

HEALTH EFFECTS OF THE COVID-19 PANDEMIC RESPONSE ON CHILDREN

Children are not the face of this pandemic. But they risk being among its biggest victims, as children's lives are nonetheless being changed in profound ways. All children, of all ages, and in all countries, are being affected, in particular by the socio-economic impacts and, in some cases, by mitigation measures that may inadvertently do more harm than good.

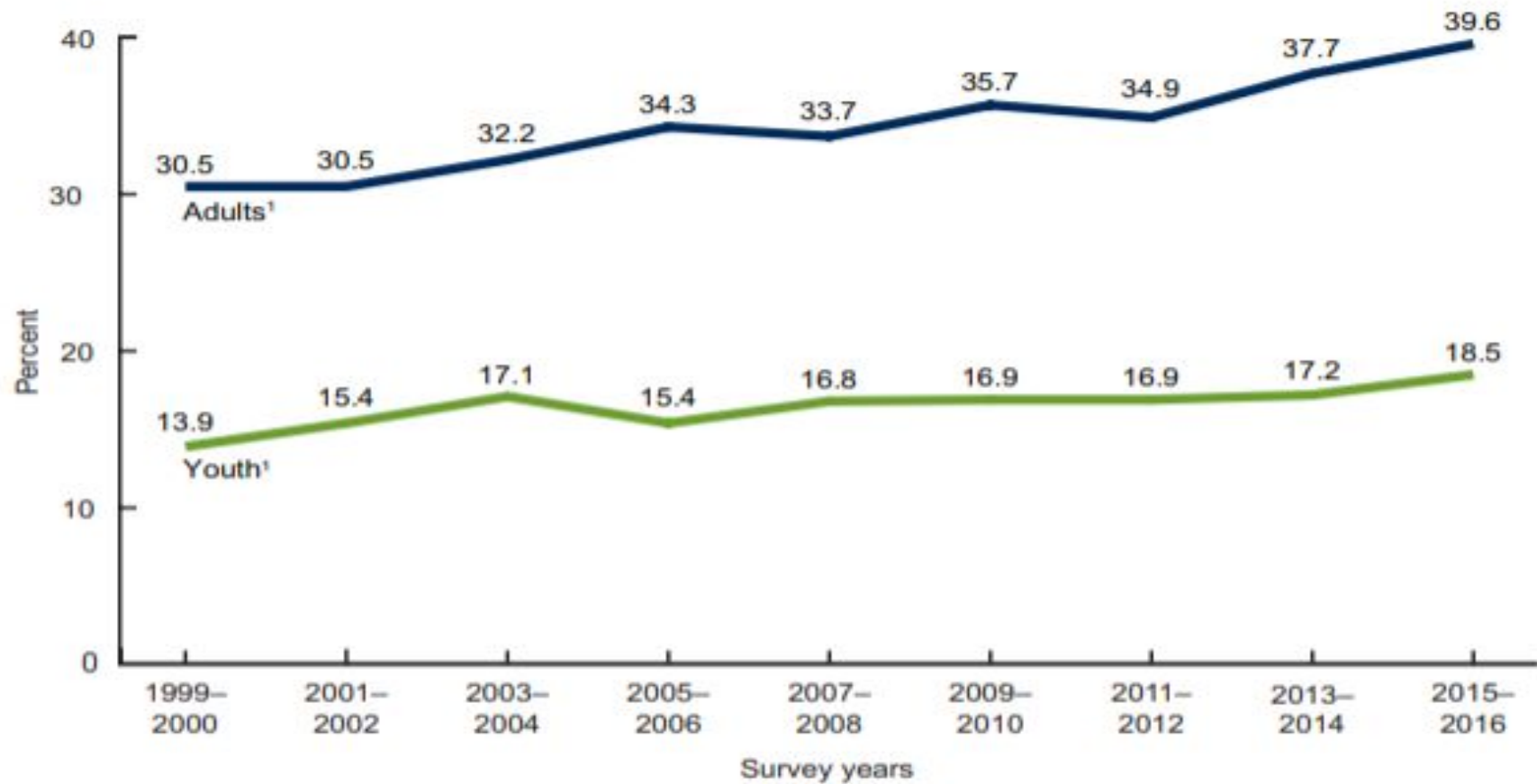
UNICEF

WHAT HAVE PEDIATRICIANS SEEN IN OUR OFFICES?

