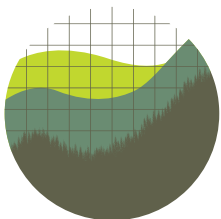




Weakening Our Defenses

*How the Trump Administration's Deregulatory Push
Has Exacerbated the Covid-19 Pandemic*



Institute for
Policy Integrity

NEW YORK UNIVERSITY SCHOOL OF LAW

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“If you were President these past few months—would rolling back long-standing, fundamental public health protections have been at the top of your pandemic-response plan? Probably not. But this report shows that’s exactly what the Trump administration has been up to while we have been hunkered down in our homes trying to keep our families safe. These rollbacks have put all of us—especially low-income communities, Black people and people of color, and essential workers—at higher risk of contracting and dying from Covid-19. This report details the many ways.”

GINA MCCARTHY

President and CEO, NRDC (Natural Resources Defense Council);
Former Administrator, U.S. Environmental Protection Agency;
Professor of the Practice of Public Health at the Harvard T.H. Chan School of Public Health

“From day one, the Trump administration has attempted to roll back not only existing public health protections, but the scientific basis on which all public health protections are based. That’s short-sighted and foolish at the best of times, but they have continued to dismantle safeguards even as the country faces the threat of Covid-19, one of the biggest public health crises in our history. Their failure to listen to and act on the best available science is irresponsible and dangerous.”

DR. KATHLEEN REST

Executive Director, Union of Concerned Scientists

“For decades, the scientific community has expanded society’s understanding of how pollution worsens public health, and how regulatory safeguards and healthcare access improve wellbeing. This report shows how policy failures have exacerbated risk factors that lead to a host of negative health outcomes, leaving Americans vulnerable. When the Covid-19 pandemic reached our vulnerable populations, an already dangerous situation was made vastly worse.”

DR. KEVIN CROMAR

Director of the Air Quality Program, Marron Institute of Urban Management;
Associate Professor of Environmental Medicine and Population Health,
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The Institute for Policy Integrity thanks these experts for their review of an early draft of this report.

Table of Contents

Executive Summary	1
I. Deregulation of Pollution Exacerbates Covid-19 Risk Factors	3
A. Pollution-Related Diseases and Exposures Are Linked to Covid-19 Risk Factors	3
Particulate Matter	4
Ozone	5
Nitrogen Oxides	5
Occupational Pollutants	5
Other Key Air Pollutants	5
Chart: The Links Between Pollution and Covid-19 Risk Factors	6
Environmental Justice Effects	7
B. The Trump Administration's Deregulatory Efforts Have Increased Air Pollution	8
EPA Actions	8
Department of Energy Actions	10
Department of Interior Actions	11
Department of Transportation Actions	11
Occupational Exposures	11
II. Deregulation of Consumption-Related Diseases and Behaviors Exacerbates Covid-19 Risk Factors	13
A. Tobacco- and Nutrition-Related Health Conditions Are Covid-19 Risk Factors	13
Smoking	13
Nutrition	13
Disparate Health Impacts	13
B. The Trump Administration Has Delayed and Weakened Tobacco and Nutrition Regulation	14
Blocking Immigrants' Access to Better Nutrition	14
Undermining Children's Nutrition	14

Delaying Calorie Disclosures	14
Delaying Tobacco Rules	15
III. Regulatory Failures to Protect Against Dangerous Living and Working Conditions Exacerbate Covid-19 Risk Factors	16
A. Certain Living and Working Conditions Have Created Covid-19 Outbreak Hotspots	16
Nursing Homes	16
Meat Processing Plants and Warehouses	16
Prisons, Jails, and Detention Centers	16
Homelessness	16
Crowded, Dense Housing	17
Implications for Communities of Color	17
B. The Trump Administration’s Regulatory Policies Have Created More Dangerous Living and Working Conditions	17
Scaling Back Nursing Home Protections	17
Prioritizing Speed Over Safety at Meat Plants	18
Increasing Health Risks for Truck Drivers	18
Undermining Workplace Safety	18
Erecting Obstacles to Affordable, Fair Housing	19
Mass Incarceration and Detention Policies	19
IV. Regulatory Choices to Reduce Healthcare Access Exacerbate Covid-19 Risk Factors	21
A. Poor Access to Healthcare Increases the Risks of Covid-19	21
B. The Trump Administration’s Regulatory Policies Have Impeded Access to Healthcare	22
Discouraging Access by Vulnerable Populations	22
Erecting Barriers to Reproductive Care	22
Allowing Discrimination in Healthcare	22
Setting Limits on Obamacare, Medicare, and Medicaid	23
V. Conclusion: Inaction and Future Actions Create Additional Threats	24

Executive Summary

Multiple government failures are implicated in both the staggering spread of Covid-19 throughout the United States and the devastating health and economic tolls that have followed. Some failures—like the failure to maintain the government’s strategic stockpile of medical supplies including protective gear and respirators, and the failure to ramp up nationwide testing capacity—have been documented by the press and analysts.¹ Researchers are also starting to examine the federal government’s use of the Covid-19 pandemic as a reason to scale back enforcement of important regulatory protections²—or to roll them back entirely³—and how the health, environmental, and economic consequences of these new deregulatory efforts may mix dangerously with the risk factors for contracting and dying from the novel coronavirus.⁴

But the failure of the federal government to adequately safeguard the health, environment, and economy of the United States with efficient regulatory protections is not a new phenomenon. For over three years now, the Trump administration has systematically delayed, undermined, and erased key regulations that protect our health, our environment, our workplaces, our living conditions, and our economy. The steady erosion of regulatory safeguards has severely compromised our baseline defenses against Covid-19.

For example, though the scientific understanding of the risk factors for Covid-19 continues to develop, there is growing evidence that pollution-related illnesses, such as many cardiovascular diseases and chronic lung conditions—and possibly the direct exposure to pollution itself—are strongly correlated with increased risk of contracting and dying from the novel coronavirus.⁵ Unfortunately, for over three years, the Trump administration has relentlessly increased exposure to pollution by rolling back and delaying dozens of protections. The resulting hundreds of thousands of tons of additional air pollution and myriad related health impacts have most likely exacerbated the Covid-19 outbreak in the United States.⁶

Similarly, nursing homes were an early hotbed of Covid-19 outbreaks in the United States, and living or working in a nursing home continues to be a major risk factor for contracting the novel coronavirus.⁷ Unfortunately, for over three years, the Trump administration has repeatedly delayed and scaled back the enforcement of regulations designed to secure healthier living conditions in nursing homes, including a requirement to have a specialist in infection prevention on staff. Those deregulatory efforts have put a vulnerable population at even greater risk.⁸

The list goes on and on: diabetes is a major risk factor for Covid-19, yet the Trump administration has rolled back nutrition standards; HIV and cancers are risk factors, yet the Trump administration has erected regulatory obstacles to accessing reproductive health care and other health care for under-insured populations; certain dangerous work sites (like meat-packing plants) have been hot spots for the pandemic, yet recent deregulation has made many workplaces more dangerous (like allowing plants to prioritize speed over safety, which could force employees to work in even closer quarters); and so on, with the Trump administration’s deregulatory efforts aggravating almost every major risk factor for Covid-19.

And it is no coincidence that, just as minority and low-income populations have been especially hard hit by Covid-19,⁹ minority and low-income populations have suffered disproportionately from the health, safety, and economic impacts caused by the Trump administration’s harmful regulatory and deregulatory actions. U.S. patient data shows that racial and ethnic minority groups have experienced worse health outcomes from Covid-19, which the Centers for Disease

Control and Prevention (CDC) reports may be due to disparate risk factors like underlying health conditions, work circumstances, living conditions, and lower access to care among these groups.¹⁰ President Trump's deregulatory agenda has affected all those factors, and, therefore, the disproportionate racial and economic justice impacts of deregulation are now most likely compounding in deadly ways in the wake of the Covid-19 pandemic.

This report reviews the major categories of risk factors for Covid-19 and catalogues some of the most egregious regulatory decisions during the Trump administration that likely have already begun to exacerbate those risk factors. Even before the pandemic, those regulatory decisions collectively were already causing dire consequences for public health and safety, the environment, and economic conditions—but we now know that those regulatory decisions have likely also increased our collective susceptibility to Covid-19. In short, the rash of harmful deregulation that has broken out since the start of the Trump administration has been, in many ways, a likely harbinger of the U.S. outbreak of Covid-19.

I. Deregulation of Pollution Exacerbates Covid-19 Risk Factors

Some of the Trump Administration's most prominent and destructive deregulatory attacks have targeted environmental protections. These environmental deregulations were already troubling because they will directly cause significant social harms. But they are now even more unfortunate, because pollution is most likely linked to multiple key risk factors for contracting and suffering more severe cases of Covid-19.

A. Pollution-Related Diseases and Exposures Are Linked to Covid-19 Risk Factors

Pollution may increase the risk of contracting, suffering from, and dying from Covid-19 through at least three different possible pathways.¹¹ First, particles of pollution may help carry, and so transmit, the novel coronavirus itself. Many scientists have warned that the novel coronavirus is transmitted not just by large respiratory droplets, but rather is airborne as well.¹² And there is some preliminary evidence, consistent with studies for other viruses, that the novel coronavirus can be found on molecules of particulate matter pollution in the air.¹³ Part of the motivation for studying this possible connection between pollution and Covid-19 is the hypothesis that “[a]n epidemic model based only on respiratory droplets and close contact could not fully explain the regional differences in the spreading” of Covid-19 in highly affected regions like Italy.¹⁴ If pollution is a vector for the novel coronavirus, then increased pollution levels could play a direct role in transmission.

Second, exposure to ambient levels of air pollution could affect the risk of infection, hospitalization, and mortality. Inflammation of the lungs is one possible pathway through which acute exposure to ambient pollution levels could increase susceptibility to catching the novel coronavirus.¹⁵ Though research is still preliminary, and though several important studies have not yet undergone full, external peer review,¹⁶ a growing number of epidemiological studies suggest links between the number of total Covid-19 cases, severe cases, or fatalities on the one hand, and on the other hand increased ambient pollution levels of particulate matter, nitrogen dioxide, ozone, or carbon monoxide, with somewhat more mixed evidence for sulfur dioxide.¹⁷ One recent economic analysis also found that “increased pollution nearly doubles the conditional daily COVID-19 death rate and case rate.”¹⁸ These studies vary in how many confounding variables (such as meteorology variables) they do or do not control for, and the studies do not yet verify a causal relationship. And at least one contrary economic study found no correlation between pollution and Covid-19 death rates.¹⁹ Nevertheless, the correlation suggested by numerous preliminary studies is compelling. Pollution's effects on inflammation, immune defenses, underlying diseases, or other pathways are all possible explanations for the correlation suggested by this growing body of evidence.

Third, underlying health conditions related to pollution most likely increase the severity of Covid-19. Overall, hospitalization is six times likelier—and death is twelve times likelier—among Covid-19 patients with underlying health conditions.²⁰ According to the CDC, the National Institute of Health, the World Health Organization, and multiple preliminary scientific studies, the underlying health conditions that likely increase the susceptibility to, severity of, or mortality from Covid-19 include:

- cardiovascular diseases (including those caused by hypertension);
- chronic respiratory disease (including chronic obstructive pulmonary disease (COPD) and moderate-to-severe asthma²¹);
- diabetes;
- severe obesity;
- chronic kidney diseases (including those caused by hypertension);
- chronic liver diseases;
- cancers (with or without direct immunosuppression);
- and chronic neurological disorders (including dementia), among others.²²

All of the above underlying health conditions can most likely be caused or exacerbated by short-term or long-term exposure to pollution. For some pollutants, some health effects from short-term exposure can begin to emerge after even just a few minutes or hours of sharply increased pollution level; longer-term, steady exposure to more moderately increased pollution levels can begin to produce health effects after even just a month or more of exposure.²³ Acute, short-term exposure to pollution can increase the risk of infection for many viruses through such effects as impaired lung function, increased permeability of the pulmonary epithelium, increased oxidative stress and the production of free radical, and a host of immune system impairments.²⁴ And though some longer-term health effects, like cancers, may not fully develop until years after exposure, some long-term pollution-related illnesses may be presaged by or exacerbated by more immediate degradations in health, such as systemic inflammation,²⁵ and those more immediate health degradations that precede longer-term impacts may still be relevant to Covid-19 risk factors.

Several air pollutants that have increased recently due to deregulation during the Trump administration²⁶ are linked to those key underlying health conditions, with substantial evidence that either demonstrates causality or strongly suggests a correlation.

