students-catch-up>.

was open or closed.<sup>39</sup> School closures had a substantially negative effect on whether women could work, with a smaller and statistically insignificant effect for men. “In terms of whether individuals are working at all, the effect seems to fall on women,” said Cowan. However, both men and women experienced a decline in whether they were full-time workers and in the number of hours worked. School closures also had negative effects on earnings, though these were less precisely estimated. In both of these cases, the effects were more severe for people with less than a college degree compared with people who had more education, especially for women. A major reason for this finding, said Cowan, is that workers with a college degree or more are often in occupations that have a greater potential for telework. “It’s not as if their lives were not disrupted,” said Cowan, but “there were much smaller effects than there were for those whose occupations didn’t have that potential.” Indeed, when schools were closed, college-educated parents reported a much larger increase in working at home than did less educated parents.

Finally, the same effects of remote learning on school performance appear to apply to college students, Cowan

observed. When West Point students were randomized between online and in-person sections of an introductory economics course, final scores were 0.22 standard deviations lower for online students, with larger effects for academically “at risk” students.<sup>40</sup> “At least in that setting, online learning was a somewhat poor substitute for students.”

In preliminary work, Cowan and Garcia have also found that when a greater share of state college classes were put online during the 2020–21 school year, men (but not women) in those states were less likely to attend college in that year. This finding, too, documents that relying on remote learning contributed to significant reductions in the value students place on college classes.

In response to a question, Cowan observed that online learning can work well for some students. “Having different options for different people based on how they learn is really important.” However, the data suggest that a lot of students did not do well with online learning during the pandemic, not to mention its many other effects on their lives.

## CASCADING DISASTER RESPONSES

Psychology research on disaster responses has uncovered phases of response that are similar across disasters, observed Kira Mauseth, co-lead of the Behavioral Health Strike Team at the Washington Department of Health and the owner of Astrum Health, LLC. An initial impact phase of 0 to 48 hours is followed by heroic and honeymoon phases, approximately 30 to 45 days post impact, characterized by high degrees of community cohesion (Figure 3-2). These are typically followed by a disillusionment phase when impacts are most acute and the size, scope, and degree of recovery that are necessary become apparent. With the first round of COVID-19, that phase occurred in the fall and winter months of 2020, just as daylight savings time was ending and the federal election was being held, which added other layers of disillusionment.

A major feature of the COVID-19 pandemic has been that the delta variants resulted in secondary impacts and the omicron variants led to tertiary impacts, both of which initiated subsequent cascades of disaster effects. In this way, the stressors of the initial disaster were reinforced. Primary stressors can include loss of loved ones, loss of jobs, sudden or unexpected moves, and critical events such as medical emergencies. Secondary stressors include financial impacts, strained relationships, educational changes or other missed opportunities, and unexpected expenses. At the systemic level, stressors include marginalization, discrimination, racism, and consequences for social and economic status. “The combination of these stressors can predict, to a certain extent, how someone may be doing in the long-term recovery, including for youth.”

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39 Kairon Shayne D. Garcia and Benjamin W. Cowan. 2022. The Impact of U.S. School Closures on Labor Market Outcomes during the COVID-19 Pandemic. National Bureau of Economic Research Working Paper 29641.

40 Michael Kofoed, Lucas Gebhart, Dallas Gilmore, and Ryan Moschitto. 2021. Zooming to Class?: Experimental Evidence on College Students’ Online Learning During Covid-19. IZA Discussion Paper No. 14356.

3. Education

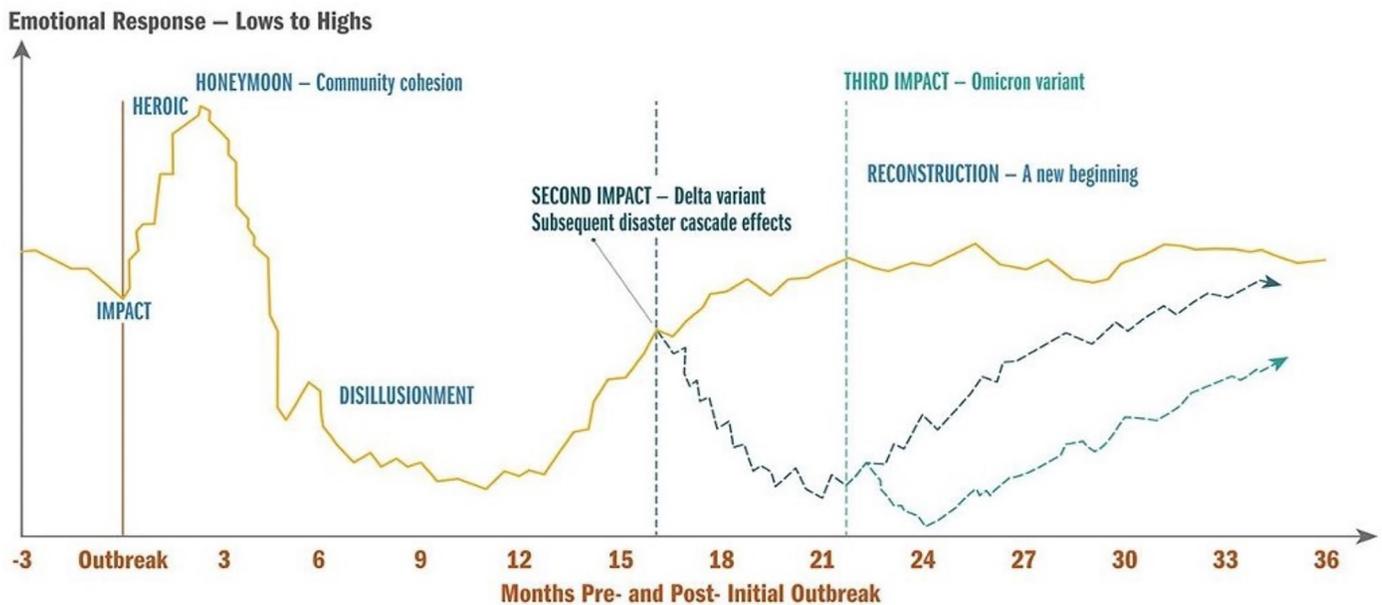
“Thankfully, resilience is the most common outcome” in disaster responses, said Mauseth, with resilience defined in this case as a recovery to baseline. “Based on coping skills and symptoms that people were experiencing prior to the original impact, the majority of the population will recover to that level.” However, after three-quarters or so of people return to a baseline state, another 15 to 20 percent experience “symptom acuity,” which Mauseth described as symptoms of anxiety, depression, or some other condition that do not rise to the level of a diagnosis. Another 7 to 10 percent experience a new diagnosis or condition, with another, smaller group experiencing chronic dysfunction, where youth or adults lose the ability to function effectively in an educational setting, at work, or socially.

**“People are walking around with slightly more activated limbic systems, resulting in a little more impulsiveness, a little more defensiveness, a little more hostility, which we’re seeing play out not just in the classroom but among adults at the grocery store, on the road, and in various other social contexts.” –Kira Mauseth**

In the classroom, an emergency, crisis, or ongoing acute stress can all affect the functioning of the brain. In a disaster cascade, the limbic system in the brain is activated, which controls emotion, impulse, and pleasure or displeasure.

When this happens, the prefrontal cortex, which controls higher level functioning, planning, and filtering, has a harder time regulating responses. “People are walking around with slightly more activated limbic systems, resulting in a little more impulsiveness, a little more defensiveness, a little more hostility, which we’re seeing play out not just in the classroom but among adults at the grocery store, on the road, and in various other social contexts,” said Mauseth. With students, emotional responses can include separation anxiety, terror, sadness, guilt, preoccupation with death, and concern about re-occurrence of the event. Cognitive responses can include difficulty concentrating and learning new information, intrusive thoughts and memories, and regression in developmental stages. Physical responses can include sleep disturbance and nightmares, hyperactivity, and various physical complaints. Behavioral responses can include crying spells, aggressive behavior, tantrums, school impairment, substance abuse, re-living events through play, increased questions and story telling about the event, increased deviance and delinquency, and sleep impairment. As a specific example, Mauseth cited a new condition called “revenge bedtime procrastination,” which is “staying up until two o’clock or three o’clock in the morning with our phones glued to our faces, in some attempt to reclaim power over our lives. These are normal reactions to an abnormal situation.”

**FIGURE 3-2** Reactions and behavioral health symptoms in disasters, including the COVID-19 pandemic, follow predictable patterns.