- Kids DO get COVID
- Most have very mild symptoms
- Accumulating data show that the health impact from increased suicidality, weight gain, depression and anxiety will be orders of magnitude more than that of COVID in children.
- Most of these adverse child health impacts stem from school closures and families' economic hardship from lockdowns/business closures.

CHILDHOOD OBESITY,
OVERWEIGHT AND EATING
DISORDERS DURING
LOCKDOWNS/SCHOOL
CLOSURES

Figure 5. Trends in obesity prevalence among adults aged 20 and over (age adjusted) and youth aged 2–19 years: United States, 1999–2000 through 2015–2016



EVIDENCE FROM AROUND THE WORLD

- Italy: March and April 2020 compared to same months in 2019
- Children ate an extra meal per day and added 5 hours per day of screen time
- Physical activity decreased by more than 2 hrs/wk

UNITED STATES

“Overall, we’ve seen excessive weight gain during the pandemic. For some kids, that puts them suddenly into the range of overweight or obesity, and that can be quite detrimental to their health over the long term.”

--Dr. Elizabeth Shepard, medical director of the pediatric weight clinic at Stanford Children’s Health Center for Healthy Weight



Journal of Sport and Health Science

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Original article

Projecting the impact of the coronavirus disease-2019 pandemic on childhood obesity in the United States: A microsimulation model

Ruopeng An 

OBESITY MODELLING STUDY

“should schools remain closed till December 2020, an upsurge of 1.27 million new obesity cases among children will be recorded”

- Unfortunately, many schools have remained closed much past last December!



Springer

Journal of
Diabetes & Metabolic Disorders

[J Diabetes Metab Disord.](#) 2020 Dec; 19(2): 2027–2030.

PMCID: PMC76442

Published online 2020 Nov 6. doi: [10.1007/s40200-020-00682-2](https://doi.org/10.1007/s40200-020-00682-2)

PMID: [331737](https://pubmed.ncbi.nlm.nih.gov/331737/)

COVID-19: a one-way ticket to a global childhood obesity crisis?

[Sarah Cuschieri](#)¹ and [Stephan Grech](#)²

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FROM “ONE WAY TICKET TO CHILD OBESITY CRISIS”

- “Children residing in urban areas and/or within small apartments are faced with greater challenges due to limited space or opportunities for physical activity and hence they are more susceptible to weight gain.”

EATING DISORDERS

- National Eating Disorders Association has reported steep increases (up to 78% in some months) in the number of calls and online chats compared to one year ago
- In Great Britain, health care providers reported between 2-4 times the numbers of food restriction disorders compared to the previous year
- Centers that specialize in eating disorders treatment report long waiting lists and scarcity of beds for inpatient treatment.

MCMMASTER CHILDREN'S HOSPITAL (ONTARIO, CA)

- Referrals to Eating Disorders Program have increased by 90% in a 4-month period, compared to last year.
- Admissions for inpatient ED treatment expected to increase by 33% over the 12 months since the pandemic started
- Clinical manager Paul Agar called this increase “unprecedented.”
- Hospital professionals attribute this to social isolation, limited or no school, decreased access to FP docs, no supervision from teachers/coaches.

UCSF BENIOFF CHILDREN'S HOSPITAL

- Doubling of adolescents hospitalized for eating disorders during period of pandemic

EATING DISORDERS

- Pediatricians report seeing children brought in with very progressed diseases, probably because of limited in-person interactions with friends, teachers or doctors who could have noticed changes earlier.
- 10% of those who develop anorexia will die younger than average because of the disease's toll on the body.