Particulate Matter: There is a scientific consensus that short-term exposure to fine particulate matter (PM) causes cardiovascular effects, including heart attacks and heart-related hospitalizations, as well as likely effects on arrhythmia, thrombosis, and decreased heart function.²⁷ Longer-term exposure to fine particulate matter is associated with coronary heart disease, myocardial infarction, and stroke, as well as other heart diseases, including possibly hypertension.²⁸

There is also strong evidence of a relationship between short-term fine particulate matter exposure and exacerbation of chronic obstructive pulmonary disease (COPD) and asthma, as well as other severe respiratory diseases.²⁹ Animal toxicological evidence demonstrates that short-term exposure is associated with “altered host defense, greater susceptibility to bacterial infection, [and] airway irritant effects.”³⁰ Longer-term exposure to fine particulate matter likely alters lung development, increases asthma, decreases adult lung function, and causes pulmonary inflammation.³¹

Long-term exposure to fine particulate matter also likely causes both cancer (possibly including lung cancer) as well as neurological effects (possibly including contributing to dementia).³² And there is a growing body of research suggestive of a link between both short-term and long-term exposure to fine particulate matter and various metabolic effects, including diabetes.³³

Ozone: Short-term exposure to ozone causes decreased lung function, decreased airway responsiveness, respiratory tract inflammation, asthma exacerbation, COPD exacerbation, and other respiratory effects and diseases, and is associated with increased risk of respiratory infection and impaired lung host defense.³⁴ Long-term ozone exposure is likely related to the development of asthma and other respiratory conditions.³⁵ Ozone is also linked to increased respiratory hospital admissions and “premature aging of lungs.”³⁶

Short-term ozone exposure also likely has a causal relationship with metabolic effects, including impaired glucose tolerance, “perturbations in glucose and insulin homeostasis,” and inflammation,³⁷ and may also be associated with “obesity-relevant endpoints.”³⁸ Such health effects may in turn be associated with diabetes.³⁹ There is also at least suggestive evidence that short-term and long-term ozone exposures are associated with cardiovascular effects⁴⁰ and nervous system effects.⁴¹

Volatile organic compounds (VOCs) contribute to the formation of ozone,⁴² and also carry health risks on their own, including irritation of the nose and throat; damage to the liver, kidney, and central nervous system; and suspected causal connections to cancer.⁴³ VOCs can also react to form particulate matter.⁴⁴

Nitrogen Oxides: Short-term exposure to nitrogen oxides (NO_x) causes respiratory effects like inflammation and asthma attacks, as well as likely COPD, increased respiratory infections, and other effects, while long-term exposure likely causes asthma development.⁴⁵ There is also suggestive evidence that both short-term and long-term exposure to nitrogen oxides could cause cardiovascular effects, diabetes, and cancer.⁴⁶

Importantly, NO_x is a key precursor for both particulate matter and ozone.⁴⁷

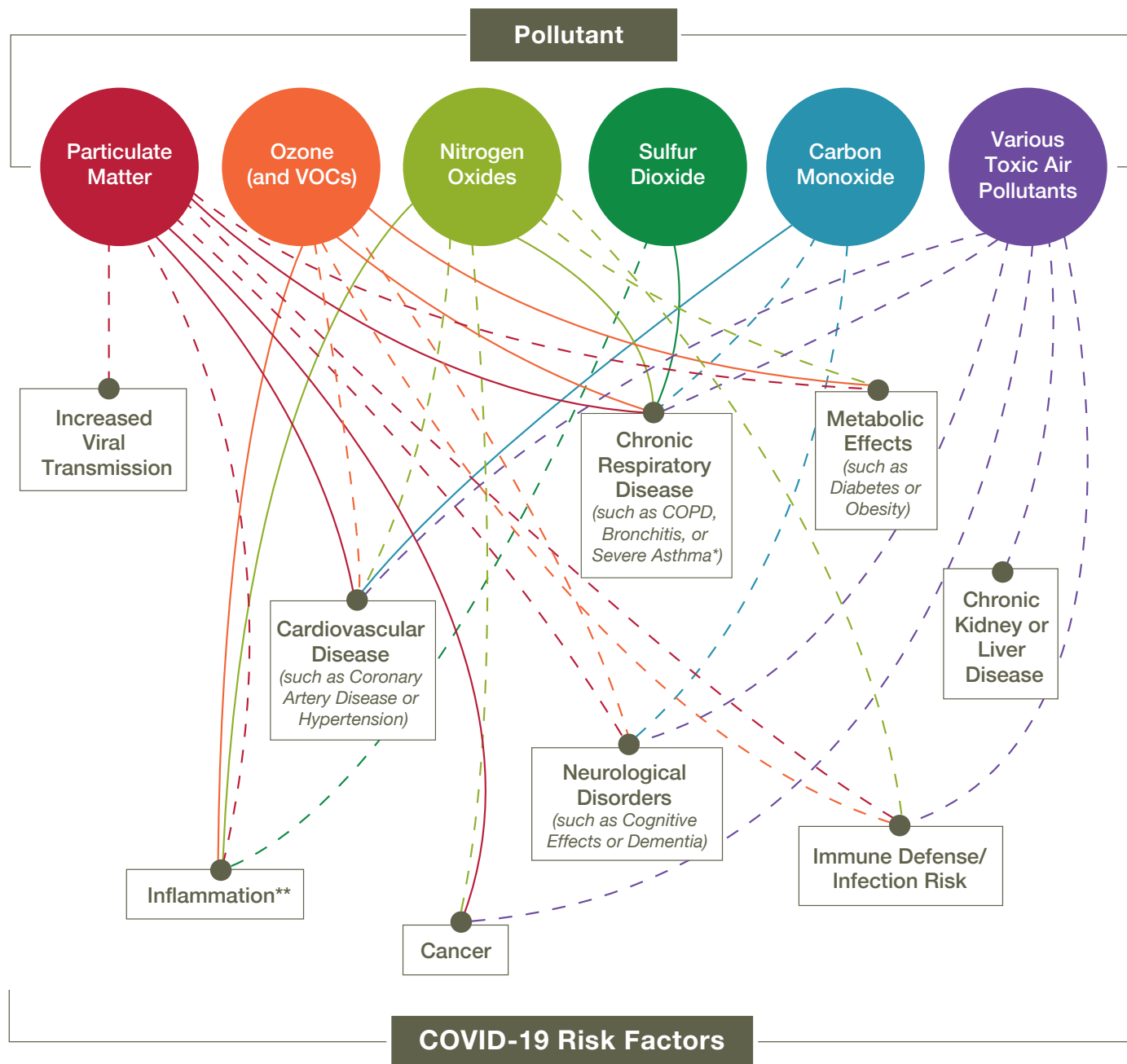
Occupational Pollutants: Exposure to certain pollutants is much higher in particular occupations. Beryllium is a toxic air pollutant that causes pneumonia, lung lesions, a lung condition called chronic beryllium disease, and lung cancer,⁴⁸ and exposures are more common for welders, machinists, and smelters, among other occupations.⁴⁹ Silica is fine particulate matter that causes silicosis (an incurable lung disease), lung cancer, chronic obstructive pulmonary disease (COPD), and kidney disease, and exposures are more common for construction and maritime workers, as well as throughout general industry.⁵⁰ Other industries, like mining, also face a unique mix of occupational air pollutants.

Other Key Air Pollutants: Short-term and long-term exposure to sulfur dioxide (SO_2) exacerbates asthma, and may cause various other health effects,⁵¹ including “airway hyperresponsiveness and inflammation,” and decreased lung function.⁵² Sulfur oxides are also a precursor for particulate matter.⁵³

Exposure to carbon monoxide likely causes cardiovascular disease and may be associated with respiratory disease and central nervous system effects.⁵⁴

Toxic air emissions—such as mercury, arsenic, lead, and nickel—are associated with various links to cancer, decreased immune activity, cardiovascular disease, liver disease, kidney disease, respiratory effects, and neurological effects.⁵⁵

The Links Between Pollution and Covid-19 Risk Factors



A solid line indicates strong evidence of a causal or likely causal connection. A dotted line indicates that the weight of correlative and suggestive evidence makes a relationship likely.

VOCs, nitrogen oxides, sulfur dioxide, and ammonia can all form particulate matter. VOCs and nitrogen oxides react to form ozone.

*There is some mixed evidence on whether asthma is a risk factor; the CDC lists moderate-to-severe asthma as a risk factor.

**Some studies have found preliminary evidence of direct links between pollution levels and increased cases or severity of Covid-19; inflammation is one possible pathway to explain such links.

Environmental Justice Effects: The disproportionate effects of pollution on communities of color and low-income communities are both well established and widespread.⁵⁶ In 2018, researchers from EPA’s National Center for Environmental Assessment found that Black Americans were exposed to particulate matter at 1.54 times the national average; the rate was 1.28 times higher for minorities overall, and 1.35 times higher for Americans in poverty.⁵⁷ Similarly, the NAACP and the Clean Air Task Force found that Black Americans live disproportionately close to pollution sources like oil and gas facilities, and so face disproportionately elevated risks of cancers from toxic air emissions.⁵⁸ Racial residential segregation in the United States is associated with increased particulate matter and ozone exposure for racial minority populations.⁵⁹ Consequently, as other analysts have documented, minority communities have borne “the brunt of Trump’s anti-environmental agenda.”⁶⁰

The Commonwealth of Massachusetts has released data showing the unequal effects of Covid-19 on communities of color and—citing pollution studies—has suggested that the unequal effects might be due to differences in air quality in different communities.⁶¹ The Massachusetts report notes:

While these findings are preliminary and need to be confirmed through more in-depth research, it is clear that air pollution influences many of the diseases considered as vulnerability factors for COVID-19 (e.g., asthma and cardiovascular disease), so it is plausible that long-term exposure to air pollution would be associated with worse COVID-19 outcomes.⁶²

A recent report by the Rhodium Group similarly found “that while Black, Latino, and Indigenous communities have been disproportionately impacted by COVID-19, those that live in high environmental risk areas are experiencing even more significant impacts.”⁶³ Though the report did not conclude that pre-existing environmental health risks led to higher Covid-19 death rates—and suggested perhaps some additional variable correlated with both environmental risks and Covid risks—the report “demonstrate[s] that the same communities that have borne the brunt of the impact of COVID-19 this year have borne the brunt of the impact of air, water, toxic, and hazardous waste pollution for decades prior.”⁶⁴ The disparate health effects of air pollution on minorities is also pronounced among the elderly⁶⁵—exactly the population that has been most at risk during the coronavirus pandemic.⁶⁶

“Front-line communities are under attack from multiple emergencies happening at the same time. Black communities are dealing with the systemic racism that has infected the policing in our communities that is literally choking us to death. **The rolling back of environmental rules and regulations has us gasping for air** due to the cumulative public health impacts from the burning of fossil fuels in our communities. Covid-19 continues to devastate black, brown and indigenous communities both in infections and deaths. When we say, ‘I Can’t Breathe,’ we literally can’t breathe.”

Testimony of Mustafa Santiago Ali, Vice President of the National Wildlife Federation, during the U.S. House Committee on Energy & Commerce’s Hearing on “Pollution and Pandemics: Covid-19’s Disproportionate Impacts on Communities”⁶⁷

In short, the fact that communities of color and low-income communities have experienced disproportionate shares of both pollution and Covid-19 is likely not a coincidence.

B. The Trump Administration's Deregulatory Efforts Have Increased Air Pollution

Nationwide, ambient concentrations of particulate matter pollution (with NO_x and SO₂ as precursors) increased about 5.5% by 2018, from its low in 2016, and a decline in federal enforcement actions likely explains at least part of that increase since the start of the Trump administration.⁶⁸ A myriad of deregulatory actions over the last three years have begun to increase pollution levels from where they otherwise would have been, and those pollution increases could already be exacerbating the health risks for Covid-19 in the United States.

