COVID-19 UPDATE:
PUBLIC HEALTH IMPACT OF COVID-19

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All drugs/vaccines issues discussed consistent with FDA approvals or authorizations
Figure 1: Conceptual Framework of Factors Affecting the Pandemic’s Trajectory
COVID-19 AROUND THE WORLD

Coronavirus around the world

Total deaths
4.8 million

Total confirmed cases
239.6 million

Latest daily figure
7,684
new deaths

56-day trend
438,446
new cases

Source: Johns Hopkins University, national public health agencies, 15 Oct

More than 239m coronavirus cases worldwide

Circles show number of confirmed coronavirus cases per country.
Deaths from COVID-19 and Other Pandemics and Wars, US

Deaths from Wars and Pandemics

- COVID-19, est. 1/1/22: 787,834
- COVID-19, 10/6/21: 705,383
- HIV/AIDS, till 2018: 675,000
- 1918 "Spanish" Flu: 600,000
- World War II: 405,399
- World War I: 116,516
- 1918 Flu pandemic: 100,000
- Vietnam conflict: 58,220
- Korean war: 36,574
- Operation Iraqi Freedom: 4,418
- 9/11 attack: 2,977
- Persian Gulf War: 2,586

Deaths from COVID-19:
- 8/31/21 estimate: https://coronavirus.jhu.edu/map.html
IMPACT OF COVID-19 ON LIFE EXPECTANCY, US AND UK

Fig. 2. Trends in life expectancy at birth by race and ethnicity: 1980-2020. Note that the data for the Black and White populations prior to 2006 include Latinos; data for these groups from 2006 onward are for the non-Latino Black and non-Latino White populations. The projections for 2020 are based on the IHME current projection scenario (October 9, 2020 update).

Fig. 3. Life expectancy and lifespan inequality (SD of ages at death) estimates for the periods 2001–2019, and for 2020 considering the first 47 weeks of the year by sex. Shaded areas represent 95% prediction intervals.

Andrasfay T, Goldman N. PNAS 2021;118:No. 5 e2014746118; Abuto JM, et al. BMJ 2021;75:735-740
At least half of households in the four largest U.S. cities—New York City (53%), Los Angeles (56%), Chicago (50%), and Houston (63%)—report serious financial problems including depleted savings, and trouble paying bills or affording medical care.

Many of these experiences are concentrated among Black and Latino households; households with annual incomes below $100,000; and households experiencing job or wage losses since the start of the outbreak.

At least four in ten Latino, Black, and Native American households report using up all or most of their household savings during this time.

One in five households in the United States (20%) report household members unable to get medical care for serious problems. A majority unable to get care when needed (57%) report negative health consequences as a result.

More than 1 in 3 households that include anyone with a disability report facing serious financial problems, many experiencing difficulty affording utilities and food.

More than one in three (36%) households with children face serious problems keeping their children’s education going, and among working households, nearly one in five (18%) report serious problems getting childcare when adults need to work.

About one in three households with children (34%) either do not have a high-speed internet connection at home or report serious problems with their connection while doing schoolwork or their jobs during the pandemic.

IMPACT OF COVID, WORLDWIDE AND US


Effect of COVID-19 pandemic lockdowns on planned cancer surgery for 15 tumor types in 61 countries: an international, prospective, cohort study, Lancet Oncology 2021


COVID-19 CASES/DEATHS, DISPARITIES, US

Data from 570,178 deaths. Race/Ethnicity was available for 480,586 (84%) deaths.

Data from 34,525,119 cases. Race/Ethnicity was available for 22,424,493 (64%) cases.

Nationwide, Black people have died at 1.4 times the rate of white people.