INCREASE IN CHILD
ABUSE-RELATED
MORBIDITY/MORTALITY
DURING SCHOOL
CLOSURES/LOCKDOWNS

KAISER FAMILY FOUNDATION REPORT, 2/10/21

- Child abuse is linked to mental illness/substance abuse later in life
- Child abuse-related ER visits *dropped* during pandemic; however, the severity of injuries among child abuse-related ER visits has increased and resulted in more hospitalizations (likely due to decrease in reporting of less severe cases before they have a chance to worsen)

KAISER FAMILY FOUNDATION REPORT, 2/10/21

- “With school closures and stay-at-home orders, it is likely that many cases are going undetected, and that at-risk children have increased exposure at home to their abusers.”

ASSOCIATED PRESS DATA/CDC MMWR

- “AP’s analysis suggests officials may be dealing with more severe cases of child abuse in several states, based on an assessment of priority response times, families that have previously been involved with CPS, and deaths and serious injuries.”
- Per CDC: proportion of ER visits related to child abuse and neglect ending in hospitalization significantly increased for all age groups between 2019-2020.

AP DATA: MARYLAND

- Investigated far fewer child abuse reports during the pandemic, but saw about 1500 more reports involving prior victims than in March-September 2019.



AP CHILD ABUSE DATA: NEBRASKA

- Significantly fewer child abuse and neglect reports during the pandemic
- Dozens more investigations that required a 24-hr response (assigned to the most urgent priority cases) than in 2019.



AP DATA: LOUISIANA

- LA reported a decrease in reports and an increase in severity, noting the state saw more domestic violence involving weapons, psychiatric issues with caregivers, and serious injuries.



INCREASES IN CHILD ABUSE FATALITIES FROM 2019

- Pennsylvania: 105 fatalities (11 more than 2019); 113 more “near fatalities” = 67% increase in injuries so serious, they left the child hospitalized in serious or critical condition
- Other states reporting a significant increase in child deaths with suspected maltreatment: Alabama, Kentucky, Ohio, Texas, Maryland and Arizona

PEDIATRIC MENTAL
HEALTH ISSUES DURING
SCHOOL
CLOSURES/LOCKDOWNS

"THERE HAS BEEN ANOTHER COST THAT WE'VE SEEN, PARTICULARLY IN HIGH SCHOOLS, WE'RE SEEING, SADLY, FAR GREATER SUICIDES NOW THAN WE ARE DEATHS FROM COVID. WE'RE SEEING FAR GREATER DEATHS FROM DRUG OVERDOSE."

--CDC DIRECTOR ROBERT REDFIELD, 7/2020

"ALMOST A YEAR INTO THE PANDEMIC, WHAT BEGAN AS
A PUBLIC HEALTH EMERGENCY IS TURNING INTO A
MENTAL HEALTH CRISIS AMONG OUR NATION'S
CHILDREN AND ADOLESCENTS."

--DR. LEE BEERS, PRESIDENT, AMERICAN ACADEMY OF
PEDIATRICS, 2/21

"THE MENTAL HEALTH CRISIS CAUSED BY
SCHOOL CLOSING WILL BE A WORSE
PANDEMIC THAN COVID."

--UZMA HASAN, DIVISION DIRECTOR,
PEDIATRIC INFECTIOUS DISEASES, ST.
BARNABAS MEDICAL CENTER

WELL-BEING OF CHILDREN DURING COVID-19

- National survey data from American Academy of Pediatrics, between 3/2020 and 6/2020:
 - 14% reported worsening behavioral health in children
 - Food insecurity increased from 6% to 8% (evidence shows significantly higher now)
 - **24% of parents reported loss of child care**
- Of those who reported worsening mental health in a parent or child:
 - **48% had lost child care**
 - **16% had lost insurance**
 - **11% reported worsening food insecurity**

PEDIATRIC MENTAL HEALTH

- Multiple reports have identified elevated rates of mental health concerns during the COVID-19 pandemic.
- Among adolescents, greater levels of negative COVID-19 related experiences were associated with increased depressive sx and anxiety.