EPA Actions: The Trump Administration's Environmental Protection Agency (EPA) has been busy rolling back environmental protections. Though not every rollback completely repeals the previous environmental protection, and though many of the rollbacks may not survive litigation, the tons of additional pollution or the additional health effects potentially at stake because of the rollbacks can be characterized:

- **Clean Power Plan:** The first compliance deadline for the Obama Administration's rule on reducing emissions from power plants was not slated until 2022, but EPA still anticipated important pre-compliance activity to begin by 2020 at least.⁶⁹ By 2020, EPA anticipated 50,000-60,000 fewer tons of NO_x per year and 14,000-54,000 fewer tons of SO₂ per year,⁷⁰ and a wide array of health benefits from reducing particulate matter and ozone emissions, including at least 2,900-9,300 fewer cases of respiratory symptoms, 113,000-228,000 fewer restricted-activity days, and 23,000-27,000 fewer school health-related absences, among many other health benefits⁷¹—and the benefits would only increase once the rule took full effect. Instead, after the rule was stayed by the Supreme Court, the Trump Administration left the rule in limbo for years, until finally repealing it and replacing it with a dramatically weaker version.⁷² Though the changing price of coal versus natural gas in recent years has produced important decreases in emissions as the electricity sector has moved away from coal, “those declines alone do not meet the Clean Power Plan's mandates. Indeed, EPA's own analysis of [the Trump Administration's weaker replacement rule] finds that eighteen states are not on track to meet their Clean Power Plan targets without additional emission reductions beyond their current trajectory. As a result, the agency further admits, implementation of the Clean Power Plan would continue to result in substantial emission decreases—between 3.0 and 5.8 percent nationally by 2035 for carbon dioxide, sulfur dioxide, nitrogen oxides, and mercury.”⁷³ Consequently, important health benefits that could have already started to occur under the Clean Power Plan have been lost due to the Trump Administration's deregulatory plans.
- **Clean Cars Rule:** By March 2017, the Trump Administration's EPA and Department of Transportation had already announced their intention to reconsider the greenhouse gas and fuel efficiency standards that the Obama Administration had set for passenger vehicles for model years 2022-2025.⁷⁴ The Obama-era standards were designed to reduce not just greenhouse gas emissions, but particulate matter and other tailpipe emissions, with corresponding health benefits.⁷⁵ By 2018, the Trump Administration had determined that it would weaken the Obama-era standards,⁷⁶ and in April 2020, the Trump Administration did exactly that, finalizing a drastic weakening of fuel efficiency and emissions standards for passenger vehicles.⁷⁷ Over the next three decades, this rollback will result in increased pollution from tailpipes and gasoline refineries that will contribute to 250,000

more asthma attacks, 350,000 more respiratory ailments, and one million lost workdays.⁷⁸ But by announcing back in 2017 its intention to roll back these standards, the Trump Administration likely caused some increases in pollution that the United States is already experiencing today. Because vehicle design and rollout takes three to five years, California's environmental regulators, for example, predicted that the Trump Administration's announcements in 2017 and 2018 would begin affecting manufacturers' decisions about vehicle emissions starting with model year 2020.⁷⁹ Furthermore, because the Obama-era standards encouraged manufacturers to achieve emissions reductions in earlier model years and bank those compliance credits for the future, just by announcing that the future standards would be weakened, the Trump administration undermined the incentives for manufacturers to take early actions to reduce emissions.⁸⁰ In short, some portion of the major health effects that will result from the rollback of the Obama Administration's Clean Car Standards have likely already begun to occur.

- **Oil and Gas Facilities:** The Obama Administration issued standards for new oil and gas facilities that were anticipated to reduce 150,000 tons of VOCs and 1,900 tons of hazardous air pollutants by 2020, with emissions reductions increasing thereafter.⁸¹ The Obama Administration also issued standards for hazardous emissions from petroleum refineries, anticipated to reduce 49,000 tons per year of VOCs and 5,200 tons per year of hazardous air pollutants by at least 2018.⁸² The Trump Administration has attempted to undermine these rule, delaying compliance requirements,⁸³ refusing to enforce parts of the rules,⁸⁴ and ultimately proposing the repeal and replacement of the rule for new oil and gas facilities with a much weaker standard.⁸⁵ EPA has also delayed the regulation of emissions from existing sources.⁸⁶ And in 2018, EPA finalized revisions that allow new sources to skip leak repairs during unscheduled shutdowns.⁸⁷ As a result of all the delay attempts, inadequate enforcement, failure to cover existing sources, and partial revisions that have occurred since 2017, at least some additional quantities of VOCs and hazardous air pollutants have been emitted from oil and gas facilities.
- **Hazardous Air Pollution:** In early 2018, the Trump Administration's EPA issued a guidance document revising a longstanding policy toward major sources of hazardous air pollution.⁸⁸ Under the new policy, nearly 2,000 sources of hazardous air pollution that had previously been classified as "major sources" and so subject to more stringent emissions controls would instead be able to reclassify as "area source" subject to laxer standards.⁸⁹ In 2019, the Union of Concerned Scientists found that at least 21 states could see increased hazardous air pollution under the new policy, including increases in chlorine, hydrochloric acid, styrene, benzene, and naphthalene, among other toxic air emissions.⁹⁰ Potential increases could occur, for example, from 42 industrial facilities in Louisiana's "Cancer Alley," from dozens of petrochemical facilities near Houston, Texas, and from up to 26 facilities near the New York City-Newark area.⁹¹ As those sources are reclassified, they can begin emitting more hazardous air pollution.
- **Effluent Standards:** In 2015, the Obama Administration finalized water quality standards for power plants that use water sources to produce the steam they need to generate electricity.⁹² By changing the operation of higher-polluting power plants, these water quality standards were also expected to decrease air emissions, including up to 14,500 fewer tons of NO_x per year, 5,000 fewer tons of SO₂ per year,⁹³ and associated reductions in particulate matter, ozone, and other harmful emissions.⁹⁴ However, in 2017, the Trump Administration's EPA delayed the rule,⁹⁵ and that delay was upheld by the U.S. Court of Appeals for the Fifth Circuit.⁹⁶ The Trump Administration's EPA is currently considering a revised standard that would substantially weaken the rule.⁹⁷ Consequently, the Obama Administration's rule has not been enforced, and none of the associated air quality benefits have occurred.

- **Cross-State Air Pollution:** In 2016, the Obama Administration issued a rule requiring 22 states to implement NO_x reductions by May 2017.⁹⁸ EPA estimated that by 2017, the rule would reduce 75,000 tons of NO_x per year, as well as producing health benefits from the associated reduction in particulate matter and ozone, such as over 67,000 fewer annual exacerbations of childhood asthma and 177,500 fewer restricted-activity days for adults per year.⁹⁹ But the Obama administration admitted that the rule did not go far enough to resolve downwind air quality problems,¹⁰⁰ and the agency was still required to issue a rule that fully addressed upwind states' obligations under the Clean Air Act.¹⁰¹ In 2018, the Trump Administration refused to do so, however, saying that upwind states had satisfied their obligations to reduce their ozone emissions into downwind states.¹⁰² The U.S. Court of Appeals for the District of Columbia Circuit vacated that decision and ordered the agency to return to the drawing board,¹⁰³ but the agency still has yet to issue a rule fully addressing the obligations of upwind states. Relatedly, the Trump Administration denied petitions from four states (Connecticut, Delaware, Maryland, and New York) seeking EPA to prevent upwind states from polluting excessively across their borders.¹⁰⁴ The D.C. Circuit has ordered EPA to reconsider Maryland's petition,¹⁰⁵ but the delayed action has left downwind states to continue to suffer from excessive levels of pollution.
- **Other EPA Rollbacks:** Other actions by the Trump Administration have also likely had air quality impacts, including a slew of changes to the emissions reduction requirements for large new and modified sources of air pollution,¹⁰⁶ delays in implementing new national standards for ambient levels of ozone,¹⁰⁷ the delayed implementation of emissions standards for municipal landfills,¹⁰⁸ changes to the toxic air pollutant standards for brick and tile facilities,¹⁰⁹ revised guidelines on regional haze,¹¹⁰ changes to how states have to account for emissions when large pollution sources malfunction,¹¹¹ and an exemption for farms and ranches for reporting harmful air emissions like ammonia and hydrogen sulfide,¹¹² among others.

Department of Energy Actions: The Trump Administration's Department of Energy (DOE) has delayed or failed to take action on several important energy efficiency standards for consumer and commercial appliances. The Obama Administration had produced five new energy efficiency standards in 2016. By reducing the demand for electricity, these standards deliver significant emissions reductions from power plants, including emissions of NO_x, SO₂, mercury, and other harmful pollutants. The standard for uninterruptible power supplies, for example, is expected to produce up to \$17 million worth of annual health benefits from reducing NO_x emissions alone.¹¹³ Cumulatively, the five standards were estimated to reduce emissions of NO_x, SO₂, and other harmful pollutants by hundreds of thousands of tons.¹¹⁴ Recall that NO_x is a precursor for both particulate matter and ozone.¹¹⁵

But the Trump Administration's DOE refused to publish and enforce the final standards. Only after litigation did DOE at last finalize the standards in early 2020 and set compliance deadlines:¹¹⁶ after a seven-month delay for the standards on walk-in cooler and freezers,¹¹⁷ and over a three-year delay for the standards on portable air conditioners, commercial packaged boilers, air compressors, and uninterruptible power supplies.¹¹⁸ By delaying these standards for several years, the DOE delayed the onset of important public health improvements that could have helped protect against Covid-19 risk factors like lung and heart disease.

The Trump Administration's DOE also delayed the test procedures for other energy efficiency standards,¹¹⁹ causing additional emissions. And the Trump Administration reversed course on standards for lightbulbs,¹²⁰ declining to issue efficiency standards that would have produced lifetime emissions reductions of tens of thousands of tons of NO_x and SO₂ and other harmful pollution.¹²¹ These actions all carried additional public health consequences.

Department of Interior Actions: The Trump administration has taken several steps that have increased pollution from the production of coal, oil, and gas on federal lands.

In 2016, the Obama Administration's Bureau of Land Management finalized a rule to prevent oil and gas operations on federal lands from wastefully venting methane; the rule was to take effect by 2018.¹²² Besides the climate benefits, the rule was expected to reduce over 250,000 tons per year of VOCs and nearly 2,000 tons per year of hazardous air pollutants, with health benefits including reduced cardiovascular and pulmonary disorders from VOC-related ozone and particulate matter pollution, and reduced incidence of cancer from exposure to hazardous air pollutants.¹²³ The Trump Administration started delaying the rule in 2017,¹²⁴ and eventually almost fully rescinded the rule in 2018.¹²⁵ Both the Obama Administration's rule and the Trump Administration's rescission have been subject to litigation, which remains ongoing,¹²⁶ and though some early pre-compliance for the Obama rule might have occurred, it is very likely that most if not all of the emissions that the Obama rule would have already prevented are, instead, still occurring.

The Trump Administration has also continued to approve additional coal, oil, and gas development on federal lands. For example, in 2019, the Office of Surface Mining finalized its review of the San Juan Mine Deep Lease Extension, which will generate over 8,000 tons per year of NO_x, nearly 3,500 tons per year of SO₂, over 1,000 tons per year of particulate matter, over 18,000 tons per year of carbon monoxide, and hundreds of tons per year of VOCs and hazardous acid gases from the coal mine and associated electricity generating station.¹²⁷ This is just one of multiple such projects approved during the Trump Administration that will produce harmful emissions from the construction, operation, and downstream emissions from coal, oil, and gas developments on federal lands.

The Bureau of Ocean Energy Management (BOEM) also stopped work¹²⁸ on an Obama Administration proposal that would have reduced emissions from offshore oil and gas facilities and so by 2019 delivered up to \$43 million per year worth in public health and environmental benefits from reducing NO_x and other pollutants,¹²⁹ including the particulate matter and ozone formed by NO_x.¹³⁰ Instead, BOEM eventually finalized a rule that estimated "no change in [health] benefits compared to BOEM's existing regulations."¹³¹

Department of Transportation Actions: Starting in 2017, the Trump Administration delayed and then rolled back a congressionally-mandated adjustment of the civil penalties for manufacturers that violate the energy efficiency standards for motor vehicles.¹³² The adjustment was meant to better account for the impacts of inflation. Modeling demonstrates that even a short-term delay to adjusting these penalties immediately began to increase the total consumption of gasoline, by tens or hundreds of millions of gallons of additional fuel per year.¹³³ All that additional gasoline emits particulate matter, NO_x, VOCs, carbon monoxide, and other harmful pollution when combusted.

At the end of the Obama Administration, the Department of Transportation finalized a rule setting performance measures for the states when using federal highway funding, including measures to assess and improve congestion and related air quality.¹³⁴ The Department had estimated that the rule would reduce at least 2,000 tons per year of carbon monoxide, as well as reducing VOCs, NO_x, and particulate matter.¹³⁵ In 2018, the Trump Administration revoked the rule.¹³⁶

Occupational Exposures: The Trump administration has worsened workers' exposure to occupational pollution. Toward the end of the Obama Administration, the Mine Safety and Health Administration (MSHA) finalized a rule on examining working conditions in metal and nonmetal mines,¹³⁷ in part to monitor and correct health risks and adverse conditions, including harmful respiratory irritants.¹³⁸ In 2017, the Trump Administration repeatedly delayed the rule's effective date,¹³⁹ and in 2018, the Trump Administration repealed those protections and instead allowed inspections to

be performed *after* miners are already working and no longer required disclosure of all adverse conditions to miners.¹⁴⁰ Though the Trump Administration's revisions were vacated and the Obama-era rule restored in June 2019 by the U.S. Court of Appeals for the D.C. Circuit,¹⁴¹ for over two years, workers did not have the benefit of the more protective standards.

