*April 9, 2020*

Trump suspends limits on the kind of pollution that escalates Covid-19 death

Long-term exposure to fine particles in the air released by refineries, power plants and vehicle engines significantly increases death rates from Covid-19, according to scientists at Harvard University's T.H. Chan School of Public Health. Their analysis of 3,080 U.S. counties concludes that even a slight increase in long-term exposure to fine particulate matter, or PM$_{2.5}$, "leads to a large increase in Covid-19 death rate."

The findings come on the heels of a March 26 announcement by EPA that it will ease enforcement for violations of environmental laws for companies that say the coronavirus pandemic was the cause of their noncompliance. The White House is currently reviewing EPA's draft review of the national particulate matter air quality standards, which is widely expected to call for retaining the current limits rather than strengthening them.

A composite of two maps: Long-term average exposure to fine particulate matter and Covid-19 death rates per 10,000 by county, as of April 7. See separate maps below for keys.
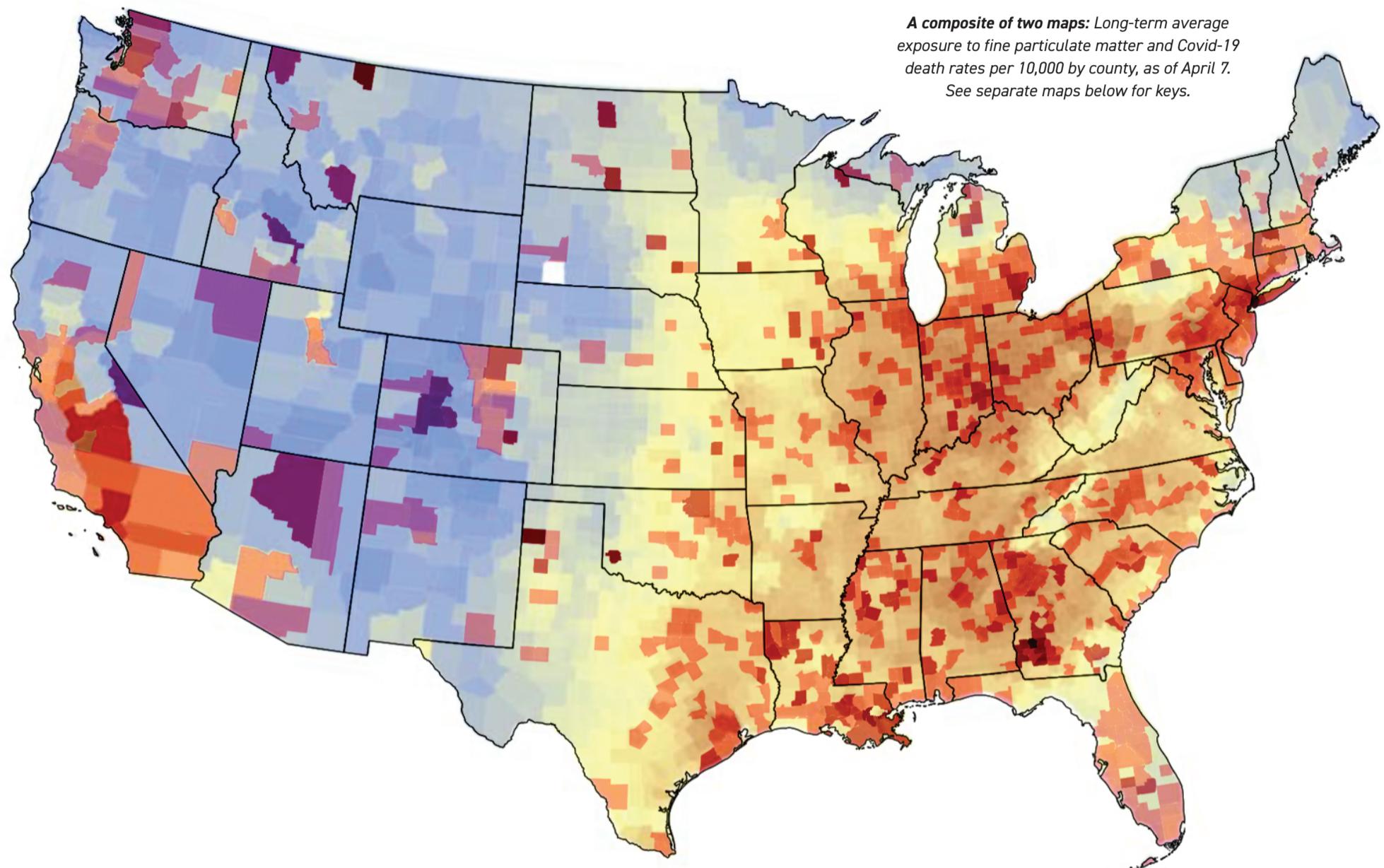
PM$_{2.5}$ levels vary widely by location

The Harvard study found that long-term exposure to an increase of 1 microgram of fine particulate matter per cubic meter of air escalated Covid-19 death rates by 15 percent. Researchers calculated long-term county-level exposure by averaging PM$_{2.5}$ readings from 2000 to 2016, using established exposure prediction models.