CDC SURVEY, 6/2020

- Young adults: 25% reported starting or increasing substance use during the pandemic (compared to 13% of all adults)
- 26% of young adults reported serious thoughts of suicide (compared to 11% of all adults)

6/20 SURVEY OF 3,3000 US HIGH SCHOOL STUDENTS

- 30% of young people said they were feeling unhappy or depressed more often.

FAIR HEALTH STUDY OF PRIVATE HEALTH CARE CLAIMS

- Mental health care claim lines for children 13-18 doubled 3/20-4/20
- Intentional self-harm as a percentage of all medical claim lines increased by 90% in March 2020.

PEDIATRICS®

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Article

Suicide Ideation and Attempts in a Pediatric Emergency Department Before and During COVID-19

Ryan M. Hill, Katrina Rufino, Sherin Kurian, Johanna Saxena, Kirti Saxena and Laurel Williams

Pediatrics March 2021, 147 (3) e2020029280; DOI: <https://doi.org/10.1542/peds.2020-029280>

Article

Figures & Data

Info & Metrics

Comments

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Abstract

OBJECTIVES: Elevated rates of mental health concerns have been identified during the coronavirus disease 2019 (COVID-19) pandemic. In this study, we sought to evaluate whether youth reported a greater frequency of suicide-related behaviors during the 2020 COVID-19 pandemic as compared with 2019. We hypothesized that rates of suicide-related behaviors would be elevated between the months of March and July 2020 as compared with 2019, corresponding to the onset of the COVID-19 pandemic.



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for answers,
we're informed
by research

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SUICIDE

- Second leading cause of death among children and adolescents ages 10-17 in the US
- Suicide rates have increased in this age group over the past 20 years.
- There appears to have been an early increase in suicide-related behaviors between 2/20 and 4/20 (pediatric ER visit data)
- This time frame corresponds to initial school closures/lockdowns and “social distancing” recs

SUICIDE-RELATED BEHAVIORS IN TX

- Rates of positive screens for suicide-related behaviors increased when there was a resurgence in COVID-19 cases triggering re-introduction of COVID restrictions that had been lifted in May
- Rates of positive suicide screens for youth seeking care in a pediatric ED during 2020 COVID pandemic were statistically elevated, as compared with that same period the year prior.

CONCLUSION OF TX STUDY (APPROX 9000 ER VISITS)

Pandemic response was associated with increased rates of suicide ideation among youth ages 11-21.

UCSF BENIOFF CHILDREN'S HOSPITAL

- 66% increase in the number of suicidal children in ER during pandemic



COVID-19 DEATHS VS. "DEATHS OF DESPAIR"

- **Median** age of COVID death is 80 (not avg--middle)
- COVID has to date accounted for 1.2% of all deaths in people under 25.
- National suicide data for 2020 won't be publicly available until 2022 (not like all the "COVID dashboards"--makes comparison difficult)
- Confounding with drug overdose deaths (both "deaths of despair" but some are also suicide)

Table. Age-Specific Mortality Rates (per Million) for COVID-19 (March-October 2020) and Other Leading Causes of Death (March-October 2018)^a

Age, y	Causes of death ^b										
	COVID-19	Heart disease	Malignant neoplasms	Chronic lower respiratory disease	Unintentional injuries Transport accidents	Unintentional injuries Accidental drug overdoses	Intentional injuries Suicide	Intentional injuries Homicide	Leading causes of infant deaths		
								Birth defects	Short gestation	SUID	
<1	7.4	51.6	8.6	2.9	15.5	1.6	0.0	46.7	773.7	682.2	603.4
1-4	1.0	4.8	13.1	2.0	17.5	0.3	0.0	15.6	15.9		
5-14	1.0	2.7	13.5	2.0	14.6	0.4	9.4	4.7	6.4		
15-24	9.9	13.8	20.9	2.8	108.3	66.1	97.0	72.1	5.5		
25-34	38.6	52.1	53.7	4.2	113.2	220.7	120.9	78.8	6.4		
35-44	109.9	169.1	172.0	10.1	93.8	234.0	128.1	54.7	7.2		
45-54	294.8	509.7	597.5	56.1	100.7	208.2	140.3	33.9	11.2		
55-64	683.3	1239.8	1802.4	285.8	105.0	161.2	139.8	23.7	17.8		
65-74	1574.6	2516.9	3702.0	809.9	99.2	50.8	114.1	15.7	13.4		
75-84	3832.4	6478.5	6845.7	2117.3	129.9	16.0	129.6	13.2	14.9		
≥85	10 699.7	24 530.2	10 442.4	4278.4	139.1	14.7	133.4	13.3	31.2		
Total	698.8	1287.7	1219.8	307.5	89.2	122.3	102.3	39.0	19.4		