Toward the end of the Obama Administration, the Occupational Safety and Health Administration (OSHA) finalized standards on exposure to beryllium at construction sites and shipyards, reducing dozens of annual deaths from and new cases of chronic beryllium disease.¹⁴² The Trump Administration repeatedly delayed the compliance deadline, postponing it until September 2020,¹⁴³ and OSHA has since proposed revoking and revising those protections.¹⁴⁴ The Trump Administration also delayed for several months the enforcement of standards to reduce respirable crystalline silica at construction worksites.¹⁴⁵ These delays have increased the occupational exposure of workers at risk for developing lung conditions that may in turn increase their risk of developing worse cases of Covid-19.

The Obama Administration's EPA had also issued a rule to protect pesticide applicators and farmworkers from exposure to fumes and residue, estimated to prevent over a hundred acute cases per year of low-severity illnesses like respiratory irritation, dozens of more moderate-to-severe acute cases like cardiac arrest and renal failure, and an unquantified reduction to risks of cancer, bronchitis, and asthma from reduced chronic exposures.¹⁴⁶ The rule was supposed to take effect in 2017, but the Trump Administration repeatedly delayed the effective date.¹⁴⁷ A federal district court finally vacated the delay efforts in 2018,¹⁴⁸ but while enforcement was delayed, millions of farmworkers were exposed to dangerous levels of pesticide fumes and residue.

II. Deregulation of Consumption-Related Diseases and Behaviors Exacerbates Covid-19 Risk Factors

Deregulation of tobacco and nutrition policies has likely exacerbated the Covid-19 pandemic in the United States, because smoking, diabetes, obesity, and hypertension are all risk factors for Covid-19. Overall, hospitalization is six times likelier—and death is twelve times likelier—among patients with underlying health conditions.¹⁴⁹

A. Tobacco- and Nutrition-Related Health Conditions Are Covid-19 Risk Factors

Smoking: Though research remains ongoing, recent work has found that smoking is most likely associated with worse Covid-19 outcomes.¹⁵⁰ A large study of Covid-related hospital deaths in the United Kingdom found that smoking most likely increased the risk of death.¹⁵¹ A literature review concluded that “smoking is most likely associated with the negative progression and adverse outcomes of COVID-19.”¹⁵² And a recent meta-analysis “confirms that smoking is a risk factor for progression,” and that any apparent lower prevalence of smoking among total Covid-19 patients “may be due to under-assessment of smoking.”¹⁵³ Moreover, smoking—as well as second-hand smoke exposure—is associated with many other health conditions that are also Covid-19 risk factors,¹⁵⁴ including hypertension,¹⁵⁵ cancer, heart disease, lung disease (including COPD), diabetes, general inflammation, and immune system problems.¹⁵⁶

Nutrition: Nutrition is also associated with diabetes,¹⁵⁷ obesity,¹⁵⁸ heart disease,¹⁵⁹ and hypertension¹⁶⁰—all of which have been repeatedly identified in preliminary scientific studies as being more prevalent among Covid-19 cases; diabetes in particular has shown strong associations with more severe case progression.¹⁶¹

Disparate Health Impacts: Communities of color and low-income communities may be especially vulnerable to delayed and weakened regulation of tobacco and nutrition. Smoking is more prevalent among certain racial and ethnic groups, as well as in lower-income communities.¹⁶² For example, Alaska Natives and American Indians¹⁶³ smoke at nearly twice the national rate,¹⁶⁴ and the lowest income bracket households in the United States smoke at nearly three times the rate of the highest income households.¹⁶⁵ And though Black Americans smoke fewer cigarettes than the national average, they are more likely to die from smoking-related diseases than white Americans, and “African American children and adults are more likely to be exposed to secondhand smoke than any other racial or ethnic group.”¹⁶⁶

Racial disparities are pronounced for nutrition-related health risks as well. Black adults have the highest prevalence of obesity in the United States, followed by Hispanic adults, possibly due in part to higher levels of food insecurity, limited access to healthy food options, and poor access to health care.¹⁶⁷ Black and Hispanic Americans have nearly 70% more cases of diabetes than white Americans; American Indian and Alaska Natives have nearly 100% more cases than white Americans; and disparities in diabetes also exist across socioeconomic status.¹⁶⁸ Racial and ethnic disparities in the prevalence of hypertension are also well documented.¹⁶⁹ Consequently, some recent deregulatory actions may have disparate health consequences for communities of color and low-income communities.

B. The Trump Administration Has Delayed and Weakened Tobacco and Nutrition Regulation

Blocking Immigrants' Access to Better Nutrition: In August 2019, the Trump Administration's Department of Homeland Security finalized the so-called "Public Charge" rule, which seeks to deny lawful permanent residency to immigrants who have participated in public assistance programs like the Supplemental Nutrition Assistance Program (SNAP).¹⁷⁰ While the rule was quickly enjoined by federal district courts, a divided Supreme Court stayed the injunctions and allowed the rule to take effect nationwide as of February 24, 2020¹⁷¹—just as the Covid-19 pandemic was ramping up in the United States. Though the Department of Homeland Security clarified in March 2020 that Covid-19-related benefits would not count under the rule,¹⁷² it remains exceedingly likely that hundreds of thousands, if not millions, of noncitizens enrolled in SNAP could *disenroll* in the near future for fear that their enrollment would block future permanent residency status for themselves or a family member.¹⁷³ Because access to healthy food has great influence on underlying health conditions like obesity, hypertension, and diabetes, the Public Charge rule could have especially dangerous implications during the Covid-19 pandemic. Forcing immigrants to prioritize spending their constrained resources on food may also affect their housing security in ways that could further have implications for Covid-19, as discussed below.

Undermining Children's Nutrition: The Trump Administration has undermined school nutrition policies. The Obama Administration's Department of Agriculture issued a rule on school nutrition, setting minimum requirements for whole grains and vegetables, limiting sodium and flavored milks, and limiting which foods could count as a "snack."¹⁷⁴ The goal of the rule was to partly address the obesity crisis in children, with one of every three children ages 2-19 falling into the overweight or obese classifications.¹⁷⁵ In 2017 and 2018, the Trump Administration first attempted to delay and scale back the rules on sodium, whole grains, and milk.¹⁷⁶ A federal district court vacated that rollback in April 2020.¹⁷⁷ But in the meantime, the Trump Administration has been working on a new proposed rule to roll back other elements of the original Obama regulation.¹⁷⁸ The repeated attacks have left schools somewhat uncertain about applicable requirements during an already uncertain time, as schools struggle to continue providing meals to students during the pandemic.¹⁷⁹ As a result, schools and students may increasingly turn back to low-cost, high-calorie, processed food options, which carry long-term risks for obesity, heart disease, and diabetes.¹⁸⁰

Delaying Calorie Disclosures: The Trump Administration has made it more difficult for consumers to make informed choices about their own nutrition. An Obama-era rule requiring the disclosure of calorie counts in restaurants was supposed to take effect by May 2017.¹⁸¹ The rule was anticipated to deliver over half a billion dollars per year in health benefits by helping consumers make choices to reduce their risk of obesity, diabetes, and death.¹⁸² The Trump Administration attempted to delay that rule by another year.¹⁸³ The delay was quickly challenged,¹⁸⁴ and the Food and Drug Administration (FDA) reversed course and put the rule into effect in August 2017.¹⁸⁵ However, the FDA did not release its supplemental guidance on compliance until May 2018,¹⁸⁶ and according to the National Restaurant Association, FDA enforcement of the rule did not begin before May 2019.¹⁸⁷ And since April 2020, FDA has stopped enforcement of the rule during the Covid-19 pandemic.¹⁸⁸ Though some restaurants are already complying with the original rule, the regulatory uncertainty and lack of enforcement has likely muted overall compliance, thereby delaying and decreasing the potential reductions in obesity and diabetes right at a time when the pandemic makes those conditions especially dangerous.

Delaying Tobacco Rules: The Trump Administration has hindered protections for smokers that would also benefit those exposed to second-hand smoke. In 2016, the Obama Administration’s FDA finalized the “Tobacco Deeming Rule,” which expanded FDA’s regulatory authority over e-cigarettes, vaporizers, cigars, hookahs, and pipe tobacco.¹⁸⁹ In 2017, the Trump Administration delayed the compliance deadlines for this rule, ultimately extending the deadlines for FDA pre-market review and clearance of such products until 2021 (for combustible products like cigars) or 2022 (for non-combustive products like e-cigarettes).¹⁹⁰ Though a federal district court found the delay unlawful in 2019, the court subsequently gave FDA until September 2020 to begin implementing its pre-market reviews, and FDA enforcement against any failures to comply would not begin until September 2021.¹⁹¹ The Trump Administration did announce quicker, prioritized enforcement against certain unauthorized flavored e-cigarette products,¹⁹² but large exemptions still persist for other flavors and products.¹⁹³

In addition to delaying pre-market reviews, in 2017, the Trump Administration also delayed all compliance deadlines under the Deeming Rule for three months, including requirements about ingredient and warning labels.¹⁹⁴ Additionally, after a federal district court temporarily enjoined FDA from enforcing warning requirements for cigars and pipe tobacco, FDA voluntarily also delayed enforcement of other new labeling requirements for those products.¹⁹⁵ During all of these delays, consumers would have a harder time making informed choices about smoking, likely increasing exposures to smoke and second-hand smoke—which we now know likely contributes to more severe cases of Covid-19.

III. Regulatory Failures to Protect Against Dangerous Living and Working Conditions Exacerbate Covid-19 Risk Factors

The Trump Administration has deregulated or failed to take action to protect living and working conditions in ways that have most likely exacerbated the outbreak of Covid-19 in some of the most persistent hotspots and other dangerous worksites.

A. Certain Living and Working Conditions Have Created Covid-19 Outbreak Hotspots

The novel coronavirus spreads more readily in close-contact living and working environments.¹⁹⁶ As such, certain key hotspots have emerged.

Nursing Homes: Nursing home residents and workers were among the earliest and hardest hit population groups.¹⁹⁷ As of July 1, 2020, *The New York Times* database reported Covid-19 cases in 12,000 nursing homes and long-term care facilities, totaling over 282,000 cases (10% of total U.S. cases) and 54,000 deaths (42% of total U.S. deaths).¹⁹⁸

Meat Processing Plants and Warehouses: Meat processing plants have been widely reported to be hotspots for Covid-19 transmission.¹⁹⁹ As of May 2020, almost half (12 of 25) of the U.S. counties with the highest rate of new infections were associated with meat processing plants.²⁰⁰ As the Center for Progressive Reform has catalogued, by early May 2020, “167 meat and poultry plants had suffered COVID-19 outbreaks with 9,400 workers testing positive for the disease and 45 deaths. But the actual numbers were probably higher because many companies have been reluctant to allow testing.”²⁰¹ Outbreaks have also occurred at Amazon warehouses²⁰² and other workplaces.²⁰³

Prisons, Jails, and Detention Centers: Prisons and jails have emerged as some of the most serious Covid-19 hotspots,²⁰⁴ in part due to crowded living conditions.²⁰⁵ As of July 1, 2020, at least 75,000 inmates or prison workers have been infected,²⁰⁶ with at least 6,400 cases in federal prisons²⁰⁷—the Lompoc Federal Prison Complex alone has over 1,000 cases.²⁰⁸

There has also been some reporting that federal immigration detention facilities are hotspots for transmission; however, because detention centers have not been testing detainees for Covid-19 at adequate rates, the analysis is somewhat incomplete and anecdotal.²⁰⁹ At least 2,500 immigrants in ICE detention have tested positive for Covid-19 as of June 2020.²¹⁰ One concern about the limitations of the testing data is that coronavirus-positive detainees might be deported before they can be tested.²¹¹

Homelessness: Homelessness is likely an independent risk factor for Covid-19, though the increased risk could also come in part from the fact that people who are homeless tend to be older and sicker than the general population.²¹² Even so, housing insecurity likely makes it harder for individuals to follow social distancing guidelines and access bathrooms to

wash their hands, which would be expected to increase the rate of infection.²¹³ Homeless shelters are also a likely hotspot for transmission, though limited testing, asymptomatic spread, and other potential sources of exposure for homeless individuals can make it hard to determine the independent role that shelters play in transmission.²¹⁴

Crowded, Dense Housing: Crowded public housing likely leads to higher infection rates, though a lack of testing again makes the analysis more challenging.²¹⁵ Urban density is likely a risk factor for higher infection rates, with New York City being an early epicenter of the pandemic in the United States.²¹⁶ However, density alone is not the whole story: for example, denser but more affluent Manhattan, at least in parts, has seen a lower infection rate than less dense, less affluent, boroughs of New York City.²¹⁷

Implications for Communities of Color: The CDC has suggested that the disproportionate burden of Covid-19 illness and death among racial and ethnic minority groups—and especially the overrepresentation of Black Americans among hospitalized patients—may be due to various underlying factors, including work circumstances and living conditions.²¹⁸ For example, Black and Hispanic Americans are more likely to be employed in essential industries, including healthcare and long-term care provision, agriculture, and the service industry—and as such have been unable to shelter at home or avoid exposures at work.²¹⁹ Similarly, racial and ethnic minorities “may be more likely to live in densely populated areas because of institutional racism in the form of residential housing segregation,” and beyond the heightened risk of transmitting the novel coronavirus in crowded, dense living conditions, “racial housing segregation” itself has been linked with a variety of adverse health outcomes and underlying conditions—including diabetes—and these “underlying medical conditions . . . put people at increased risk of getting severely ill or dying from COVID-19.”²²⁰ In addition, “[r]acial and ethnic minority groups are over-represented in jails, prisons, homeless shelters, and detention centers,” which have specific risks due to congregated living, shared food service, and more.²²¹ As such, regulatory policies that create more dangerous living and working conditions are likely to have racially disparate health impacts.