Getting from an emotionally fraught stage to a calm stage where information can be processed by the brain in an effective ways takes time. When adrenaline has been released into the body, for example, it takes 30 to 60 minutes for that adrenaline to dissipate. Mauseth cited a number of active coping techniques that can help re-achieve equilibrium. Get space from difficult conversations, she recommended, rather than continuing to push the issue, and account for levels of rest or tiredness before pursuing important conversations. Sensory interventions such as listening to music, taking a shower, or handling very cold objects can help people deal with anxiety. “One of the recommendations that I make to all educators is to keep frozen oranges in the nurse’s office or in the office,” she said. “Frozen oranges are a wonderful anti-anxiety technique and tool if you have a student who is struggling with panic or anxiety. Because we have so many nerve endings in our fingertips, it helps redirect that panic response and engage the parasympathetic nervous system.” To deal with exhaustion, she recommended good sleep hygiene, such as sleeping at the same times and keeping a pad of paper (but not a phone) by the bed to jot down thoughts so they can be left for the next day. To deal with depression, she recommended taking small steps in a desired direction, a personal coping plan with activities of varying lengths, movement of any kind, connection and support from others, and acknowledgment of the ways in which brain chemicals affect our thinking and moods.

## DETECTING ABUSE AND NEGLECT

When Pam Kohlmeier, a former board member of Partners with Family & Children, was a young emergency department physician in Chicago, she saw a young boy who had been beaten and was brought to the hospital by a school administrator. That “made an impression on me,” she said. “It was the impact of our schools and our educators in helping to interrupt child abuse.”

During the early months of the pandemic, Partners with Families & Children was worried about a lack of reporting from educators about child abuse. According to an article

Mauseth particularly advocated for active listening as “one of the most stabilizing behavioral health recommendations that I would suggest for children and teachers and adults alike.” Asking open-ended questions helps clarify the issues, and summarizing what was heard makes it possible to reflect on a situation. Listening to others with the intent to understand and care, not to problem solve, expresses empathy to the person doing the talking.

Purpose, adaptability, connection, and hope are the components of resilience, she said. Purpose provides meaning and importance while reestablishing structures and routines that feel motivational and meaningful. Connection provides people with stability and resources, whether those resources are other people or other forms of support. Adaptability enables people to adjust to new circumstances, while hope promises opportunities to engage with life in ways that will make things better.

Research has pointed to the steps that are effective to recover from disaster cascades, Mauseth concluded. For all people, these steps include the establishment of healthier boundaries and an orientation around core values. For educators, they include genuine presence and communication and demonstrating both boundaries and engagement. And at a systems level, positive steps include placing attention on wins and successes, facilitating cultural shifts around priorities, and contributing to a culture where people can process. Such steps will “add to our sense of hope and our sense of strength and motivation for the future.”

published on [NBCNews.com](https://www.nbcnews.com/health/kids-health/has-child-abuse-surged-under-covid-19-despite-alarming-stories-n1234713), an analysis of data from 43 states and Washington, D.C., found that reports of abuse and neglect in April 2020 dropped by an average of 40.6 percent from the levels reported in the same month of 2019.<sup>41</sup> At the same time, during the first two months of the lockdown in March and April 2020, pediatricians across the country reported treating more severe injuries caused by abuse, along with seeing an increase in fatalities. Before the pandemic, educational personnel had the highest reporting rate of abuse and neglect of children, accounting for 21

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41 Julia Ingram. 2020. Has child abuse surged under COVID-19? Despite alarming stories from ERs, there's no answer. Available at <https://www.nbcnews.com/health/kids-health/has-child-abuse-surged-under-covid-19-despite-alarming-stories-n1234713>.

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percent of reports, followed by legal and law enforcement at 19 percent and medical personnel at 11 percent.<sup>42</sup> In 2020, when schools transitioned to virtual learning, the number of referrals by educational personnel declined sharply, Kohlmeier observed, with a particularly severe impact on 6- to 12-year-old victims.

Educators have more difficulty detecting abuse during remote learning. Kohlmeier quoted Stephanie Widhalm, director of the Children's Advocacy Center for Partners with Families & Children, to say, "virtual learning allowed a camera-sized view into a child's environment. The inherent difficulty with this, however, is that it did not support an educator's ability to engage with children in a way that fully assessed a child's physical well-being, social/emotional functioning, and allowed for consistent patterns of engagement. For some children, school personnel and educators are the only identified 'safe' adults in their lives."

Kohlmeier also described a study on child abuse and neglect in the United States during the pandemic that used data from New York City, Florida, New Jersey, and Wisconsin.<sup>43</sup> It found a 20.5 percent decrease in reports of child abuse and neglect from all mandatory reporters, with education staff alone having 80.6 percent fewer reports than expected. "This is not good," Kohlmeier stated. "Child abuse and neglect went unreported during the first few months of the pandemic, not because it wasn't happening but because educators were often unable to recognize and report signs of abuse due to school closures and challenging virtual learning environments."

The signs of abuse, Kohlmeier observed, include unexplained injuries, isolation from support systems, changes in mood or behavior, disheveled appearance, hypersexualized or age-inappropriate sexual behavior, and a fearful response toward adults, especially adults within a child's own household. Federal law defines abuse and neglect more generally as "any recent act or failure to act on the part of a parent or caretaker, which results in death, serious physical or emotional harm, sexual abuse or exploitation" or "an act or failure to act which presents an imminent risk of serious harm." Because states can enhance that definition, Washington State further defines abuse and neglect as "sexual abuse, sexual exploitation, or injury of a child by

any person under circumstances which cause harm to the child's health, welfare, or safety," except for conduct permitted under another statute, or "the negligent treatment or maltreatment of a child by a person responsible for or providing care to the child."

**"Child abuse and neglect went unreported during the first few months of the pandemic, not because it wasn't happening but because educators were often unable to recognize and report signs of abuse due to school closures and challenging virtual learning environments." –Pam Kohlmeier**

According to the available statistics, Washington State has about 20 victims of child abuse and neglect every day, Kohlmeier said. The number of children served by Child Advocacy Centers in Washington from January through June 2022 was about 3,400. Of that number, sexual abuse was most common, at 2,440 cases, followed by physical abuse with over 700 cases, drug endangerment and witness to violence with about 170 each, and neglect at approximately the same level. The offenders are mostly likely to be parents, followed by stepparents, other relatives, and a parent's boyfriend or girlfriend.

Partners with Families & Children has done "amazing" work, said Kohlmeier, in preventing, interrupting, and repairing cycles of child abuse and neglect, serving more than 1,000 children and families per year. For example, the organization provides substance use support for families because of the link between increased substance use in the home and increased rates of child abuse and neglect.

Educators also continue to be essential in helping to interrupt abuse. "Trust your instincts," Kohlmeier urged. "If you are one of these people, err on the side of caution to report. The professionals are going to investigate, but you be the eyes and ears to report suspicion." Reporting leads to investigations, which in turn can lead to specialized medical examinations of children and professional forensic interviews of children.

42 Child Welfare Information Gateway. 2021. Child Maltreatment 2019: Summary of key findings. U.S. Department of Health and Human Services, Administration for Children and Families, Children's Bureau. Available at <https://www.childwelfare.gov/pubs/factsheets/canstats>.

43 Loc H. Nguyen. 2021. Calculating the impact of COVID-19 pandemic on child abuse and neglect in the U.S. *Child Abuse & Neglect* (118):105136.

## IMPROVING COMMUNICATIONS

During the discussion period, the panelists were asked about difficulties caused by the lack of communication between groups that have information that could help others.

Mauseth said that communication occurred in a different context during the COVID-19 pandemic than it would have during previous crises. "I have thanked my lucky stars on more than one occasion that this happened in 2020 instead of 2000 or 1995, when we have the technology available to connect with people." However, online communications have also been a double-edged sword. Parents have a line of communication open to their classroom teacher, to the principal, or to the school that they might not have had before. At the same time, online communication can exacerbate existing disparities and cause other problems. People who do not have access to broadband internet at home can be challenged. Being online for educators raises a problem with burnout because they are expected always to be available.

Mauseth stressed the importance of establishing and maintaining healthy boundaries for educators and for those who interact with educators. People need to know when a child's teacher or principal is off and should not be contacted. She also mentioned the importance of using communication to normalize symptoms and experiences. "I can't tell you how many times people have said, 'I thought

it was just me. I thought it was just my family that was struggling in these ways, that it was my brain that was acting strangely.'" Getting information out to the general public about normal responses can help them cope with their feelings.

Kohlmeier called attention to the difficulties with communication that can arise in a virtual context. During the pandemic, health care providers saw children less frequently and visits were often online. During these virtual visits, it can be hard to see much, and sometimes patients are just on the phone, so a health care provider sees nothing. "It wasn't just the educators who had a decrease in reporting."

Kohlmeier also addressed the unintended consequences of pandemic responses. Putting a family in a small house trying to share the same space is not a ready avenue to success. Students in such a situation cannot pay attention as well as can children who have their own space at home. "The learning environment could have been really challenging for some kids, which is something I anticipated. I also anticipated the lack of child abuse reporting. I am embarrassed to say I did not recognize the huge impact of the mental health crisis with kids being isolated at home. You take all of the hard things about learning physics and math online, and you take away their social safety net to have fun with their friends, and that's hard."

## 4. Mental Health

### The Impacts of COVID on Mental Health and Strategies for Mitigation

Returning in greater depth to several topics introduced by Osaremen Okolo in her keynote address, three presenters spoke on the impacts of the COVID-19 pandemic on the mental health of children and strategies for mitigation. Crises and disasters are not experienced equally among all groups, they noted, and flexibility and adaptability are key to an effective response. Mitigation strategies are particularly amenable to telehealth solutions, but these solutions are not a panacea, and sustained interventions are needed to support youth behavioral health.