Abbreviations: COVID-19, coronavirus disease 2019; SUID, sudden unexpected infant death (including sudden infant death syndrome).

^a Table presents 8-month aggregate COVID-19 mortality rates during the period of March through October 2020⁵ and mortality rates for other causes during the period of March through October 2018,⁴ the most recent year for which detailed cause-of-death data are available.

^b Causes of death are defined by *International Statistical Classification of Diseases and Related Health Problems* codes for heart disease (I00-I09, I11, I13, I20-I51), malignant neoplasms (C00-C9), chronic lower respiratory disease (J40-J47), transport accidents (injuries) (V01-V99, Y85), accidental drug overdoses (X40-X44), suicide (*U03, X60-X84, Y87.0), homicide (*U01-*U02, X85-Y09, Y87.1), birth defects (Q00-Q99), short gestation (P05-P08), and sudden unexpected infant death (R95, R99, W75).

COVID DEATHS VS DEATHS OF DESPAIR IN YOUNG PEOPLE

- Young adults ages 15-24: 10 times more died by suicide than COVID (as of yet--data takes months to certify, so will likely be more than 15x)

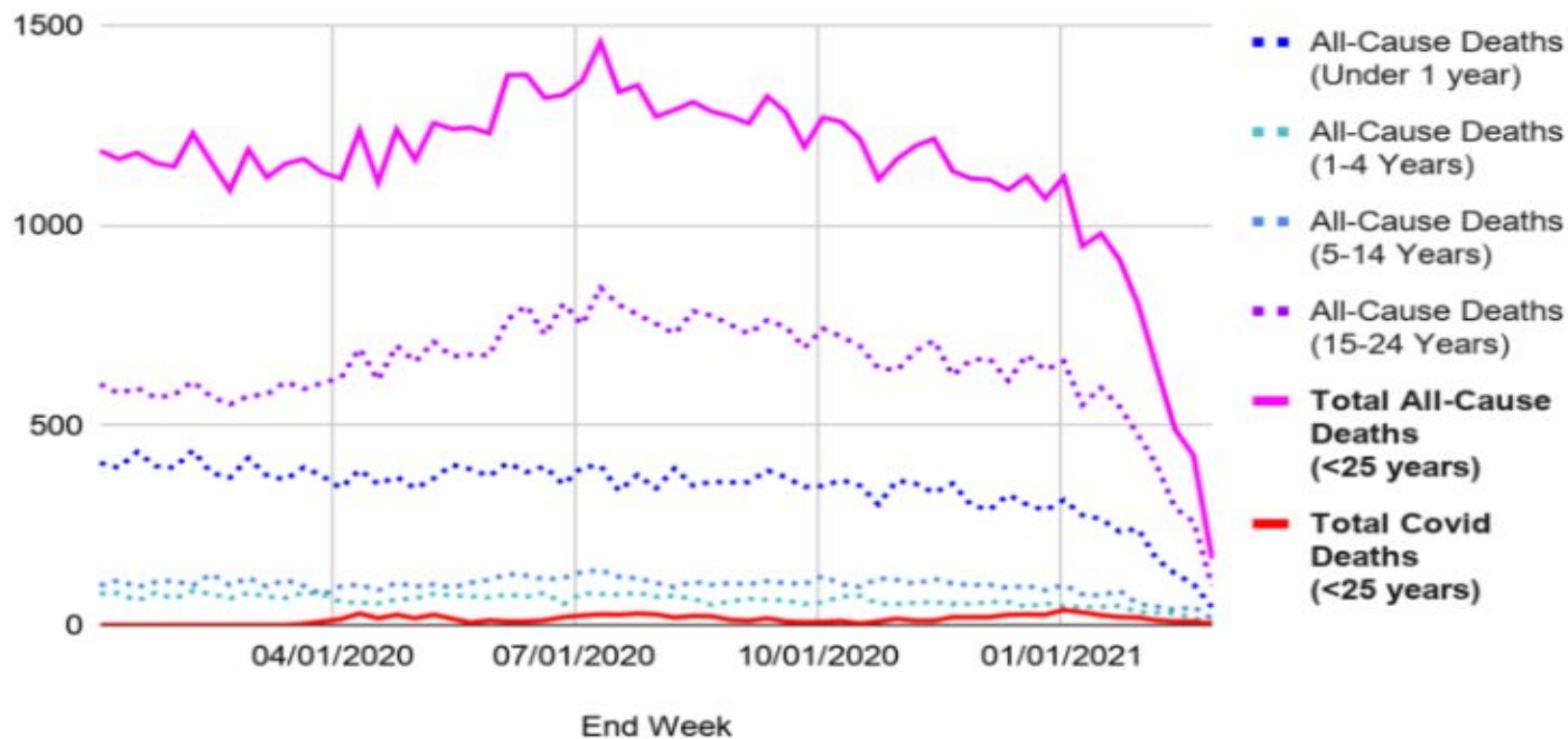
Year in which death occurred	Sex	Age Group	All Deaths involving COVID-19 [1]	Deaths from All Causes
2020/2021	All Sexes	0-17 years	226	37,537
2020/2021	All Sexes	18-29 years	1,866	71,479
2020/2021	All Sexes	30-39 years	5,485	101,822
2020/2021	All Sexes	40-49 years	14,792	153,493
2020/2021	All Sexes	50-64 years	77,215	648,381