B. The Trump Administration’s Regulatory Policies Have Created More Dangerous Living and Working Conditions

Scaling Back Nursing Home Protections: The Trump Administration has undermined regulatory protections for nursing homes, which quickly emerged as Covid-19 hotspots in the United States. In 2016, the Obama Administration’s Centers for Medicare and Medicaid (CMS) finalized a rule for nursing homes that, among other mandates, would require a designated infection prevention officer, set standards for sufficiently competent nursing staff, and make other changes to improve the quality of care in nursing homes.²²² The goals were

“President Obama created regulations that we put through that were wholesale meant to address complete nursing home infection control, nursing home safety, overuse of antipsychotics, all these things. But sadly in 2017, the Trump administration got rid of those regulations and just said that they were not going to enforce them. That’s turned out to be, I think, the root of a lot of the challenge here.”

Andy Slavitt, Former Administrator of the Centers for Medicare & Medicaid Services²²⁸

to reduce avoidable healthcare-associated infections, reduce avoidable hospital admissions, and improve the overall quality of care.²²³ The rule was to be implemented in phases, starting in November 2016, with full implementation by November 2018.²²⁴ In 2019, the Trump Administration proposed rescinding and revising much of the rule, including the requirement for an on-site infection prevention officer.²²⁵ Though the rescission has not been finalized, in the meantime, the Trump Administration's CMS has steadily delayed implementation²²⁶ and reduced penalties for non-compliance of regulation of nursing homes in multiple ways,²²⁷ such that, most likely, significantly fewer nursing homes have infection preventionists on staff than they would have at this point under full enforcement of the Obama-era rule.

Prioritizing Speed Over Safety at Meat Plants: In October 2019, the Trump Administration's Department of Agriculture finalized a rule to "modernize" swine slaughter inspections.²²⁹ The new program, which pig processing plants may opt into, reduces the number of food safety inspectors in plants and removes caps on pig slaughter line speeds.²³⁰ Several labor unions sued, arguing in part that eliminating the cap on line speeds would place workers at higher risk of harm, and a federal district court has allowed litigation on that claim to proceed, recognizing that "slaughterhouse workers, operating in close quarters and using sharp objects . . . will face higher rates of injury when working at faster speeds."²³¹ But beyond the risk of laceration injuries, "line speeds have an impact on how close the workers have to be," which likely puts meat processing workers at greater risk for Covid-19.²³²

Increasing Health Risks for Truck Drivers: The Trump Administration has increased the health risks for other essential workers like truck drivers as well. In 2011, the Obama Administration issued a rule regulating the "hours of service" for truck drivers.²³³ Though reducing fatigue-related crashes was one motivating factor for the rule, the Federal Motor Carrier Safety Administration also calculated up to \$850 million in annual health benefits for truckers by reducing sleep deprivation and fatigue.²³⁴ Poor sleep is associated with multiple health conditions including obesity and cardiovascular illness, and insufficient breaks spent outside an idling truck also exposes drivers to extra vehicle exhaust, associated with lung disease.²³⁵ In September 2019, the Trump Administration finalized a repeal of certain provisions of the hours of service rule,²³⁶ and in June 2020 additional portions of the rule were repealed.²³⁷ This removes important health and safety protections for truck drivers—essential workers during the pandemic—and places them at higher risk of developing health conditions that are among the risk factors for Covid-19.

Undermining Workplace Safety: The Trump Administration has made worker safety less transparent and put employees at a disadvantage in negotiating for their own protections. At the end of the Obama Administration, the Occupational Safety and Health Administration (OSHA) issued a rule clarifying the ongoing duty of employers to keep accurate records about work-related injuries and illnesses and giving OSHA more time to complete enforcement actions against failures to maintain records.²³⁸ In 2017, President Trump signed a congressional resolution that rescinded that regulation.²³⁹ OSHA now is sharply time-limited in bringing certain enforcement actions against employers for improper tracking of workplace injuries.²⁴⁰ This in turn could create an incentive to hide the outbreak of Covid-19 cases at work and frustrate efforts to monitor outbreaks or develop responses to prevent and mitigate the spread of Covid-19.

Relatedly, the Obama Administration's OSHA also issued a rule to improve the tracking and reporting of workplace-related injuries and illnesses.²⁴¹ The Trump Administration repeatedly delayed the compliance deadlines under that rule,²⁴² and then in 2019 replaced the Obama-era rule with a requirement to file only short summary reports on total numbers of incidents, rather than specific reports on each injury or illness.²⁴³ In April 2020, OSHA issued further guidance under the new, more limited reporting standard, clarifying that employers need record Covid-19 cases as work-related only if there is concrete evidence indicating transmission among workers.²⁴⁴ Consequently, while the Obama-era rule could have served as a useful tool to track the spread of Covid-19 through workplaces and design steps to mitigate and

It is outrageous and shameful that, **now of all times**, the agency that exists to protect these workers' rights is working overtime to make it harder for them to win basic safety protections from their employers."

*Nicole Berner, General Counsel
of the Service Employees
International Union*²⁵¹

Trump administration put the project on hold indefinitely and has never gotten back to it."²⁴⁹ If such a standard had been finalized, it might have helped to prevent some of the 90,000 Covid-19 cases among U.S. healthcare workers that have already occurred as of June 2020.²⁵⁰

Erecting Obstacles to Affordable, Fair Housing: The Trump Administration has erected obstacles to safe, affordable, and fair housing. In 2015, the Obama Administration finalized a rule under the Fair Housing Act, called the Affirmatively Furthering Fair Housing Rule, to ensure that federal funding would help address racial segregation.²⁵² In 2018, President Trump's Department of Housing and Urban Development (HUD) suspended all reviews of local governments' plans for furthering fair housing and withdrew the assessment tools to help local governments measure whether they were making progress in reducing racial segregation.²⁵³ In 2020, the Trump Administration proposed a new rule that would effectively repeal the Obama Administration's Affirmatively Furthering Fair Housing Rule.²⁵⁴ As noted above, both racial residential segregation itself, as well as any associated disparately dense housing for vulnerable populations, carries health risks that may interact with the Covid-19 pandemic.

The "Public Charge" rule, discussed elsewhere in this report,²⁵⁵ also affects non-citizens' access to Section 8 housing vouchers, and so could interfere with safe, affordable housing in ways that increase the incidence of homelessness or overcrowded living conditions. Furthermore, by forcing immigrants off of the Supplemental Nutrition Assistance Program, the Public Charge rule may force non-citizens to spend more of their own resources on food at the expense of housing, which could disrupt their housing security in ways that could put them at increased risk for Covid-19.

Mass Incarceration and Detention Policies: In 2017, President Trump's first Attorney General, Jeff Sessions, rescinded the Obama Administration's guidance "that directed prosecutors to seek lower sentences for lower-level drug offenders when appropriate, and instead instructed federal prosecutors to seek the most serious charge possible in every case."²⁵⁶ The Brennan Center for Justice has identified this policy as an obstacle to reducing mass incarceration in federal prisons.²⁵⁷

prevent further spread, the Trump Administration has removed those protections and largely deferred to employers on the level of detail to track and report work-related illnesses.

In 2015, during the Obama Administration, the National Labor Relations Board (NLRB) ruled that certain franchisees in national chains were considered joint employers and liable for unfair labor practices, including any retaliation against protected employee activities.²⁴⁵ In early 2020, under a board of Trump-appointed members,²⁴⁶ the NLRB repealed that definition,²⁴⁷ thus possibly making it harder for employees of franchises to organize and make demands about safety.²⁴⁸

Additionally, as the Center for Progressive Reform has summarized, "[t]he Obama Administration OSHA worked on a pathogen protection standard to protect health care workers in response to the H1N1 pandemic of 2009-2010, but the

At the end of the Obama Administration, then-Deputy Attorney General Sally Yates ordered to reduce—if not completely end—the federal government’s use of private prisons, citing “serious concerns about the safety of inmates and corrections officers. Sessions repealed the Yates directive almost immediately after his confirmation.”²⁵⁸ Consequently, instead of immediately reducing the federal government’s total private prison population to “less than 14,200 inmates by May 1, 2017,”²⁵⁹ the number of people in private federal custody remained 27,569 through 2017.²⁶⁰ Those prisoners likely remain subject to the poor health conditions that Yates had cited her in directive to phase out the use of private prisons, including the failure “to verify that inmates receive certain basic medical services,” and a lack of coordination and oversight of healthcare monitoring.²⁶¹

In August 2019, the Trump Administration’s Department of Homeland Security finalized the Family Detention Rule, which significantly expanded the agency’s ability to detain immigrant children upon entering the United States.²⁶² Though the rule was quickly enjoined by federal district court (currently on appeal), U.S. Immigration and Customs Enforcement (ICE) continues to hold thousands of children and families in detention, and hundreds of ICE detainees—as well as dozens of detention center employees—have contracted Covid-19.²⁶³ It is well documented that detention centers typically have “unsanitary conditions with respect to the holding cells and bathroom facilities” and that migrants lack “access to clean bedding, and access to hygiene products”²⁶⁴—all of which likely increases the risk of contracting Covid-19. Just days before the publication of this report, a federal judge ordered the release of migrant children held in family detention centers, citing the severity of the Covid-19 pandemic.²⁶⁵

These policy decisions—by leading to more people incarcerated or detained in private facilities, and likely to more people incarcerated and detained overall—have contributed to the crowded, unhealthy conditions in prisons and detention facilities that have turned those locations into hot spots for Covid-19 outbreaks.

IV. Regulatory Choices to Reduce Healthcare Access Exacerbate Covid-19 Risk Factors

As many have noted, the Trump Administration's recently renewed legal attacks on the Affordable Care Act come at a particularly troubling time during the coronavirus pandemic.²⁶⁶ But the Trump Administration has also repeatedly made regulatory decisions over the past three years that have undermined access to healthcare and so may have increased the risks of Covid-19.

A. Poor Access to Healthcare Increases the Risks of Covid-19

A decreased ability to manage a chronic health problem that might be a risk factor for Covid-19 can further exacerbate a person's overall risk for contracting more severe cases of Covid-19. Difficulty in managing chronic health problems could be due to, for example, decreased access to primary care physicians or difficulty obtaining medications. A recent CDC review of data from Atlanta, for example, found that lack of insurance was associated with increased hospitalization rates for Covid-19.²⁶⁷

Therefore, poor access to healthcare can be a Covid-19 risk factor, especially in conjunction with any of the following conditions:

- Any of the underlying conditions already mentioned above, such as cardiovascular diseases (including those caused by hypertension); chronic respiratory disease (including chronic obstructive pulmonary disease (COPD) or moderate-to-severe asthma); diabetes; severe obesity; chronic kidney disease (including those caused by hypertension); chronic liver disease; cancers (with or without direct immunosuppression); and chronic neurological disorders (including dementia);²⁶⁸
- immunocompromising conditions or treatments (including HIV);²⁶⁹
- any underlying medical condition that is “not well controlled”;²⁷⁰
- and possibly pregnancy.²⁷¹

The disparities in access to healthcare by race, ethnicity, and socioeconomic status are well known. As the CDC has noted, Hispanic Americans are almost three times more likely to be uninsured than white Americans, and Black Americans are almost twice as likely.²⁷² Disparities in access to healthcare are further driven by employment and financial disparities that make it difficult to take time off work to seek care, as well as implicit biases among health care professionals, language barriers, and other causes.²⁷³ The CDC has also found that Black and Hispanic pregnant women may be disproportionately at risk for Covid-19 infections.²⁷⁴ Consequently, regulatory policies that impede access to healthcare may have disparate consequences by race, ethnicity, and socioeconomic status, both for general health and specifically for Covid-19.