#### EFFECTS ON THE MENTAL HEALTH OF CHILDREN

While COVID has taken a toll on the mental health of almost everyone, children and families have suffered more than others, said Elaine Walsh, associate professor of child, family, and population health nursing at the University of Washington. Among U.S. high school students, 37 percent reported experiencing poor mental health during pandemic, 44 percent felt persistently sad or hopeless, 55 percent experienced emotional abuse by a parent or other adult at home, 11 percent experienced physical abuse by a parent or other adult at home, and 29 percent reported that a parent or other adult in the home lost a job.<sup>44</sup>

**For children ages 5–17, emergency room visits for mental health issues increased from 2018 to 2021, with 6.7 percent reporting suicide or self-injury and an increasing number of mental health visits resulting in admission to the hospital.<sup>45</sup> For adolescents ages 12–17, visits for**

**suspected suicide attempts increased 31 percent in 2020 compared with 2019, with a 50 percent rise among girls.<sup>46</sup>**

Mental health struggles among children are not new, Walsh observed. One in five children have a mental, emotional, or behavioral disorder, with only 20 percent of those receiving mental health treatment. In 2019, for example, 18.8 percent of high school students seriously considered attempting suicide, 8.9 percent attempted suicide, and 2.5 percent were injured in a suicide attempt that had to be treated by a doctor or nurse, and “there are obviously more attempts than there are people seen for these attempts.”<sup>47</sup>

Children who experience adverse childhood experiences are at increased risk. Those who have experienced four or more ACEs—including physical abuse, sexual abuse, verbal abuse, physical neglect, emotional neglect, a family member who is depressed or diagnosed with other mental

44 See <https://www.cdc.gov/nchhstp/newsroom/2022/2021-ABES-Findings.html>.

45 Lakshmi Radhakrishnan, Rebecca T. Leeb, Rebecca H. Bitsko, Kelly Carey, Abigail Gates, Kristin M. Holland, Kathleen P. Hartnett, Aaron Kite-Powell, Jourdan DeVies, Amanda R. Smith, Katharina L. van Santen, Sophia Crossen, Michael Sheppard, Samantha Wotiz, Rashon I. Lane, Rashid Njai, Amelia G. Johnson, Amber Winn, Hannah L. Kirking, Loren Rodgers, Craig W. Thomas, Karl Soetebier, Jennifer Adjemian, and Kayla N. Anderson. 2022. Pediatric emergency department visits associated with mental health conditions before and during the COVID-19 pandemic—United States, January 2019–January 2022. *Morbidity and Mortality Weekly Report* 71:319–324.

46 Ellen Yard, Lakshmi Radhakrishnan, Michael F. Ballesteros, Michael Sheppard, Abigail Gates, Zachary Stein, Kathleen Hartnett, Aaron Kite-Powell, Loren Rodgers, Jennifer Adjemian, Daniel C. Ehlman, Kristin Holland, Nimi Idaikkadar, Asha Ivey-Stephenson, Pedro Martinez, Royal Law, and Deborah M. Stone. 2021. Emergency department visits for suspected suicide attempts among persons aged 12–25 years before and during the COVID-19 pandemic—United States, January 2019–May 2021. *Morbidity and Mortality Weekly Report* 70:888–894.

47 Asha Z. Ivey-Stephenson, Zewditu Demissie, Alexander E. Crosby, Deborah M. Stone, Elizabeth Gaylor, Natalie Wilkins, Richard Lowry, and Margaret Brown. 2020. Suicidal ideation and behaviors among high school students—Youth Risk Behavior Survey, United States, 2019. *Morbidity and Mortality Weekly Report Supplements* 69(1):47–55.

4. Mental Health

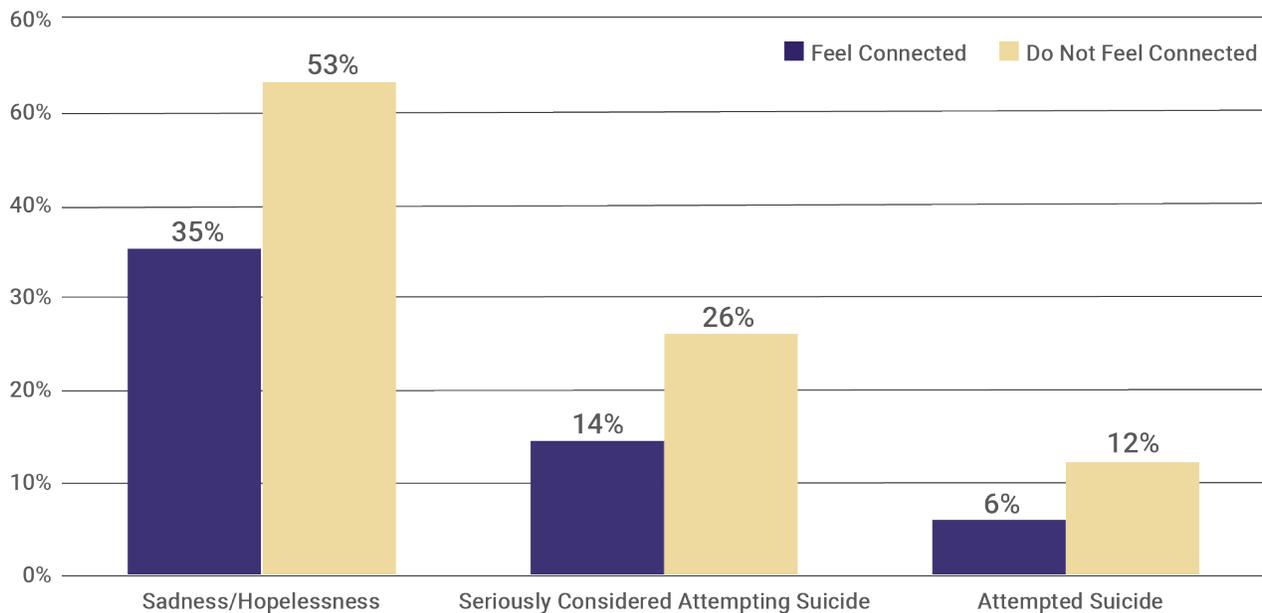
illness, a family member who is addicted to alcohol or another substance, a family member who is in prison, witnessing a mother being abused, and losing a parent to separation, divorce, or death—are four times more likely to report poor mental health and 25 times more likely to report suicide attempts.<sup>48</sup> In addition, children with learning and developmental disorders may particularly need help with emotional or behavioral challenges.

Physical activity has clear benefits for mental health, Walsh observed. However, the pandemic shut down or reduced access to gyms, parks, and sports activities, with a disproportionate effect on economically and socially disadvantaged people. Parents also reported increases in sleep disturbances, anxiety, and depression, all of which challenge families’ and children’s abilities to meet basic needs. Youth in rural areas already have reduced access to services and experienced significantly

higher levels of suicide ideation and planning (but not attempts), increased depression and anxiety, increased difficulty with emotional regulation, increased mental health treatment, and increased hospitalization for mental health-related illnesses during the pandemic. Racism, ableism, xenophobia, and discrimination due to religious beliefs all impacted mental health during the pandemic, as they did previously, but the pandemic “definitely highlighted the detrimental effects to individuals.”

In 2021, Surgeon General Vivek Murthy stated that “The future wellbeing of our country depends on how we support and invest in the next generation.”<sup>49</sup> As Walsh said, “I liked seeing the words ‘invest in the next generation.’ I hope that means not only time but money.” Partnerships are key to such investments. “We need parents, health care providers, schools, community health organizations, all of those who interact with children, to work together to

**FIGURE 4-1** Feeling connected to school makes a substantial difference in feelings of sadness, contemplating suicide, and making a suicide attempt. *Source: Centers for Disease Control and Prevention*



48 Kayla N. Anderson, Elizabeth A. Swedo, Eva Trinh, Colleen M. Ray, Kathleen H. Krause, Jorge V. Verlenden, Heather B. Clayton, Andrés Villaveces, Greta M. Massetti, and Phyllis Holditch Niolon. 2022. Adverse childhood experiences during the COVID-19 pandemic and associations with poor mental health and suicidal behaviors among high school students—Adolescent Behaviors and Experiences Survey, United States, January–June 2021 *Morbidity and Mortality Weekly Report* 71(41):1301–1305.

49 Vivek H. Murthy. 2021. *Protecting Youth Mental Health: The U.S. Surgeon General’s Advisory*. Available at <https://www.hhs.gov/sites/default/files/surgeon-general-youth-mental-health-advisory.pdf>.

implement evidence-based strategies. And the more we communicate the better.” In a 2022 poll, the American Foundation for Suicide Prevention encouragingly found that very strong majorities in the United States support the ideas that mental health is as important as physical health, that suicide can be prevented at least sometimes, that people who die by suicide show some signs, that they would take action to help prevent suicide, and that they are open to learning to help someone in need.<sup>50</sup>

School provides socialization, exposure to individuals from different backgrounds, peer interactions, adult attention and supervision, intellectual challenges, routines, food, and shelter, Walsh noted. As such, school is a place where people have eyes on young people and can intervene in their lives. Students are less likely to report sadness and hopelessness, seriously considering attempting suicide, and attempting suicide if they feel connected to school.<sup>51</sup> “School is not a positive place for everyone for many different reasons,” Walsh said. “But school does provide a good connection and positive influences for the majority of kids who feel that school is a good and a safe place for them.”