2020/2021	All Sexes	65-74 years	113,198	795,802
2020/2021	All Sexes	75-84 years	144,064	969,808
2020/2021	All Sexes	85 years and over	160,729	1,189,298
2020/2021	All Sexes	All Ages	517,575	3,967,620

Source: CDC Weekly Updates by Select Demographic and Geographic Characteristics Provisional Death Counts for Coronavirus Disease 2019 (COVID-19)

PEDIATRIC DEATHS DURING THE PANDEMIC

- Of the 37,537 children 17 and under who died between 2/20 and 3/21, 226 died with or from COVID-19 (0.6%)
- Children in grades K-12 had an approx. one per million chance of death from COVID-19.

Comparison: Weekly U.S. All-Cause Deaths vs Covid Deaths



Source: Data from "Provisional COVID-19 Death Counts by Sex, Age, and Week." CDC 2020. As data is provisional it may not include complete data for the final 8 weeks (the time period with large decline on the graph) and is subject to change.

All-Cause Deaths per 100,000 of US population under 25 years

Ages	2018	2019	2020
1 – 4 Years	24	23.3	24.3
5 – 14 Years	13.3	13.4	14.9
15 -24 Years	70.2	69.7	92.5
Total < 25	107.5	106.4	131.7

Source: 2018/2019 data from “Mortality in the United States, 2019,” Figure 3: Death rates for ages 1 year and over: United States, 2018 and 2019; and 2020 data drawn from “Provisional COVID-19 Death Counts by Sex, Age, and Week.” 2020 data is an estimate based on the CDC’s provisional death count – which may not include complete data for the previous 8 weeks and is subject to change.