B. The Trump Administration's Regulatory Policies Have Impeded Access to Healthcare

Discouraging Access by Vulnerable Populations: In August 2019, the Trump Administration's Department of Homeland Security finalized the so-called "Public Charge" rule, which seeks to deny lawful permanent residency to immigrants who have participated in public assistance programs like Medicaid.²⁷⁵ Though the rule was quickly enjoined by federal district courts, a divided Supreme Court stayed the injunctions and allowed the rule to take effect in early 2020²⁷⁶—just as the Covid-19 pandemic was ramping up in the United States. Though the Department of Homeland Security clarified in March 2020 that Covid-19-related benefits would not count under the rule,²⁷⁷ it remains exceedingly likely that upwards of 4.7 million Medicaid and Children's Health Insurance Program (CHIP) enrollees could *disenroll* in the near future for fear that their enrollment would block future permanent residency status for themselves or a family member.²⁷⁸ Because lack of insurance is a risk factor for Covid-19, this rule could have especially dangerous consequences during the pandemic.

Erecting Barriers to Reproductive Care: Starting in 2017,²⁷⁹ the Trump Administration began creating religious and moral exemptions to the coverage of certain preventive medical services under the Affordable Care Act, including required contraceptive coverage.²⁸⁰ Complex litigation ensued, and in July 2020, the Supreme Court upheld the exemption.²⁸¹ In 2019, the Trump Administration's Department of Health and Human Services (HHS) also finalized a rule to allow healthcare providers to object to the provision of certain health services—like abortion, hormonal contraception, and treatments for HIV²⁸²—on the basis of "conscience" or religious claims.²⁸³ A federal district court vacated that rule,²⁸⁴ but as of January 2020, HHS states that it "will continue to vigorously enforce the law under pre-existing authorities."²⁸⁵ As a result of HHS's ongoing approach under these rules, by the agency's own estimates, tens or hundreds of thousands of women could potentially be at risk of losing coverage for contraception and related reproductive healthcare.²⁸⁶ Recall that pregnancy, HIV, and other conditions related to reproductive health are likely risk factors for Covid-19.

In March 2019, the Trump Administration finalized a rule requiring healthcare providers that receive federal funding under Title X for family planning services to physically and financially separate their abortion services from their other healthcare services, and to prevent such providers from giving clear information and referrals to their patients about abortions.²⁸⁷ The rule not only complicates the provision of abortion services, but also threatens the financial viability of clinics that provide a host of reproductive healthcare and general preventative healthcare services. Hundreds of clinics have already had to give up their Title X funding or shut down completely, disrupting the healthcare of over a million female patients.²⁸⁸ The result is likely not only an increase in otherwise-unwanted pregnancies—with pregnancy being a likely risk factor for Covid-19—but also a decrease in the provision of reproductive and preventative healthcare services necessary to control sexually transmitted diseases like HIV, breast and cervical cancer, diabetes, and hypertension²⁸⁹—all of which are also Covid-19 risk factors.

Allowing Discrimination in Healthcare: In 2016, the Obama Administration finalized a rule under the Affordable Care Act to bar discrimination in the provision of healthcare on the basis of gender identity and provide other protections.²⁹⁰ A federal district court stayed that rule in December 2016 with a preliminary injunction,²⁹¹ and the Trump Administration made no effort to defend or reinstate the rule. In May 2019,²⁹² the Department of Health and Human Services proposed a host of changes, including: removing protections to prevent discrimination in the provision of healthcare on the basis of gender identity, allowing health insurance companies to provide benefits packages that may discriminate against people with different conditions or statuses, and reducing the requirements to provide language translation services for patients

with limited English proficiency;²⁹³ the repeal was finalized in June 2020.²⁹⁴ Allowing discrimination in the provision on healthcare has made it more difficult for a vulnerable population to access care and so to control any underlying health conditions that may be risk factors for Covid-19.

Setting Limits on Obamacare, Medicare, and Medicaid: In April 2017, the Trump Administration issued a rule shortening the 2017-2018 enrollment period for Obamacare to just six weeks.²⁹⁵ The shorter enrollment period—as well as the Trump Administration’s broader efforts to undermine Obamacare—may have led to more uninsured Americans.²⁹⁶ Similarly, in 2019, the Trump Administration issued a rule delaying by two years when U.S. territories would need to come into full compliance with the Affordable Care Act’s Medicare provisions,²⁹⁷ delaying important coverage for the residents of Puerto Rico, Guam, and other U.S. territories. In 2018, the Department of Health and Human Services finalized a rule giving insurance companies more flexibility to sell so-called “short-term” plans that do not have to comply with central requirements of the Affordable Care Act, such as the inclusion of essential benefits and bans on excluding patients with preexisting conditions.²⁹⁸ Though it is unclear how many people have bought such an alternate plan so far, those who have might be left with substantially lower insurance coverage and so poorer overall access to healthcare.

In 2018, the Centers for Medicare and Medicaid Services (CMS) began approving various states’ work requirements to qualify for Medicaid, threatening the insurance coverage for hundreds of thousands of low-income Americans.²⁹⁹ The potential drop in Medicaid enrollment also threatened the funding for the urban and rural hospitals that serve these lower-income patients.³⁰⁰ Though some of these state requirements have since been invalidated by the courts,³⁰¹ other state programs could yet be implemented,³⁰² and even the temporary loss of coverage in some states could be significant³⁰³—particularly during a pandemic.

V. Conclusion: Inaction and Future Actions Create Additional Threats

Just as the Covid-19 pandemic has shown no signs of slowing down in recent weeks,³⁰⁴ the Trump Administration's deregulatory efforts are showing no signs of slowing down. In April 2020, the Trump Administration finalized a drastic weakening of fuel efficiency and emissions standards for passenger vehicles.³⁰⁵ Over the next three decades, this rollback will result in 250,000 more asthma attacks, 350,000 more respiratory ailments, and one million lost workdays.³⁰⁶ Starting with the increased emissions from vehicles in model year 2021, the negative health effects from environmental rollbacks threaten to further exacerbate our collective risk for Covid-19 as the pandemic lingers.

Similarly, a new rule from the Department of Agriculture was scheduled to take effect in April 2020, setting more stringent work requirements for adults without children to qualify for the Supplemental Nutrition Assistance Program (SNAP).³⁰⁷ Once implemented, the rule will reduce SNAP benefit payments by over \$1 billion per year,³⁰⁸ thus making it harder for Americans to afford nutritious food, and so contributing to malnutrition, nutrition-related illnesses like diabetes, and also homelessness as low-income Americans are forced to divert their limited resources toward food instead of housing. Though the Department of Agriculture temporarily stayed the new work requirements until after the Covid-19 national emergency has been lifted,³⁰⁹ and though the rule is also subject to a preliminary injunction from a federal district court,³¹⁰ if circumstances change and the rule takes effect before the Covid-19 pandemic ends, the health and economic impacts could be devastating.

Moreover, every detrimental regulatory decision made over the last three years has also diverted federal agencies' valuable time and resources away from other courses of action that could have improved our health, our environment, our living and working conditions, and our economy in ways that would have better prepared the United States to weather the Covid-19 pandemic. The costs of inaction have likely been tremendous. For example, after disbanding its own independent scientific advisory panel in 2018, EPA recently announced it would take no action to tighten national standards for exposure to particulate matter.³¹¹ Had EPA not only set more stringent standards consistent with scientific advice, but done so much sooner, the United States could already be moving toward cleaner air that could decrease the risk for a myriad of health effects, including potential susceptibility to Covid-19. Similarly, while the Obama Administration's OSHA had been working on a pathogen protection standard to protect health care workers in response to pandemics, the Trump Administration never completed the work.³¹² By prioritizing deregulatory actions (like delaying standards to protect workers from exposure to beryllium) over new regulatory possibilities (like a pathogen protection standard for healthcare workers), agencies like OSHA have exacerbated the risks that Americans now face.

"If that rule had gone into effect, then every hospital, every nursing home would essentially have to have a plan where they made sure they had enough respirators and they were prepared for this sort of pandemic."

David Michaels, former Assistant Secretary for OSHA³¹³

From environmental deregulation to weakening nutrition standards, and from making living and working conditions more dangerous to decreasing access to healthcare, the Trump Administration's regulatory decisions have not only directly and significantly decreased social welfare but have also exacerbated many of the major risk factors for contracting, suffering severe cases of, and dying from Covid-19. Many of these regulatory decisions fall particularly hard on minority and low-income populations and so have especially increased the risks faced by these communities during the Covid-19 pandemic. The outbreak of deregulatory actions over the last three years has in far too many ways weakened our defenses and so made the Covid-19 pandemic even more dangerous for Americans.

Endnotes

- ¹ E.g., Chuck Todd et al., *Here Are the Government's Biggest Failures in the Coronavirus Response*, NBC (Apr. 3, 2020), <https://perma.cc/9TPT-URQK>; Michael D. Shear et al., *The Lost Month: How a Failure to Test Blinded the U.S. to Covid-19*, N.Y. TIMES (Mar. 28, 2020), <https://perma.cc/4PDA-AZHB>; Alexis C. Madrigal & Robinson Meyer, *How the Coronavirus Became an American Catastrophe*, THE ATLANTIC (Mar. 21, 2020), <https://perma.cc/KS84-SMPL>; Ryan Zamarripa, *5 Ways the Trump Administration's Policy Failures Compounded the Coronavirus-Induced Economic Crisis*, CTR. FOR AM. PROGRESS (June 3, 2020), <https://perma.cc/L29U-KHN5>; THOMAS O. MCGARITY ET AL., CTR. FOR PROGRESSIVE REFORM, PROTECTING WORKERS IN A PANDEMIC: WHAT THE FEDERAL GOVERNMENT SHOULD BE DOING (June 2020), <https://perma.cc/D6GH-PUUE> (cataloguing the failures of OSHA and other agencies to protect workers from Covid-related health and economic threats).
- ² E.g., HELIA BIDAD, NATASHA BRUNSTEIN, JAYNI HEIN & ALISA WHITE, INST. FOR POLICY INTEGRITY, UNDERSTANDING EPA'S ENFORCEMENT AND COMPLIANCE POLICY DURING THE COVID-19 PANDEMIC (May 2020), https://policyintegrity.org/files/publications/Understanding_EPA%E2%80%99s_Enforcement_and_Compliance_Policy_During_the_COVID-19_Pandemic.pdf; see also Executive Order 13,924, Regulatory Relief to Support Economic Recovery at §§ 5–6, 85 Fed. Reg. 31,353, 31,354–55 (May 22, 2020) (calling for “compliance assistance” and “fairness in administrative enforcement” in response to the Covid-19 pandemic); Executive Order 13,927, Acceleration the Nation's Economic Recovery from the COVID-19 Emergency by Expediting Infrastructure Investments and Other Activities at § 6, 85 Fed. Reg. 35,165, 35,167–68 (June 9, 2020) (recommending exempting federal actions from review under the National Environmental Policy Act); but see Kelsey Brugger, *EPA to End Contentious Enforcement Policy*, GREENWIRE (June 30, 2020).
- ³ E.g., *Tracker: Weakened Environmental Laws and Policies in Response to COVID-19*, INST. FOR POLICY INTEGRITY, <https://policyintegrity.org/covid-19-concession-tracker> (last visited July 2, 2020); Philip A. Wallach & Shoshana Weissmann, *Taking Stock of COVID-19 Deregulation*, BROOKINGS CTR. ON REG. AND MKTS. (June 17, 2020), <https://perma.cc/RA9A-VD9A>; see also Executive Order 13,924 § 4, *supra* note 2, at 31,354 (calling for “rescission and waiver of regulatory standards” in response to the Covid-19 pandemic).
- ⁴ E.g., Claudia L. Persico & Kathryn R. Johnson, *Deregulation in a Time of Pandemic: Does Pollution Increase Coronavirus Cases or Deaths?* (IZA Inst. Of Labor Econ., Discussion Paper No. 13231, May 2020), <https://perma.cc/T2ND-VL5D> (suggesting that following EPA's March 2020 freeze of civil enforcement due to the coronavirus pandemic, U.S. counties with more Toxic Release Inventory sites saw an increase in pollution, and that an increase in pollution is associated with increased cases and deaths from Covid-19).
- ⁵ See *infra* Section I.A.
- ⁶ See *infra* Section I.B.
- ⁷ See *infra* Section III.A.
- ⁸ See *infra* Section III.B; see also *The Rachel Maddow Show* (MSNBC television broadcast Apr. 10, 2020) (interview with Andy Slavitt, former Admin. of Ctrs. for Medicare & Medicaid Servs.), transcript available at <https://perma.cc/2NLT-BKJ4> (“The time to have dealt with this, of course, is a few years ago, not in the middle of a crisis. And in 2016, in fact, President Obama created regulations that we put through that were wholesale meant to address complete nursing home infection control, nursing home safety, overuse of antipsychotics, all these things. But sadly in 2017, the Trump administration got rid of those regulations and just said that they were not going to enforce them. That's turned out to be, I think, the root of a lot of the challenge here.”).
- ⁹ E.g., Jeremy A.W. Gold et al., *Characteristics and Clinical Outcomes of Adult Patients Hospitalized with COVID-19—Georgia, March 2020*, 68 MORBIDITY AND MORTALITY WKLY. REP. (CDC) 545, 545 (May 8, 2020), <https://perma.cc/AC7H-DKJD> (“The proportion of hospitalized patients who were black was higher than expected.”); *id.* at 548 (noting the potential role of social and economic factors, including occupational exposures, in the disproportionate SARS-CoV-2 acquisition risk in Black populations); Erin K. Stokes et al., *Coronavirus Disease 2019 Case Surveillance—United States, January 22–May 30, 2020*, 69 MORBIDITY AND MORTALITY WKLY. REP. (CDC) 759, 763 (June 19, 2020) (finding disproportionate effects for Hispanic, Black, and American Indian and Alaska Native populations); The COVID Tracking Project, *The COVID Racial Data Tracker*, THE ATLANTIC, <https://covidtracking.com/race> (last visited July 1, 2020) (finding, for example, that “Black people are dying at a rate nearly 2 times higher than their population share”); Matthew A. Raifman & Julia R. Raifman, *Disparities in the Population at Risk of Severe Illness from COVID-19 by Race/Ethnicity and Income*, 59 AM. J. PREVENTIVE MED. 137 (July 2020); Chris Wilson, *These Graphs Show How COVID-19 Is Ravaging New York City's*