Schools are under pressure and need support, including support for mental health providers. Teachers have too many students in their classes to provide the individual attention needed, school nurses are often covering up to five schools, and school counselors can have caseloads of hundreds of students. Mental health problems are stratified by socioeconomic status, with inequities in access to mental health services arising from bias,

prejudice, stigma, discrimination, harassment, and unequal access to resources. School professionals and families alike need access to urgent care and emergency services, more mental health providers, culturally responsive care, trauma-informed care, anti-racist actions, affordable treatments and medications, pay and support for teachers, and affordable child care.

One way to approach these issues is to consider intersectionality. Walsh advocated for a framework based on five pillars of social resilience.<sup>52</sup> Economic safety and equity includes such factors as safety net services and housing access. Accessible health care includes unbiased and affordable care. Diversity, equity, and inclusion includes representation and cultural humility. Child and family protection encompasses both interventions and preventive actions. Social cohesion relates to such factors as social supports and online programs.

The pandemic has generated resources from the federal and state governments and from private organizations that have improved the lives of families and children. The symposium “has continued to help me feel positive about where we’re going and all the good work that’s happening,” Walsh concluded. But “we need to keep using our voices, our influence, our privilege, and also our votes to support kids and families.”

**“We need to keep using our voices, our influence, our privilege, and also our votes to support kids and families.” –Elaine Walsh**

## A STEPPED APPROACH TO CARE

Tona McGuire, co-lead of the Mental Health Group at the Western Regional Alliance for Pediatric Emergency Management, described an innovative approach to the overwhelming surge in mental health issues with children related to COVID-19. She agreed with Walsh that there was already a lack of capacity to meet behavioral needs before the pandemic brought a significant surge in youth needing

that care. Pre-COVID, Washington ranked 35th nationally in access to behavioral health care for youth, and in 2022 the state was ranked 39th, she reported. In Washington, from 2019 to 2021, suicide attempts and the incidence of self-harm using poison increased by 58 percent in youth ages 6–12 and 37 percent in youth ages 13–17. Governor Jay Inslee was the first public official in the country, said

<sup>50</sup> See <https://suicidepreventionnow.org>.

<sup>51</sup> See <https://www.cdc.gov/nchhstp/newsroom/2022/2021-ABES-Findings.html>.

<sup>52</sup> Anna M. Parenteau, Chase Boyer, Lillian J Campos, and Angelica Carranza. 2022. A review of mental health disparities during COVID-19: Evidence, mechanisms, and policy recommendations for promoting societal resilience. *Development and Psychopathology*.

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McGuire, to declare a mental health emergency because of what was happening to children in the state.

In response to the pandemic, two statewide workgroups were convened to begin planning how to address the surge in mental health care needs among children. In response, the Department of Health developed a set of recommendations to respond to the emergency that resulted in the Stepped Care Project. Based on a model from Sonoma County in California, the project was an access and workforce development initiative to gather additional providers from graduate programs to form a Youth Behavioral Health Response Team. The project provides training and oversight in disaster behavioral health evidence-based practices. It then deploys these workforce extenders via telehealth where the need outstrips available resources. The project was developed “not as a five-year plan but with a disaster lens,” said McGuire. “We were in crisis care for behavioral health with youth in the same way that we were in crisis care for COVID cases in the hospital.”

The graduate students were mostly in the social sciences, including psychology, social work, counseling, and marriage and family therapy. They initially were recruited mostly from western Washington universities and colleges, “because that’s where I had connections and was able to reach out,” but as the program expanded, students in universities and colleges across the state were recruited as well.

Besides providing support for families and youth, the program was designed to support the professional development of clinicians in addressing the needs of children. The graduate students receive consultation, supervision, and training. Subjects they study include disaster behavioral health principles, ethics for psychologists and counselors, HIPAA provisions, managing risk, measurement-based care, clinical documentation, promoting safe interactions with youth, the PsySTART disaster mental health triage system, the stepped care model, reporting suspected child abuse, telebehavioral health, and trauma-focused cognitive behavioral therapy (TF-CBT). In particular, said McGuire, the stepped care model is an approach to mental health care in which youth receive the right amount of care, which frees up providers to see other children. The students receive twice monthly consultation calls with a certified TF-CBT trainer, which provide an opportunity for clinicians to present cases and receive feedback and direction. They also get weekly one-

on-one group oversight from clinical supervisors, most of whom are psychologists, social workers, and counselors. The University of Washington Psychological Services and Training Center set up and maintains a virtual clinic, which provides staffing and HIPAA-compliant technologies needed to maintain virtual clinic operations. The clinic also provides case management, including an intake process for referrals, intake for cases, and communication with referral partners to identify operational efficiencies, and it developed and continually updates clinic policies, procedures, and workflow to support service delivery. Children are screened, brought into the clinic virtually, and assigned to a clinician. The Department of Health has secured funding to cover the costs of this project, including service delivery, and all services are provided to clients free of charge, “which is another reduction in terms of an impediment to kids getting care.”

Recognizing that the children who need behavioral health care are in a variety of settings, the project has recruited six school districts across the state, one primary care pediatric practice, and two emergency departments from tertiary care children’s hospitals. The model is to provide youth with a timely and appropriate continuum of care, starting with psychological first aid based on listening, protecting, and connecting through the involvement of a Health Support Team, triaging through the PsySTART approach, disaster crisis intervention through TF-CBT, and finally emergency care. “All children should receive something when we’re in the midst of a large-scale disaster,” said McGuire. Almost all children will experience distress symptoms during an event like the pandemic, but not all of them will progress to something like post-traumatic stress disorder. Psychological triage allows those children to be identified so that they can receive the help that they need as soon as possible. “When we have full-blown PTSD, it’s much harder to treat, and it’s already begun to impact the child in terms of their school, their family, and their social life,” McGuire observed. “We want to intervene early.”

Children with severe stress exposures are sent to the virtual clinic, where they are screened for symptoms suggestive of child PTSD. Children with such symptoms are then assigned a clinician, who provides the first four modules of TF-CBT. These sessions, known as PRAC modules, focus on psychoeducation/parent, relaxation, affective modulation, and coping. Between 40 and 50 percent of children entered into this intervention were improved enough after the first

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four sessions to be discharged to watch status, which allowed clinicians to go through the same process with more children.

If the children are not better after the initial four sessions, they go on to receive an additional eight to ten sessions in the TF-CBT process. The next eight sessions, known as TICE modules, cover trauma narratives, in-vivo trauma exposures, conjoint parent-child sessions, and enhancing safety and future development. For example, establishing a trauma narrative involves developing a story about what happened to children that allows them to recognize trauma triggers, comfortably describe what happened, and have their parents also comfortably describe what happened, so that they can manage the situation together and create a safer environment. According to very preliminary data that McGuire presented at the symposium, this approach has led to substantial improvements in symptoms severity and daily functioning.

When asked whether dealing with a localized crisis differs from dealing with a global crisis, McGuire said that the only difference is “where you sleep and eat.” The optimal approach remains “doing the most you can do for the

most number of people,” in part by shifting from treating individuals to treating populations. “Our behavioral health curriculum and the health support team came out of experience of ‘We can’t do this, there’s not enough of us, let’s train other people to do what we know how to do.’ That’s not rocket science.” The underlying goal is still to teach people of all educational backgrounds how to do basic behavioral health interventions.

McGuire also emphasized the importance of hope. “For me, hope is not that everything’s going to be great.... It is the knowledge that things can get better, that there is something to move forward toward. That can happen even in the worst kind of situations. Haiti, in my professional experience, was probably the worst... devastated by multiple terrible natural disasters. You would think that the Haitians would have no hope at all, or that Haitian youth would say, ‘I give up.’ That’s not what we saw. Given some minimal tools and some minimal support, kids hold themselves up and move forward.”

**“For me, hope is not that everything’s going to be great... It is the knowledge that things can get better, that there is something to move forward toward.” –Tona McGuire**

## SUPPORTING YOUTH BEHAVIORAL HEALTH

The disproportionate impact of the pandemic on the mental health of children has led to many innovative behavioral health solutions, said Eric J. Bruns, director of the Wraparound Evaluation and Research Team at the University of Washington a co-director of the National Wraparound Initiative and National Wraparound Implementation Center. In particular, two organizations with which Bruns is associated, the School Mental Health Assessment Research and Training (SMART) Center and the Northwest Mental Health Technology Transfer Center (MHTTC) Network, saw early on the need to promote the quality of mental health services provided to youth and families through the provision of training and technical assistance and professional development of the mental health workforce.