ALL-CAUSE VS. COVID DEATHS IN YOUNG PEOPLE

- Compared to 2018 and 2019 deaths per 100K, 2020 saw 23 additional deaths among those aged 15-24 (from 106.4 per 100K to 131.7 per 100K).
- Increase of 23%
- COVID only accounts for 1.2% of total deaths for 0-24 yrs.
- This age bracket accounts for 91% of youth suicides

STUDENT SUICIDE CLUSTERS: MASON, OHIO

15 Mason students were hospitalized in less than a month in the fall of 2020 for suicidal ideation.

COOK CHILDREN'S MEDICAL CENTER, FORT WORTH, TX

- 37 young people admitted for suicide attempts during the month of 9/20: **highest monthly count the hospital had seen since it began tracking in 2015**

CLARK COUNTY SCHOOL DISTRICT, NEVADA

- Over 3,100 potential suicide risks were flagged based on student writing on school-issued iPads
- By December, 18 students had taken their own lives.

(source, NYT, “Surge of Student Suicides Pushes Las Vegas Schools to Reopen”)

MENTAL HEALTH-RELATED ER VISITS: 47 STATES

- Beginning in April 2020, proportion of children's mental health ER visits increased and remained elevated through 10/20 (CDC data for all pediatric ER visits)
- **Compared with 2019**, proportion of mental health ER visits for children aged 5-11 and 12-17 years increased 24% and 31% respectively
- Months with significantly higher rates of suicide-related behaviors correspond to increased school closures and lockdowns.

SCHOOL-BASED MENTAL HEALTH SERVICES

- Many children receive mental health services in schools or coordinated by schools, and have lost these during school shutdowns
- Between 2012-2015, among all adolescents who used mental health services, 57% received some school-based services
- 35% received their mental health services **exclusively** in school health settings
- Adolescents in racial and ethnic minority groups, with lower family income, or with public health insurance were more likely to receive only school-based services.

DEPRESSION IN CHILDREN: RECENT STUDY

- JAMA Psychiatry, 12/9/20
- Having depression during childhood or in the teen years appears to increase odds of illness and early death later on (risk of premature death is increased 6 fold)
- Author's conclusion: "Children and teens diagnosed with depression have a significantly higher risk of premature death, self-harm and suffering from other diseases later in life."
- Years of Life Lost (YLL) has always been central to public health policies.

ANXIETY AND DEPRESSION IN YOUNG ADULTS

- National Center for Health and Statistics/CDC data
- For adults ages 18-29:
 - 46% reported significant sx of anxiety and depressive disorder between 4/23/20 and 5/5/20
 - This number rose to 56.5% during the 11/25/20-12/7/20 time period

The Incidence and Magnitude of the Health Costs of In-person Schooling during the COVID-19 Pandemic

Casey B. Mulligan

NBER PAPER

- **In-person** students and teachers during the pandemic were 20 times more likely to get COVID **outside** than inside school
- Less than 1/200 students and staff **that have close contact** (i.e. share a classroom) with an infectious person test positive for COVID
- A teacher teaching one day in person in school had the same risk of death (for self or a household member) as driving 5 miles
- Closing schools is looking to be a huge error

JAMA: YLL DUE TO SCHOOL CLOSURES DURING COVID-19

- Decreased educational attainment lowers life expectancy
- Decisional analytical model of YLL under differing conditions of school closure
- Compared YLL under both “schools open” and “schools closed” conditions, based on US study data
- 98.9% probability that leaving schools open would have been associated with a lower total YLL than school closure

“FUTURE DECISIONS REGARDING SCHOOL CLOSURES DURING THE PANDEMIC SHOULD CONSIDER THE ASSOCIATION BETWEEN EDUCATIONAL DISRUPTION AND DECREASED EXPECTED LIFESPAN AND GIVE GREATER WEIGHT TO THE POTENTIAL OUTCOMES OF SCHOOL CLOSURE ON CHILDREN’S HEALTH.”

KAISER FAMILY FOUNDATION

- “Due to the financial crisis accompanying the pandemic, there are also significant implications for mortality due to “deaths of despair.”
- 5/20 analysis projects that, based on the economic downturn and social isolation, additional deaths due to suicide and alcohol or drug misuse will last until 2029.
- Overcaution kills.