We’ve lost at least 73,462 Black lives to COVID-19 to date. Black people account for 15% of COVID-19 deaths where race is known.

https://covid.cdc.gov/covid-data-tracker/#demographics
https://covidtracking.com/race
IMPACT OF COVID-19 VACCINES ON DEATHS, US

https://covid.cdc.gov/covid-data-tracker/#rates-by-vaccine-status

Over 90,000 COVID-19 deaths since June 2021 likely would have been prevented with vaccinations

COVID-19 deaths among unvaccinated adults that likely would have been prevented with vaccinations, June-September 2021

MENTAL HEALTH ISSUES

• Methods: To evaluate mental health conditions among these workers, a nonprobability–based online survey was conducted during 3/29-4/6/21, among UA public health workers.

• Results: Among 26,174 respondents, 53.0% reported symptoms of at least one mental health condition in the preceding 2 weeks, including depression (32.0%), anxiety (30.3%), PTSD (36.8%), or suicidal ideation (8.4%). Severity of symptoms increased with increasing weekly work hours and percentage of work time dedicated to COVID-19 response activities.

• Conclusion: Implementing prevention and control practices that eliminate, reduce, and manage factors that cause or contribute to public health workers’ poor mental health might improve mental health outcomes during emergencies.

Bryant-Genevier J, et al. MMWR 2021;70:947

| TABLE 2. Traumatic events or stressors reported by 26,174 state, tribal, local, and territorial public health workers and comparisons* of symptoms of post-traumatic stress disorder† — United States, March–April 2021 |
|-------------------------------------------------|-----------------|-----------------|-----------------|
| Traumatic event or stressor/response            | No|^ | PTSD prevalence, % | PTSD PR (95% CI) |
| Personal-related                               |                 |                 |                 |
| Had COVID-19                                   | 2,514           | 36.7            | 1.03 (0.98–1.09) |
| Yes***                                         | 3,110           | 42.4            | 1.19 (1.14–1.25) |
| No                                            | 16,266          | 35.6            | Ref             |
| Got divorced or separated                      | 2,364           | 48.6            | 1.36 (1.27–1.47) |
| Yes                                           | 747             | 48.6            | Ref             |
| No                                            | 22,284          | 36.3            | Ref             |
| Experienced death of a loved one               | 7,580           | 42.3            | 1.24 (1.20–1.29) |
| Yes                                           | 7,580           | 42.3            | Ref             |
| No                                            | 15,603          | 34.0            | Ref             |
| Worried about the health of family and loved ones | 20,857       | 39.4            | 3.11 (2.77–3.48) |
| Yes                                           | 20,857          | 39.4            | Ref             |
| No                                            | 5,317           | 32.7            | Ref             |
| Felt isolated and alone                        | 12,944          | 49.8            | 2.46 (2.18–2.60) |
| Yes                                           | 12,944          | 49.8            | Ref             |
| No                                            | 10,220          | 20.2            | Ref             |
| Work-related                                   |                 |                 |                 |
| Felt overwhelmed by workload or family/work balance | 16,583       | 45.4            | 3.10 (2.91–3.30) |
| Yes                                           | 16,583          | 45.4            | Ref             |
| No                                            | 6,515           | 14.2            | Ref             |
| Felt disconnected from family and friends because of workload | 14,051       | 49.0            | 2.77 (2.64–2.91) |
| Yes                                           | 14,051          | 49.0            | Ref             |
| No                                            | 12,123          | 17.2            | Ref             |
| Felt inadequately compensated for work         | 13,073          | 45.2            | 1.85 (1.78–1.93) |
| Yes                                           | 13,073          | 45.2            | Ref             |
| No                                            | 9,104           | 24.4            | Ref             |
| Felt unappreciated at work                     | 12,362          | 46.5            | 1.82 (1.76–1.89) |
| Yes                                           | 12,362          | 46.5            | Ref             |
| No                                            | 10,551          | 25.5            | Ref             |
| Experienced stigma or discrimination because of work | 9,962         | 56.2            | 1.86 (1.82–1.94) |
| Yes                                           | 9,962           | 56.2            | Ref             |
| No                                            | 16,244          | 29.8            | Ref             |
| Received job-related threats because of work   | 10,262          | 33.4            | Ref             |
| Yes                                           | 10,262          | 33.4            | Ref             |
| No                                            | 20,902          | 33.4            | Ref             |
| Felt bullied, threatened, or harassed because of work | 5,376         | 61.8            | 1.85 (1.78–1.92) |
| Yes                                           | 5,376           | 61.8            | Ref             |
| No                                            | 17,794          | 30.0            | Ref             |
| Interacted often with the public               | 11,143          | 41.1            | 1.23 (1.19–1.28) |
| Yes                                           | 11,143          | 41.1            | Ref             |
| No                                            | 11,805          | 33.3            | Ref             |
| Worried about workplace exposure to COVID-19   | 11,197          | 42.6            | 1.36 (1.31–1.41) |
| Yes                                           | 11,197          | 42.6            | Ref             |
| No                                            | 11,805          | 33.3            | Ref             |