**Schools are the most common setting in which young people receive mental health care, edging out even outpatient mental health settings.<sup>53</sup> For this reason, a multi-tiered system of school mental health services is a way to enhance the wellness of as many students as possible, said Bruns.**

Preventive and universal school-wide supports and strategies can bolster the mental wellness of all students through such means as social-emotional learning, evidence-based universal strategies, and effective classroom practices. Screening can then provide targeted supports for some students, such as mentor-based programs, behavioral contracting, and group social-emotional skills training. Finally, monitoring of selected students can yield individual

53 Mylien T. Duong, Eric J. Bruns, Kristine Lee, Shanon Cox, Jessica Coifman, Ashley Mayworm, and Aaron R. Lyon. 2021. Rates of mental health service utilization by children and adolescents in schools and other common service settings: a systematic review and meta-analysis. *Administration and Policy in Mental Health* 48(3):420–439.

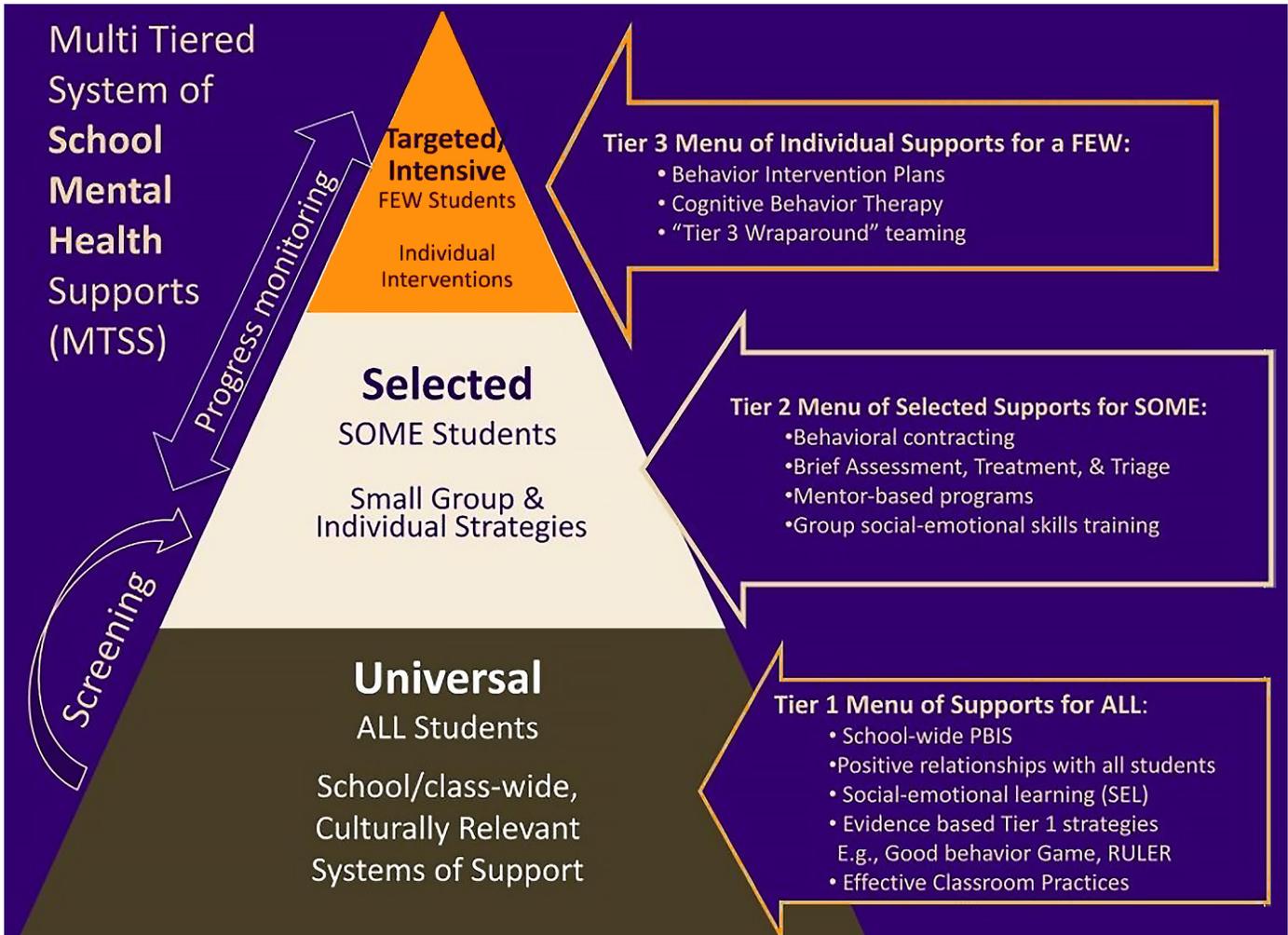
4. Mental Health

supports for the few who need them, including behavioral intervention plans and cognitive behavioral therapy.

Very early in the pandemic, the SMART Center and the MHTTC Network set out to intervene with those who interact with students both in the short term and in the longer term. They worked with school professionals, teachers, and other staff members to focus on systematically providing connections, hope, purpose, flexibility, and adaptability. A wellness series was developed for and by BIPOC school

mental health providers called “Anchored in Our Roots.”<sup>54</sup> The two organizations partnered with Seattle Children’s Hospital and Pacific Behavioral Interventions and Supports to create a resource for educators on behavioral health impacts during and after the pandemic entitled “What to Expect and Ways to Prepare for the Return to In-Person Learning.” Finally, the SMART Center teamed up with Chad’s Legacy Project to produce “The Student/Youth Mental Health Literacy Library.”<sup>55</sup> All are examples of using

**FIGURE 4-2** A multi-tiered system of school mental health supports ranges from universal interventions for all students to intensive inventions for a targeted group of students. *Source: University of Washington*



54 See <https://mhttcnetwork.org/centers/northwest-mhttc/anchored-our-roots-wellness-series-bipoc-school-mental-health-providers>.

55 See <https://www.mentalhealthinstruction.org>.

schools “as a mechanism to bolster the wellness of our young people,” said Bruns.

Another approach that can be used by anyone in schools is the Brief Intervention for School Clinicians, which consists of four sessions on engaging and assessing students, identifying the top problem, collaborative problem solving, and determination of whether a student successfully implemented problem solving. Students who underwent this process were more likely to be enrolled in school mental health services at two months but less likely at six months, Bruns reported. Stepped care is another successful approach, from telling students to come back if they need more help through supportive monitoring, continuing with school mental health if possible, referring to outside services, and referring to other school-based services. “Again, the lesson learned is that we can be more efficient with the resources that we already have in schools: counselors, school social workers, school nurses, and so forth.”

During the pandemic, Bruns and his colleague Jennifer Stuber provided parents with online training on suicide prevention using the LEARNS Saves Lives model.<sup>56</sup> LEARNS refers to looking for signs, empathizing and listening, asking about suicide, removing the danger, and next steps. Bringing behavioral health and suicide prevention trainings directly to parents yielded positive effects, he said, including the removal of expired or unused medications, the purchase of lockboxes for medications, and saving a crisis number to phones so that it is immediately accessible.<sup>57</sup>

## INSURANCE ISSUES

In response to a question during the discussion session about how insurance issues can affect children’s access to mental health services, Walsh responded that even people who have insurance or pay out of pocket can have considerable difficulties getting care, such as being placed on lengthy wait lists. McGuire agreed, adding that children in Washington State sometimes have better access to more in-

A strategy to increase the capacity to intervene with students is through use of Elementary and Secondary School Emergency Relief (ESSER) funds. Provision of 51 ESSER-funded student assistance professionals to Washington schools increased the behavioral health services available to students across the state, Bruns observed. Schools overwhelmingly perceived the importance and helpfulness of these professionals, and the percentage of students expressing low levels of hope was cut in half following the intervention.

Finally, Bruns described a study about the transition from in-person trainings in schools and community settings to virtual training.<sup>58</sup> Online training was able to reach many more members of the workforce, and the training attendees were more diverse with respect to race, ethnicity, and education level. “We had twice as many individuals who identify as Latinx, twice as many individuals who identify as Black or African American, and many more people who said that they do not have a professional degree, that they had bachelor’s or associate’s degrees or didn’t have any college experience,” he said. Ratings of the quality and impact of the trainings also were higher when they became virtual. “It’s very important for those who are supporting the workforce to recognize that we can use virtual training in a way that increases diversity and attendance as well as maintains people’s perception of quality.”

**“We can be more efficient with the resources that we already have in schools: counselors, school social workers, school nurses.” –Eric Bruns**

depth and intensive care than children on commercial plans. “Everyone is maxed out, and everyone is likely to be maxed out for the foreseeable future.” The lack of access to basic care creates huge problems when parents cannot afford or cannot find providers to get their children into upstream care and therefore end up in emergency departments when their children have a crisis.

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56 For more information, see <https://inthe forefront.org/learn-saves-lives>.

57 Olson, Lucy, Kellogg... & Bruns (2021). Adapting Training and TA for the Workforce in Response to COVID-19. School Mental Health.