Low-Income Neighborhoods, TIME, Apr. 15, 2020; Esteban L. Hernandez, *Breaking Down Coronavirus Infections in Denver by Neighborhood*, DENVERITE (Apr. 9, 2020), <https://perma.cc/7CM4-RNB6> (showing that “neighborhoods with low- to moderate-income levels . . . have among the highest rates of infection in the city”); Marie E. Killerby et al., *Characteristics Associated with Hospitalization Among Patients with COVID-19—Metropolitan Atlanta, Georgia, March–April 2020*, 69 MORBIDITY AND MORTALITY WKLY. REP. (CDC) 790, 791–92 (June 26, 2020), <https://perma.cc/QQR8-YSN3> (“Racial and ethnic minority groups are at higher risk for severe complications from COVID-19 because of the increased prevalence of diabetes, cardiovascular disease, and other underlying conditions among racial and ethnic minority groups. Social determinants of health might also contribute to the disproportionate incidence of COVID-19 in racial and ethnic minority groups, including factors related to housing, economic stability, and work circumstances. In the United States, black workers are more likely than other workers to be frontline industry or essential workers, which increases their likelihood of infection with SARS-CoV-2 while performing their jobs. This and other social factors could contribute to the disproportionate diagnoses of COVID-19 among black persons in metropolitan Atlanta. . . . The independent association between black race and hospitalization in this investigation remained, even when the analysis controlled for other characteristics (including diagnosed underlying conditions), suggesting underlying conditions alone might not account for the higher rate of hospitalization among black persons. This might indicate that black persons are more likely to be hospitalized because of more severe illness, or it might indicate that black persons are less likely to be identified in the outpatient setting, potentially reflecting differences in health care access or utilization or other factors not identified through medical record review.”).

¹⁰ COVID-19 in Racial and Ethnic Minority Groups, CTRS. FOR DISEASE CONTROL AND PREVENTION, <https://perma.cc/HXH4-CUMY> (updated June 25, 2020); see also John Larsen et al., *Note: A Just Green Recovery*, RHODIUM GRP. (June 29, 2020), <https://perma.cc/PA5S-FPUB> (finding hospital admissions were 4 times higher for Latinos than white Americans, 4.4 times higher for Black people, and 5.5 times higher for American Indians/Alaska Natives).

¹¹ Damian Carrington, *Is Air Pollution Making the Coronavirus Pandemic Even More Deadly?*, THE GUARDIAN (May 4, 2020), <https://perma.cc/3FSC-MJ5R> (quoting Dr. Maria Neira, director of public health at the World Health Organization, as saying “We don’t have the evidence linking directly to mortality yet, but we know if you are exposed to air pollution you are increasing your chances of being more severely affected.”).

¹² Apoorva Mandavilli, *239 Experts with One Big Claim: The Coronavirus Is Airborne*, N.Y. TIMES (July 6, 2020), <https://perma.cc/S2NN-LVPP> (noting the reluctance of the World

Health Organization to accept evidence of airborne transmission); Lidia Morawska & Donald K. Milton, *It Is Time to Address Airborne Transmission of COVID-19*, CLINICAL INFECTIOUS DISEASES (July 6, 2020), <https://perma.cc/BL67-R7H8> (commentary endorsed by 239 scientists) (noting that the virus maintains infectivity in small droplets).

¹³ See Leonardo Setti et al., *SARS-Cov-2 RNA Found on Particulate Matter of Bergamo in Northern Italy: First Evidence*, 188 ENVTL. RES. 108,754 (May 30, 2020), <https://perma.cc/2XY8-EFNW>; see also Mario Coccia, *Two Mechanisms for Accelerated Diffusion of COVID-19 Outbreaks in Regions with High Intensity of Population and Polluting Industrialization* (CocciaLab, Working Paper 2020 –No. 48B/2020, Apr. 11, 2020), <https://perma.cc/3ZVY-LB76> (explaining results in part as due to “air pollution-to-human transmission” involving particulate matter); Antonio Frontera et al., *Regional Air Pollution Persistence Links to COVID-19 Infection Zoning*, J. INFECTION (published online Apr. 10, 2020), <https://perma.cc/Y7UJ-ZBKA> (a letter to the editor hypothesizing, based on existing evidence, that pollution-rich air may promote a longer permanence of the viral particles); Luigi Martelletti & Paolo Martelletti, *Air Pollution and the Novel Covid-19 Disease: A Putative Disease Risk Factor*, 2 SN COMPREHENSIVE CLINICAL MED. 383 (Apr. 15, 2020), <https://perma.cc/2FEU-UXD8> (expressing the same hypothesis).

¹⁴ Leonardo Setti, *Is There a Plausible Role for Particulate Matter in the Spreading of COVID-19 in Northern Italy?*, BMJ (Apr. 8, 2020) (a “rapid response” to an editorial), <https://perma.cc/3HFT-ZN2P>; see also Leonardo Setti, *The Potential Role of Particulate Matter in the Spreading of COVID-19 in Northern Italy: First Evidence-Based Research Hypothesis* (medRxiv preprint no. 2020.04.11.20061713, Apr. 17, 2020), <https://perma.cc/7FUL-VJTT>.

¹⁵ See Edoardo Conticini et al., *Can Atmospheric Pollution Be Considered a Co-factor in Extremely High Level of SARS-CoV-2 Lethality in Northern Italy?*, 261 ENVTL. POLLUTION 114,465 at *2 (Apr. 4, 2020), <https://perma.cc/TNU3-HJ4U> (suggesting that the contributions of particulate matter, ozone, and sulfur dioxide to inflammation “may partly explain a higher prevalence and lethality of a novel, very contagious, viral agent such as SARS-CoV-2, among a population living in areas with a higher level of air pollution”).

¹⁶ See Carrington, *supra* note 11 (noting criticisms of several of the studies); Dino Grandoni, *The Energy 202: A Harvard Study Tying Coronavirus Death Rates to Pollution Is Causing an Uproar in Washington*, WASH. POST (May 7, 2020).

¹⁷ Bo Pieter Johannes Andr  e, *Incidence of COVID-19 and Connections with Air Pollution Exposure: Evidence from the Netherlands* (World Bank Group, Policy Research Working Paper No. 9221, Apr. 2020), <https://perma.cc/3BZ3-AX77> (finding that a 20% increase in particulate matter concentra-

tion was associated with nearly a 100% increase in Covid-19 cases); Ye Yao et al., *Ambient Nitrogen Dioxide Pollution and Spread Ability of COVID-19 in Chinese Cities* (medRxiv preprint no. 2020.03.31.20048595, Apr. 10, 2020), <https://perma.cc/9KD9-HJJM> (finding an association between nitrogen dioxide and the transmission of Covid-19, though unable to distinguish if the effect is related to inflammation, to a pollution-specific effect on immune defenses, or perhaps simply to a third factor, since increased vehicle traffic would both increase pollution and increase population movement); Yaron Ogen, *Assessing Nitrogen Dioxide (NO₂) Levels as a Contributing Factor to Coronavirus (COVID-19) Fatality*, 726 SCI. TOTAL ENV'T 138,605 at *1 (Apr. 11, 2020), <https://perma.cc/E2MN-F88X> (concluding that long-term exposure to nitrogen dioxide “may be one of the most important contributors to fatality caused by the COVID-19 virus in [Italy, Spain, France, and Germany] and maybe across the whole world”); Huaiyu Tian et al., *Risk of COVID-19 Is Associated with Long-Term Exposure to Air Pollution* (medRxiv preprint no. 2020.04.21.20073700, 2020), <https://perma.cc/BAJ2-L9FC> (finding nitrogen dioxide and particulate matter are associated with increased Covid-19 cases and severe cases); Xiao Wu et al., *Exposure to Air Pollution and COVID-19 Mortality in the United States* (medRxiv preprint no. 2020.04.05.20054502, 2020), <https://perma.cc/4V4S-4A2G> (finding that an increase in PM_{2.5} is associated with an increase in the Covid-19 death rate); Yongjian Zhu et al., *Association Between Short-Term Exposure to Air Pollution and COVID-19 Infection: Evidence from China*, 727 SCI. TOTAL ENV'T 138704 (2020), <https://perma.cc/V4HA-AMX2> (finding significantly positive associations with particulate matter, carbon monoxide, nitrogen dioxide, and ozone and Covid-19 cases, but a negative association for sulfur dioxide); Marco Travaglio et al., *Links Between Air Pollution and COVID-19 in England* (medRxiv preprint no. 2020.04.16.20067405, 2020), <https://perma.cc/7CXU-VAFS> (finding that nitrogen oxide and sulfur dioxide pollution was a significant predictor of Covid-19 cases, and ozone, nitrogen oxide and sulfur dioxide levels are significantly associated with increased numbers of Covid-19-related deaths across England); Manu Sasidharan et al., *A Vulnerability-Based Approach to Human-Mobility Reduction for countering COVID-19 Transmission in London While Considering Local Air Quality* (Apr. 17, 2020), <https://perma.cc/DGN7-97BE> (finding that short-term exposure to nitrogen dioxide and particulate matter are significantly correlated with increased risk of contracting and dying from Covid-19); Donghai Liang et al., *Urban Air Pollution May Enhance COVID-19 Case-Fatality and Mortality Rates in the United States* (medRxiv preprint no. 2020.05.04.20090746, 2020) <https://perma.cc/ZH2T-3YZF> (finding that long-term exposure to nitrogen dioxide may enhance susceptibility to severe Covid-19 outcomes, independent of long-term exposure to particulate matter or ozone); see also Carrington, *supra* note 11 (summarizing some of the preliminary studies). Citation of these studies

does not necessarily endorse them as accurate. Nevertheless, the sheer number of studies suggesting a direct or indirect link between pollution and Covid-19 is notable.