Mean value of daily outdoor air fine particulate matter smaller than 2.5 micrometers
MICROGRAMS PER CUBIC METER

0   3   6   9   12

Covid-19 death rates trend higher near cities, industries

Although the coronavirus pandemic has yet to peak, a pattern appears to be emerging where higher death rates correlate with PM$_{2.5}$ levels. The Harvard study analyzed mortality rates for each county, up to and including April 4. The map below depicts death rates as of April 7.

County-level death rates for Covid-19
DEATHS PER 10,000 POPULATION, AS OF APRIL 7

0   0.2   0.5   1.5   3.5   10   25
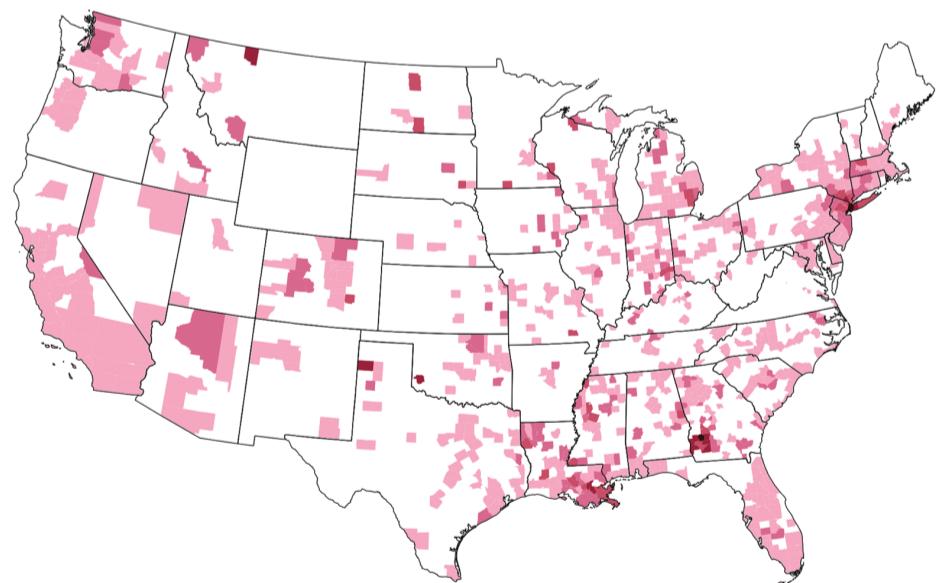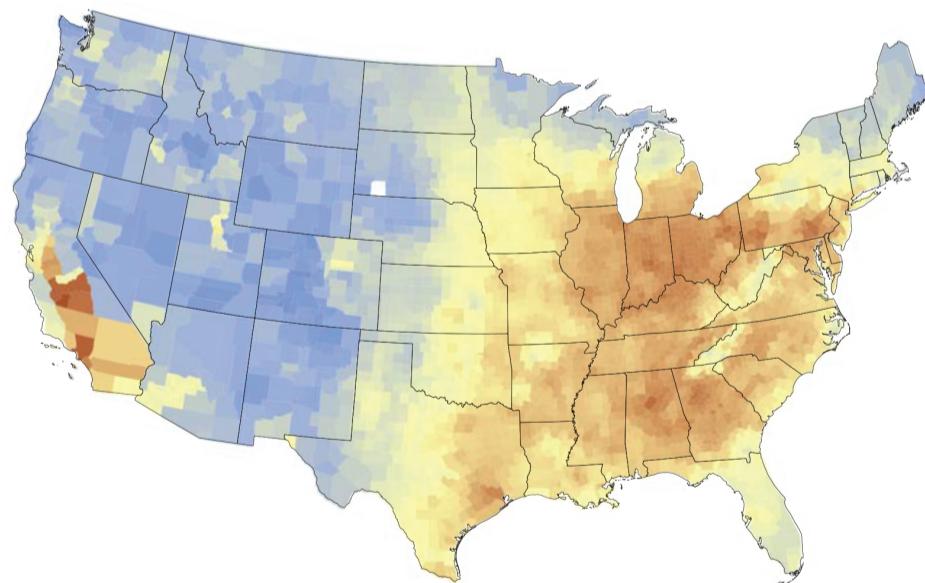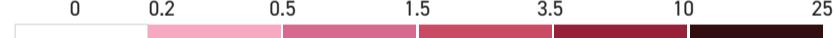
The analysis considered other factors influencing mortality rates

The scientists made statistical adjustments to account for 17 potential variables that could influence mortality rates, such as population density, percent of population 65 years or older, poverty rate, household income, education, race, weather, coronavirus testing, behavioral risk factors — and availability of hospital beds, which was found to have a strong influence on mortality rates.

Availability of hospital beds
HOSPITAL BEDS PER CAPITA

No data   0   0.2   30   70   150   350   650   995

Sources: Department of Biostatistics, Harvard T.H. Chan School of Public Health; Atmospheric Composition Analysis Group; DHS; Johns Hopkins University, Center for Systems Science and Engineering Coronavirus Resource Center; Alex Guillén, POLITICO Pro

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