58 Olson J, Kellogg M, Schmitz K, Taylor B, Bruns E (2021). What happens when training goes virtual? Adapting training and technical assistance for the school mental health workforce in response to COVID-19. School Mental Health, doi: 10.1007/s12310-020-09401-x

## RESPONSES TO A SUICIDE PLAN

Roll asked a difficult question about what steps parents should take if they are made aware of a child's suicide plans but the child has legal autonomy over their mental health and is refusing care? "That's a tough one," said McGuire. But if there is a concern about the safety of a child, they can be evaluated by a designated crisis responder or someone else who can make a determination about what needs to happen. "It can't simply be, you're older than 13, so you get to choose." Similarly, a call to a crisis line is likely to lead to a request to take the child to an emergency department or to someone coming to a home as part of a crisis response team to do an evaluation about whether they are an imminent danger to themselves.

Bruns pointed out that if the response has not been adequate, or if a child is refusing treatment after a determination that

they pose a threat to themselves or others, Washington State law dictates that further steps can be taken. Parents can also minimize the risk of harm to self by removing anything that could be used to cause harm, including drugs and alcohol, and staying with a person at all times.

Walsh noted that the chronicity of suicidality, requiring round-the-clock supervision, can be draining. She recommends that families get support for themselves, including calling the crisis line to say that they need help if necessary. Families can also reach out to others and examine a child's environment to see who else might be available to reach them. They can "let people know, as much as possible without completely violating a child's privacy, but letting schools know and letting friends know that they're struggling and that they need to be supported."

## THE CUMULATIVE EFFECT OF STRESS

When asked about the cumulative effect of external stressors that can produce mental health problems, McGuire responded that tools are available that can be applied to the chronicity of stressors. Examples are learning not to catastrophize, looking at what is happening right now, looking out for your own safety, and not envisioning a life without hope. Shifting those cognitions toward the here and now can help manage an acute stress response, and that approach is applicable across a variety of stressors.

Bruns described helping a young person consider what their top problem is. They may feel that many things are weighing on them, but it can help to focus on the idea that some things are contributing to stress more than others. "Let's ask what the number one is and focus on that. Oftentimes, when a young person experiences success in problem solving, whether it's through intervening in those events that are happening around them or figuring out better ways to cope with the stress of those events, that success can generalize to all the other ways in which they're perceiving the many things weighing on them."

## 5. Review

### Reflections on Health Care, Children, and the Pandemic

In the final session of the symposium, Thomas May, Floyd and Judy Rogers Endowed Professor in the Department of Medical Education and Clinical Sciences at the Washington State University College of Medicine, discussed some of the fundamental value frameworks within which health care decision making has been evaluated and applied during the pandemic, which have important implications for such issues as privacy, bioethics, and resource allocation. He also responded to several provocative questions from symposium participants, after which speakers and organizers offered their takeaway messages from the day's proceedings.

#### FROM INDIVIDUALS TO COMMUNITIES

Our society prides itself on expecting physicians, nurses, and other direct care providers to focus their concerns on the individual patient for whom care is provided, May explained. As a result, our society has long eschewed the idea of rationing health care because of the effect that this might have on the provider-patient relationship, which has long been regarded as sacrosanct for the effective provision of care.

The trust at the center of this relationship is an essential feature of good medicine, said May. To make accurate diagnoses and develop effective treatments, health providers must receive full information about the presence of symptoms, possible explanations for those symptoms, and the physiological and lifestyle characteristics that may inform a diagnosis. This requires patients to reveal intimate and sometimes embarrassing or even stigmatizing information about themselves to health care providers. Examples include pneumonia and HIV for a man who was not known to be homosexual in the early 1980s, or potentially serious drug interactions when prescribing pharmaceuticals to a person who uses illicit drugs. This type of trust is only possible when patients believe that their health provider has an interest in their welfare and is not looking to sacrifice their interests for some greater social good.

In contrast to this norm of fiduciary duties to an individual patient, infectious disease responses shift the focus toward a broader community. This is particularly true when a patient refuses an intervention. When a patient refuses a vaccine

or treatment for an infectious disease, this refusal can pose direct threats to the physiological health of others. Vaccination strategies in particular have long employed this broader perspective, where the goal is to reduce the likelihood of a vulnerable person being exposed to an infectious agent.

**For children, this shift in focus from the individual to the community is fundamental for two reasons. First, the spread of an infectious disease can be exacerbated when children are involved. Second, the indirect psychosocial effects of an infectious disease can be more profound when children are concerned. May discussed both of these reasons in turn.**

The infectious disease community has long considered children as super vectors of disease spread. They seldom prioritize personal space. They often pay little attention to wiping their runny noses, covering their mouths as they cough, or washing their hands. In the early days of the COVID-19 pandemic, children were identified as a priority group for mitigation strategies despite the milder effects of the disease on this group. That is the reason, for example, why school closures were one of the earliest forms of mitigation strategies employed, May said.

Regarding psychosocial effects, because many children live in multigenerational households, their bringing the virus back to

a household can threaten the health of older generations who play an integral role in raising the child. Loss of a grandparent, a parent, or siblings with increased vulnerabilities can have a profound and lasting impact on a child.

These effects depend on family circumstances and are not easily measured on a standardized basis. Therefore, the existing pluralism of values must be taken into account in defining intervention policies for families with children, said May, which requires considering the purpose of interventions. For example, in most health care settings, the purpose of a diagnostic test is focused on the welfare of the individual being tested. But for infectious diseases, other purposes, like tracking the spread of a disease, assessing the effectiveness of interventions, and identifying priorities for future efforts, must be balanced against considerations of an individual's welfare. In the early days of the pandemic, failure to appropriately recognize this need resulted in problematic confusion that significantly undermined response efforts. For example, inconsistent criteria for testing threatened to undermine attempts to assess the effectiveness of interventions.

The goals of mitigation strategies that involve children are complex, May observed. The values toward which particular interventions are aimed must be balanced against health, educational, and social needs that are at times interrelated and at times competitive. The relationships among these needs depend on circumstances that make absolutist conclusions unwise. "One of the most fundamental issues we have, for example, will be the scope and weight of parental authority when this authority conflicts with our mitigation efforts," he said. "How far should parental authority to accept or refuse vaccination on behalf of children extend? In most areas of life, parental authority is a powerful prima facie default. But infectious disease has long represented an area where this default is weakened

considerably." Parental authority to refuse vaccination for measles, mumps, rubella, diphtheria, and other diseases traditionally has been limited to religious objections subject to assessment of their sincerity and strength, and courts have weighed in on this issue. One 1944 child labor law case held that the state has broad power to protect child welfare even when this conflicts with religious belief, deciding that "the right to practice religion freely does not include liberty to expose the community or the child to communicable disease." As May said, "The courts clearly have recognized limits to parental authority when the health or welfare of the child is threatened."

Parental decisions regarding vaccination can have demonstrable effects on the spread of infectious diseases. For example, one clustering of mandated vaccine exemptions for measles in Washington County, Utah, was just over six times the national average, which at the time was 1 percent, resulting in a loss of herd immunity in that county. Furthermore, half of those contracting measles had been immunized but got sick nevertheless because of the limited effectiveness of the measles vaccine.

How should these concerns be balanced, asked May. "Bioethics has given us some broad guidance, but the devil is often in the details." In particular, he listed proportionality and least infringement as major considerations. However, these considerations remain dependent on context. For example, some families include older generations, broadband access is not equally distributed, and home environments differ. In addition, pandemic responses such as social distancing, school closures, and vaccination all result in both positive and unintended negative outcomes, and these outcomes are influenced by real world circumstances, which must be taken into account in shaping policies. "A one-size-fits-all policy is likely doomed to fail," he said.

## BALANCING AUTONOMY AND OBLIGATION

In response to a question about the features of successful policies, May observed that a critical challenge is to arrive at some form of public consensus concerning the scope of individual rights and individual judgments. In the United States, people generally honor the idea that individuals should be able to define for themselves the values that guide their lives. But people recognize some limitations to

this where harm to others is posed. "In the realm of free speech, we allow people to express their ideas, but we don't allow them to shout 'fire' in a crowded theater." Establishing a universal policy is difficult where values are so divergent and diverse, but society recognizes the limitations of the application of individual values where such an application poses the threat of harm to others. For example, a possible

approach would be, when schools are open, to provide an online option for children who have vulnerable siblings or grandparents living at home. “Trying to avoid a one-size-fits-all policy while recognizing what the harms are and responding to those harms as best we can is, I think, our best strategy.”

Asked in particular about the role of individualism in American culture, May agreed that individual rights and autonomy are crucial, but also that “there’s a real need for us to recognize some of the fundamental social principles that we founded this country on.” Because health care is a social interaction involving at least the provider and patient, certain social rules come into play, such as considering the harms the decisions of an individual have on others. “It also involves tolerance of each other,” he said. “We tolerate things that we disagree with but recognize another person’s right to do or to believe. I worry sometimes that we are starting to lose that. Our political discourse is becoming less and less civil, and sometimes not stepping back to consider another’s perspective and having tolerance toward it leads us to talk past one another.” For instance, if a person’s objection to immunization is based on religious convictions, talking about safety misses the point. “I think the solution is returning to civil discourse, re-emphasizing toleration and re-emphasizing a recognition of the harm principle as a starting point to address some of these issues. But, again, those are difficult issues.”