Abbreviations: IES-6 = 6-item Impact of Event Scale; PR = prevalence ratio; PTSD = post-traumatic stress disorder; Ref = referred group.

* Referent group for all prevalence ratio calculations was not experiencing the traumatic event/stressor (i.e., “No” category).
† Expressed symptoms of post-traumatic stress disorder in the 2 weeks preceding survey, defined as having an IES-6 score ≥ 31.75 out of 4.
‡ Some categories might not sum to 26,174, only those respondents who completed IES-6 questions (N = 22,248) are included in analysis.
§ Positive COVID-19 test or diagnosis by medical professional.
** Had symptoms compatible with COVID-19 but not tested or test inconclusive.
LONG-COVID-19 SYNDROME

Fig. 1. Classification of long COVID.

FREQUENCY AND SYMPTOMS OF LONG-COVID-19

• Goal: Assess long-COVID-19 in large EMR database

• Methods: Retrospective cohort study using EMR data from 81 million patients, 273,618 COVID-19 survivors; incidence within 6 months and 3-6 months after diagnosis

• Results: Among COVID-19 survivors (mean [SD] age: 46.3 [19.8], 55.6% female), 57.00% had one or more long-COVID feature recorded during the whole 6-month period (i.e., including the acute phase), and 36.55% between 3 and 6 months.

  • 1 in 3 patients had one or more features of long-COVID recorded between 3 and 6 months after a diagnosis of COVID-19. This was significantly higher than after influenza.

  • 2 in 5 of the patients who had long-COVID features in the 3- to 6-month period, had no record of any such feature in the previous 3 months.

  • The risk of long-COVID features was higher in patients who had more severe COVID-19 illness, and slightly higher among females and young adults. White and non-white patients were equally affected.

Schmidt C.  Nature Biotechnology 2021;39:908-913

Taquet M, et al.  PLOS Medicine 2021;28 September
THE COVID-19 PANDEMIC: LOOKING BACK AND LOOKING FORWARD, US RESPONSE

Missteps and Misinformation in US Pandemic Response
- Lack of a centralized, coordinated Federal response
- Executive Branch consistently minimized and trivialized risk of COVID-19
- US Public Health infrastructure woefully inadequate
- Slow development and scale-up of rapid, accurate, and widely available testing
- Inaccurate initial assumptions about transmission: Failure to focus on aerosol transmission; failure to recognize the importance of asymptomatic and pre-symptomatic spread
- Inadequate stockpiles of PPE and failure to rapidly ramp up production
- Initial failure to recommend masking by the public as a mitigation strategy
- Failure to initially focus on transmission in nursing homes

Major Remaining Pandemic Concerns
- Science denialism
- Politicization of pandemic response
- Vaccine hesitancy and resistance
- Vaccinations for children
- Evolution and spread of more highly transmissible and/or virulent variants
- Post-COVID-19 clinical issues
- Lack of public support for public health interventions (e.g., mask mandates) if /when another wave or new agent arrives
- Need for recurring boosters
- Unanticipated challenges
- Pandemic fatigue

Henderson D, Haessler S, Weber DJ. ICHE 2021;2 August