**“Our political discourse is becoming less and less civil, and sometimes not stepping back to consider another’s perspective and having tolerance toward it leads us to talk past one another.” –Thomas May**

Responding to a question about the work he has done with orphans, May pointed out that society has obligations to provide orphans with items that are relevant to their health, just as with non-orphans. For example, orphans often lack access to information about their inherited disease risks, which affects screening protocols based on knowing a family health history. A specific example is breast cancer, where a family history might point to the need for MRI adjuncts to mammography as a screening protocol. Social

resources need to be in place to mitigate such obstacles to good health care, he said.

May also addressed a question about the economic impacts of intervention efforts, citing both the microeconomic and macroeconomic effects of illness. If someone gets sick, that person may lose income and require social resources to survive. Simultaneously, at a macro level, the pandemic has produced impacts like workforce shortages and supply chain disruptions, which have “tremendous effects on everyone in society.”

In response to a question about how COVID will affect young people as they become adults, May noted that “I don’t think we fully understand how COVID will influence a person’s health over the course of a lifetime.” Long COVID may have long-lasting or permanent effects even on non-respiratory organs like the heart or kidneys. Some of the decisions made in balancing risks and benefits in responding to the pandemic may look differently in retrospect, but “it’s hard to know without knowing the facts.”

Finally, when asked what scientists and policymakers should know about ethics, May said, “the first thing that I would emphasize is that closed communities often have skewed perspectives. When we’re working with people from the same discipline as ourselves, we often will view what is normal and what is acceptable differently than people from a different perspective.” To counter this tendency, a diversity of perspectives and an ability to compromise are needed. “Both instill and extend trust,” said May. “The philosopher John Stuart Mill once pointed out that we don’t achieve happiness by pursuing it directly. We achieve happiness by doing other things that we enjoy. The same can be said to be true of health agendas. If we really want people to subscribe and participate in our mitigation efforts, we need to be honest and transparent about the basis for those efforts, and not be perceived as implementing an agenda where people may think we’re misleading them to get them to do something. That can be counterproductive. If people believe that we’re being honest and transparent, they’ll be more inclined to comply with interventional mitigation efforts.”

**“We don’t achieve happiness by pursuing it directly. We achieve happiness by doing other things that we enjoy.” –Thomas May**

## TAKEAWAY MESSAGES

At the end of the symposium, presenters and organizers were invited to comment on the most important things that they learned over the course of the day.

John Roll re-emphasized something said by Osaremen Okolo in her opening keynote. One of the greatest disservices that could be done to children is labeling them because of what they have experienced. Treating an entire generation as somehow altered by the pandemic could reduce their expectations for their own future accomplishments and abilities as well as the expectations of others. “We need to focus on mitigation and optimism and hope, as opposed to getting stuck in the past.”

Chris Anderson said that one important thing he learned is the contribution that schools make to identifying children at risk of child abuse. “It got me thinking about what kinds of solutions might be out there for children who are not in a school environment. How can we mitigate that?”

Pam Kohlmeier reflected on the importance of talking about the behavioral and mental health impacts of the pandemic and about ways to ameliorate those impacts. “If we recognize a crisis, how do we respond to the crisis?”

Kira Mauseth noted that the attention and insights gathered around behavioral health impacts could result in additional resources. “We have to take advantage of that momentum,” she said. “Many people are doing work in this area, good work, which is a hopeful thing.”

Sara Vora observed that she has been deeply involved with the medical aspects of the pandemic, but the symposium reinforced to her the many other impacts the pandemic has had on children, from educational to mental health to economic effects. “It’s so important to look at it from many different angles.”

Elaine Walsh was struck again by the need to expand the circles in which people operate to expand their thinking about the issues. “We know that,” she said, “but today has been an excellent example of so many common issues and also of many different approaches.”

Thomas May said that “the educational challenges that we’ll be facing are more serious than we initially thought.” Virtual learning might have seemed like an effective response to the closure of schools, but “what I’ve learned today is that it perhaps was not as effective as we had hoped.”

Tona McGuire reiterated May’s point about the need for transparent and honest communication around public health issues. Public health recommendations disseminated to the public had unintended consequences, she observed, and these need to be considered “so that we can get ahead next time, with the next pandemic.”

Yasmeen Hussain remarked on the amount of cross-disciplinary and cross-boundary work that was discussed at the symposium. The symposium showed how this work can be applied “more broadly to many different types of situations, pandemics, and other crises.”

Finally, Donna Gerardi Riordan thanked everyone for participating in the symposium and called attention to the many positive messages that emerged from it. “I have a sense of optimism about what is happening here in the state,” she said. “All of you are coming at this with such different perspectives and different kinds of training, but your commitment and expertise are remarkable. I’m privileged that we were able to use the symposium to bring you together both to share what you do and to learn from each other.”

# Symposium Agenda

10:00am	<p><b>Welcome</b></p> <p>John Roll, WSAS President and Symposium Chair</p>
10:05am	<p><b>Keynote – Osaremen Okolo</b></p> <p><i>Coming of Age During a Pandemic: A Path Forward from Mitigating the Impact of COVID-19 to Ensuring the Equitable Health and Well-Being of All Children in the United States</i></p>
11:00am	<p><b>Describing the Impacts of COVID on the Physical Health of Children</b></p> <p>Surabhi (Sara) Vora – <i>What Does COVID-19 Look Like in Children?</i></p> <p>Janet Englund – <i>Prevention of COVID-19 Disease in Children</i></p> <p>Chris Anderson – <i>Impact of Delayed and Deferred Pediatric Care During the COVID Pandemic</i></p>
12:00pm	<p><b>Break</b></p>
12:30pm	<p><b>Impacts of COVID on Educational Settings and Strategies for Mitigation</b></p> <p>Ben Cowan – <i>COVID-19 School Closures: Impacts on Children and Parents</i></p> <p>Kira Mauseth – <i>Behavioral Health for Children &amp; Youth: Long-term Considerations for Educators</i></p> <p>Pam Kohlmeier – <i>Child Abuse during Virtual Learning: Incidence and Detection, or the Lack Thereof</i></p>
1:40pm	<p><b>Impacts of COVID on Mental Health and Strategies for Mitigation</b></p> <p>Elaine Walsh – <i>The Impact of COVID on Child and Adolescent Mental Health: Consequences and Opportunities</i></p> <p>Tona McGuire – <i>Toward the Way Forward: Triage to Stepped Behavioral Health Care for Youth Impacted by COVID and other Disasters</i></p> <p>Eric Bruns – <i>Learning from COVID: Data-Informed Lessons on How We Can Better Support Youth Behavioral Health in the Future</i></p>
2:50pm	<p><b>Tradeoffs in Mitigation Strategies</b></p> <p>Thomas May – <i>Bioethics, Children, and Infectious Disease Response</i></p>
3:30pm	<p><b>Continuing the Conversation</b></p>
4:00pm	<p><b>Adjourn</b></p>

## Symposium Speakers



### Dr. Chris Anderson

Pediatrics Clinical Education Director, Washington State University; Medical Director, Project ADAM Inland Northwest

Charles Christian (“Chris”) Anderson, M.D., was born in Omaha, Nebraska and moved to Texas during his late childhood. He attended Texas A&M University where he received his B.A. in Biology. He then attended Baylor College of Medicine in Houston, TX, receiving his M.D. in 1993. After completing a surgical internship in Houston, he spent a year on sabbatical, performing research in pre-clinical gene therapy studies and working in the emergency room.



### Dr. Eric Bruns

Director, Wraparound Evaluation and Research Team, University of Washington; Co-Director, National Wraparound Initiative and National Wraparound Implementation Center

I am a clinical psychologist and mental health services researcher. My overarching research aim is to produce and promote use of research, evaluation, and continuous quality improvement that aids high-quality implementation of effective models of care in real world service settings, such as in schools, public mental health systems, and family-and youth-run organizations. My research can be summarized as falling into three categories: (1) Care coordination models for youth with the most complex behavioral health needs; (2) school mental health; and (3) public sector implementation of research-based practices. In each area, I co-direct national training and TA centers. For example the National Wraparound Implementation Center ([www.nwic.org](http://www.nwic.org)), provides support to dozens of states and localities internationally on Wraparound. The National Wraparound Initiative ([www.pdx.edu](http://www.pdx.edu)) serves to mobilize our research and policy activities. Our Wraparound fidelity tools and data systems can be found at [www.wrapinfo.org](http://www.wrapinfo.org). With respect to school mental health, our interdisciplinary UW School Mental Health Assessment, Research, and Training (SMART) Center – <https://smartcenter.uw.edu/> – currently has over a dozen federal grants as well as state, local, and foundation funding focused on how best to ensure that evidence for effective mental health intervention and prevention is translated into effective programming in schools. The SMART Center also hosts the school mental health supplement of the UW Department of Psychiatry’s SAMHSA-funded Northwest Mental Health Training and Technical Assistance Center (MHTTC). Check out our extraordinary array of resources at <https://mhttcnetwork.org/centers/northwest-mhttc/northwest-mhttc-school-mental-health>.



**Dr. Benjamin Cowan**

Associate Professor, School of Economic Sciences, Washington State University

Ben Cowan is Associate Professor of Economics at Washington State University and a Research Affiliate of the National Bureau of Economic Research (Health Economics program) and the Institute for Research on Poverty. He received his PhD in Economics from the University of Wisconsin in 2010.

His areas of research interest include health economics, labor economics, and the economics of education. Past and ongoing projects include the effects of college access on teenagers' expectations and risky health behaviors as well as earnings and health outcomes later in life, how employee healthcare expenses affect wages, college choices under borrowing constraints, determinants of college students' drinking behavior, economic consequences of liberalized marijuana laws, opioid policy and adverse health outcomes, how school closures induced by COVID affect parental labor-market outcomes and students' educational choices, and how Medicaid expansion has affected healthcare use and health outcomes.



**Dr. Janet Englund**

Principal Investigator, New Vaccine Surveillance Network, Center for Disease Control; Seattle Children's

Professor of Pediatric Infectious Diseases. My research interests include the study of vaccine-preventable diseases and viral respiratory diseases in young children and immunocompromised hosts, including transplant recipients, as well as the evaluation of antiviral therapy for the prevention and treatment of viral diseases.

As a leader in the field of infectious diseases (ID), respiratory viruses, and infections in children, I have particular interests in assessing the epidemiology of the study of viral infections and assessing vaccine effectiveness. As a member of the CDC-sponsored New Vaccine Surveillance Network, I work with Dr. Klein to direct protocol development and patient enrollment to assess viral epidemiology and vaccine effectiveness for acute respiratory and gastrointestinal disease. Our Pediatric ID Research group is actively involved in the follow-up of pregnant women and a longitudinal study of children infected with SARS-CoV-2. Over the past 30 years, I have had extensive experience in initiating, managing, and analyzing clinical trials, vaccine studies, and national and international research protocols, in addition to a track record for successful collaborative research. I have played leadership roles in multicenter, federally-sponsored networks and research trial units, including the NIH-sponsored AIDS Clinical Trials Unit, the Vaccine Treatment and Evaluation Unit, and New Vaccine Surveillance Network (NVSN). My interest in protecting patients from viral diseases has contributed to national and international policies regarding pediatric immunization with rotavirus and papillomavirus vaccines, and maternal immunization with respiratory syncytial virus, influenza and pertussis vaccines. I am enthusiastic to work to further our understanding of important respiratory and enteric viral infections, and to contribute to controlling the spread of SARS-CoV-2.

## Summary of the Proceedings of the Fifteenth Annual Symposium

### Symposium Speakers

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#### **Dr. Pam Kohlmeier**

Former Member, Board of Partners with Family and Children; Former Member, Spokane Regional Health District Ethics Committee

Dr. Kohlmeier co-developed and co-taught the program in partnership with EWU and SRHD, which helped to support the health district, local universities, and the community by training contract tracers and contact tracer instructors. Through this community engagement endeavor, university faculty and students not only helped support SRHD's COVID-19 response efforts, but also public health in the early stages of a global health crisis.



#### **Dr. Kira Mauseth**

Co-Lead, Behavioral Health Strike Team, Washington Department of Health; Owner, Astrum Health, LLC

Dr. Kira Mauseth is a practicing clinical psychologist who sees patients at Snohomish Psychology Associates, teaches as a Senior Instructor at Seattle University and serves as a co-lead for the Behavioral Health Strike Team for the WA State Department of Health. Her work and research interests focus on resilience and recovery from trauma as well as disaster behavioral health. She has worked extensively in Haiti with earthquake survivors, in Jordan with Syrian and Palestinian refugees and Jordanian relief workers, and with first responders and health care workers throughout Puget Sound the United States. She also conducts trainings with organizations and educational groups about disaster preparedness and resilience building within local communities. Dr. Mauseth is currently working on research related to human recovery from and resilience to large-scale disaster. Influences on resilience including faith, culture, substance use and other coping mechanisms are explored.



#### **Dr. Thomas May**

Floyd and Judy Rogers Endowed Professor, Department of Medical Education and Clinical Sciences, College of Medicine, Washington State University

Thomas May, PhD, is an expert in bioethics, especially issues at the intersection of medicine, public health, and moral/social/political philosophy. Dr. May is a professor of bioethics at the Elson S. Boyd College of Medicine at Washington State University. May and other researchers in the Bioethics Lab at WSU are actively engaged in research centered around four key areas of focus: Genetics and Precision Medicine; Pandemic Preparedness and Response; Clinical and Research Ethics; and Diversity, Inclusion, and Social Justice. Dr. May has a special interest in issues related to autonomy and healthcare. More specifically, May is focused on issues of how autonomy relates to self-identity and well-being; the role of autonomy in deciding how rights to genomic information, as well as rights to genomic ignorance, should be framed; and the assessment of risk within the context of other-regarding implications that emerge from genomic information.



**Dr. Tona McGuire**

Co-Lead, Mental Health Group of the Western Regional Alliance for Pediatric Emergency Management; Co-Founder, Health Support Team

Dr. Tona McGuire is a Clinical Psychologist whose work focuses primarily on children, teens, and families. She was formerly the Associate Head of the Consultation and Liaison Division at Children’s Hospital and Regional Medical Center in Seattle Washington, and is currently Clinical Associate Professor in the Department of Psychiatry and Behavioral Sciences at the University of Washington, School of Medicine. She sub-specializes in the area of Pediatric Psychology, and enjoys helping children and families who are dealing with the psychological impact of illness and chronic medical conditions. She has served as psychological consultant to the Departments of Hematology/Oncology, Nephrology and Rehabilitation Medicine while at CHRMC, and also worked extensively with cystic fibrosis, neuro-developmental disorders, and chronic pain. She often consults with families around the impact of death and grief on children and families. She has presented her work in these clinical areas locally and internationally, and has written articles for both professional journals and textbooks. In addition to her specialty interests, Dr. McGuire works with common childhood issues such as poor academic performance, depression and anxiety and behavioral problems. She uses a cognitive-behavioral approach along with other therapeutic interventions as indicated.



**Osaremen Okolo**

Former Policy Advisor for Public Health and Equity, White House Office of the COVID-19 Response

Osaremen Okolo served as Policy Advisor for Public Health and Equity in the White House Office of the COVID-19 Response from January 20, 2021 through August 2022. Prior to the inauguration of President Joe Biden and Vice President Kamala Harris, Osaremen spent late Summer and Fall 2020 translating campaign promises into strategic implementation plans while working on the Domestic Policy Team of the Biden-Harris Transition. She was recruited to join the Transition after several years specializing in health policy on Capitol Hill—first as Ranking Member Patty Murray’s Legislative Aide for Health Policy on the U.S. Senate Committee on Health, Education, Labor, and Pensions during the 115th Congress and later as Senior Health Policy Advisor for Congresswoman Jan Schakowsky during the 116th Congress.

## Summary of the Proceedings of the Fifteenth Annual Symposium

### Symposium Speakers

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#### **Dr. Surabhi (Sara) Vora**

Associate Professor of Pediatric Infectious Disease and Virology, Seattle Children's Hospital

Surabhi (Sara) Vora, MD, MPH joined the Division of Pediatric Infectious Diseases in 2013. She earned an undergraduate degree at Stanford University and then attended the University of Chicago for medical school, pediatric residency and pediatric infectious disease fellowship training. Dr. Vora also earned a Masters in Public Health with a focus on International Health at Harvard University.

Dr. Vora's primary research interests are in optimizing the management of viral and fungal infections in immunocompromised children. She is a co-investigator in the International Pediatric Fungal Network and the PIDS Transplant Infectious Diseases Research Network. Dr. Vora's clinical time is primarily spent on inpatient Infectious Diseases consultations. She also serves as a consultant to the Seattle Children's Hospital Clinical Effectiveness program, assisting with the development and implementation of standardized clinical pathways of care for patients at Seattle Children's Hospital. She is a Co-Director of the Clinical Effectiveness Research and Writing Team and serves as a Clinical Coach for pediatric residents



#### **Dr. Elaine Walsh**

Associate Professor, Child, Family, and Population Health Nursing, University of Washington

Elaine Walsh is an ANCC Certified Clinical Specialist in Child and Adolescent Psychiatric and Mental Health Nursing. She has a Master of Nursing from UCLA and a PhD in Nursing from the University of Washington. Dr. Walsh's research interests include prevention of suicide and co-occurring behaviors, program evaluation, and translation of research interventions to community settings. She is a member of the King County Suicide Prevention Coalition and an affiliate faculty member of Forefront: Innovations in Suicide Prevention, based at the UW's School of Social Work. Dr. Walsh has extensive experience working with youth and families in hospital, school, and community settings.