- ¹⁸ Persico & Johnson, *supra* note 4, at 13.
- ¹⁹ Christopher R. Knittel & Bora Ozaltun, *What Does and Does Not Correlate with COVID-19 Death Rates* (Nat'l Bureau of Econ. Research, Working Paper No. 27391, June 2020), <https://perma.cc/463J-CU2W> (finding instead a strong correlation between death rates and use of public transportation relative to telecommuting).
- ²⁰ Stokes et al., *supra* note 9, at 759.
- ²¹ Though the American Academy of Allergy, Asthma & Immunology reported in June 2020 that there was mixed evidence on whether asthma was a risk factor, see *Covid-19 and Asthma: What Patients Need to Know*, AM. ACAD. OF ALLERGY ASTHMA & IMMUNOLOGY, <https://perma.cc/KSM9-LU82> (last visited July 1, 2020), the CDC continues to list moderate-to-severe asthma as a likely risk factor, see *Coronavirus Disease 2019 (COVID-19): Groups at Higher Risk for Severe Illness*, CDC, <https://perma.cc/WGA8-76RF> (updated June 25, 2020), and recent evidence continues to associate non-allergic asthma with more severe Covid-19 outcomes, see Zhaozhong Zhu et al., *Association of Asthma and Its Genetic Predisposition with the Risk of Severe COVID-19*, J. ALLERGY & CLINICAL IMMUNOLOGY (Letter to the Editor) (June 6, 2020), <https://perma.cc/J8M9-7PMX>.
- ²² See, e.g., *Coronavirus Disease 2019 (COVID-19): Groups at Higher Risk for Severe Illness*, CDC, *supra* note 21 (other risk categories include hemoglobin disorders and immunocompromised conditions like HIV); NIH COVID-19 Treatment Guidelines, *Overview and Spectrum of COVID-19*, NAT'L INSTS. HEALTH, <https://perma.cc/9SYY-Y966> (updated June 11, 2020); WHO, *ASSESSMENT OF RISK FACTORS FOR CORONAVIRUS DISEASE 2019 (COVID-19) IN HEALTH WORKERS: PROTOCOL FOR A CASE-CONTROL STUDY 27* (May 2020), <https://perma.cc/9X8X-JWJP> (listing relevant pre-existing conditions) (also listing pregnancy); Andrew Clark et al., *Global, Regional, and National Estimates of the Population at Increased Risk of Severe COVID-19 Due to Underlying Health Conditions in 2020: A Modelling Study*, LANCET GLOB. HEALTH, June 15, 2020, [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(20\)30264-3/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(20)30264-3/fulltext) (listing 11 categories of underlying health conditions, though acknowledging the omission of obesity); Safiya Richardson et al., *Presenting Characteristics, Comorbidities, and Outcomes Among 5700 Patients Hospitalized with COVID-19 in the New York City Area*, 323 JAMA 2052 (2020); Wei-jie Guan et al., *Clinical Characteristics of Coronavirus Disease 2019 in China*, 382 N. ENG. J. MED. 1708 (2020); Dawei Wang et al., *Clinical Characteristics of 138 Hospitalized Patients with 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China*, 323 JAMA 1061 (2020); Fei Zhou et al., *Clinical*

Course and Risk Factors for Mortality of Adult Inpatients with COVID-19 in Wuhan, China: A Retrospective Cohort Study, 395 LANCET 1054 (2020); Jing Yang et al., *Prevalence of Comorbidities and Its Effects in Patients Infected with SARS-CoV-2: A Systematic Review and Meta-Analysis*, 94 INT'L J. INFECTIOUS DISEASES. 91 (2020) (finding that underlying hypertension, diabetes, cardiovascular disease, and respiratory system disease were more common in severe Covid-19 cases); Stokes et al., *supra* note 9; *see also* Lena H. Sun, *Patients with Underlying Conditions Were 12 Times as Likely to Die of Covid-19 as Otherwise Healthy People*, CDC FINDS, WASH. POST., June 15, 2020. There has been some mixed evidence on asthma as a Covid-19 risk factor, *see* Danny Hakim, *Asthma Is Absent Among Top Covid-19 Risk Factors, Early Data Shows*, N.Y. TIMES, Apr. 16, 2020; Xiaochen Li et al., *Risk Factors for Severity and Mortality in Adult COVID-19 Inpatients in Wuhan*, J. ALLERGY AND CLINICAL IMMUNOLOGY (2020), [https://www.jacionline.org/article/S0091-6749\(20\)30495-4/pdf](https://www.jacionline.org/article/S0091-6749(20)30495-4/pdf); *but see* *Coronavirus 2019 (COVID-19): People with Moderate to Severe Asthma*, CDC, <https://perma.cc/3YLY-HE3A> (updated Apr. 2, 2020); *see also supra* note 21.

²³ See CTR. FOR PUB. HEALTH AND ENVTL. ASSESSMENT, EPA, INTEGRATED SCIENCE ASSESSMENT FOR PARTICULATE MATTER ES-8 (2019), <https://perma.cc/2HVV-ZNAV> [hereinafter PM ISA] (defining “short-term exposure” as “hours up to approximately 1 month”); NAT’L CTR. FOR ENVTL. ASSESSMENT, EPA, INTEGRATED SCIENCE ASSESSMENT FOR OXIDES OF NITROGEN—HEALTH CRITERIA lxxxii (2016), <https://perma.cc/G752-GHFJ> [hereinafter NOx ISA] (defining “short-term” as “minutes up to 1 month”); NAT’L CTR. FOR ENVTL. ASSESSMENT, EPA, INTEGRATED SCIENCE ASSESSMENT FOR OXIDES OF SULFUR—HEALTH CRITERIA xlvi (2017), <https://perma.cc/PA3W-TNFK> [hereinafter SOx ISA] (noting that exposure to sulfur dioxide can result in lung function decrements and respiratory symptoms in a few as 5-10 minutes).

²⁴ Jonathan Ciencewicz & Ilona Jaspers, *Air Pollution and Respiratory Viral Infection*, 19 INHALATION TOXICOLOGY 1135 (2007).

²⁵ For example, cancers may be caused or exacerbated by inflammation triggered by exposure to air pollution. *See, e.g.*, PM ISA at 10-3, 10-5 & fig. 10-2 (noting that carcinogens may induce chronic inflammation and be immunosuppressive, and that particulate matter’s inflammatory and immunosuppressive effects may be among the biological pathways for how exposure to particulate matter contributes to cancer development); Hong-Bae Kim et al., *Long-Term Exposure to Air Pollutants and Cancer Mortality: A Meta-Analysis of Cohort Studies*, 15 INT’L J. ENVTL. RES. & PUB. HEALTH 2608 at *9 (2018), <https://perma.cc/U9UR-MF5G>.

²⁶ *See, e.g.*, Karen Clay & Nicholas Z. Muller, *Recent Increases in Air Pollution: Evidence and Implications for Mortality* 3–4, 6–7 (Nat’l Bureau of Econ. Research, Working Paper No.

26381, 2019), <https://perma.cc/97DT-HJMK> (documenting an increase in particulate matter pollution since 2016, due in part to changes in regulatory enforcement).

²⁷ PM ISA at ES-13 to ES-14; *see also* EPA, REGULATORY IMPACT ANALYSIS FOR THE CLEAN POWER PLAN FINAL RULE 4-14 (2015), <https://perma.cc/S9ZW-JDSD> [hereinafter CPP RIA] (reporting links to cardiovascular hospital admissions, strokes, and cerebrovascular disease).

²⁸ PM ISA at ES-14.

²⁹ *Id.* at ES-12; *see also* CPP RIA at 4-14 (reporting links to respiratory hospital admissions, asthma ER visits, acute bronchitis, chronic bronchitis, and lower and upper respiratory symptoms).

³⁰ PM ISA at ES-12; *see id.* (also finding some evidence of decreased lung function and pulmonary inflammation).

³¹ *Id.* at ES-13.

³² *Id.* at ES-15 to ES-16. There is also growing suggestive evidence that particulate matter exposure could cause metabolic effects, including effects on diabetes, liver function, and inflammation. *Id.* at 7-1 to 7-57.

³³ *Id.* at 7-1, 7-11, 7-28, 7-52.

³⁴ CTR. FOR PUB. HEALTH AND ENVTL. ASSESSMENT, EPA, INTEGRATED SCIENCE ASSESSMENT FOR OZONE AND RELATED PHOTOCHEMICAL OXIDANTS ES-8 (2020), <https://perma.cc/C8HM-CGMU> [hereinafter Ozone ISA].

³⁵ *Id.*

³⁶ CPP RIA at ES-12.

³⁷ OZONE ISA at ES-8 to ES-9.

³⁸ *Id.* at 5-29.

³⁹ *Id.* at 5-1.

⁴⁰ *Id.* at ES-7, ES-9. Note that in 2020, the Integrated Science Assessment changed the causal findings on ozone for both cardiovascular diseases and overall mortality, from “likely causal” to “suggestive.” *Id.* at ES-7. The American Thoracic Society, among other scientific groups, strongly opposed the change. *See* Am. Thoracic Society, *EPA Proposal to Change How It Evaluates Environmental Policy Ignores Science*, Newswise (June 5, 2020), <https://perma.cc/J59K-2DZE>.

⁴¹ *Id.* at ES-7, IS-48.

⁴² *Indoor Air Quality (IAQ): Technical Overview of Volatile Organic Compounds*, EPA, <https://perma.cc/PW3G-TJ3P> (last visited July 1, 2020).

⁴³ *Indoor Air Quality (IAQ): Volatile Organic Compounds’ Impact on Indoor Air Quality*, EPA, <https://perma.cc/XAJ6-QBMB> (last visited July 1, 2020).

⁴⁴ *Air Emissions Inventories: Air Emissions Sources*, EPA, <https://perma.cc/K35J-WRD2> (last visited July 1, 2020).

⁴⁵ NOx ISA at lxxxiii–lxxxv.

- ⁴⁶ *Id.* at lxxxv.
- ⁴⁷ *Air Emissions Inventories: Air Emissions Sources*, *supra* note 44.
- ⁴⁸ Safety and Health Topics, *Beryllium: Health Effects*, OSHA, <https://perma.cc/GKN8-JS87> (last visited July 1, 2020).
- ⁴⁹ Safety and Health Topics, *Beryllium: Overview*, OSHA, <https://perma.cc/4GHU-VWXA> (last visited July 1, 2020).
- ⁵⁰ Safety and Health Topics, *Silica, Crystalline: Overview*, OSHA, <https://perma.cc/5AGP-Z8LQ> (last visited July 1, 2020).
- ⁵¹ SO_x ISA at xlix–xlx.
- ⁵² CPP RIA at ES-13.
- ⁵³ *Air Emissions Inventories: Air Emissions Sources*, *supra* note 44.
- ⁵⁴ NAT'L CTR. FOR ENVTL. ASSESSMENT, EPA, INTEGRATED SCIENCE ASSESSMENT FOR CARBON MONOXIDE 2-5 to 2-9 (2010), <https://perma.cc/CH79-58L4> [hereinafter CO ISA].
- ⁵⁵ See, e.g., EPA, REGULATORY IMPACT ANALYSIS FOR THE FINAL MERCURY AND AIR TOXICS STANDARDS 4-4 to 4-5 (2011), <https://perma.cc/2MSZ-XE48> (noting possible effects of mercury exposure); *id.* at 4-69 to 4-79 (noting likely effects for other toxics, such as arsenic, lead, and nickel).
- ⁵⁶ See, e.g., CPP RIA at 7-20 (finding low-income populations are more vulnerable to PM exposures); PM ISA at 12-34 (finding adequate evidence that race and ethnicity modify particulate matter-related risks, in part due to disparities in exposure); Larsen et al., *supra* note 10 (“We find that both Black and Latino Americans face considerably higher environmental hazard exposure than white Americans in almost all categories.”).
- ⁵⁷ Ihab Mikati et al., *Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status*, 108 AM. J. PUB. HEALTH 480 (2018), <https://ajph.aphapublications.org/doi/abs/10.2105/AJPH.2017.304297?journalCode=ajph>.
- ⁵⁸ CLEAN AIR TASK FORCE & NAACP, FUMES ACROSS THE FENCE-LINE: THE HEALTH IMPACTS OF AIR POLLUTION FROM OIL & GAS FACILITIES ON AFRICAN AMERICAN COMMUNITIES (2017), http://www.catf.us/wp-content/uploads/2017/11/CATF_Pub_FumesAcrossTheFence-Line.pdf.
- ⁵⁹ Mercedes A. Bravo et al., *Racial Isolation and Exposure to Airborne Particulate Matter and Ozone in Understudied US Populations: Environmental Justice Applications of Downscaled Numerical Model Output*, 92–93 ENVTL. INT'L 247 (2016).
- ⁶⁰ Amy Patronella & Saharra Griffin, *Communities of Color Bear the Brunt of Trump's Anti-Environmental Agenda*, CTR. FOR AM. PROGRESS (Feb. 27, 2020), <https://www.americanprogress.org/issues/green/news/2020/02/27/480820/communities-color-bear-brunt-trumps-anti-environmental-agenda/>.
- ⁶¹ OFFICE OF MASS. ATTORNEY GEN. MAURA HEALY, COVID-19'S UNEQUAL EFFECTS IN MASSACHUSETTS: REMEDYING THE LEGACY OF ENVIRONMENTAL INJUSTICE & BUILDING CLIMATE RESILIENCE 6–7 (2020), <https://perma.cc/LF6A-4NCJ>.
- ⁶² *Id.* at 6.
- ⁶³ Larsen et al., *supra* note 10.
- ⁶⁴ *Id.* (also suggesting that at least in some locations, pre-existing environmental risk factors may have led to higher Covid-19 death rates).
- ⁶⁵ Qian Di et al., *Air Pollution and Mortality in the Medicare Population*, 376 NEW ENG. J. MED. 2513 (2017).
- ⁶⁶ *Coronavirus Disease 2019 (COVID-19): Older Adults*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://perma.cc/B6BL-SFDT> (updated June 25, 2020).
- ⁶⁷ *Pollution and Pandemics Covid-19's Disproportionate Impacts on Communities: Hearing Before the H. Subcomm. on Environment & Climate Change of the H. Comm. on Energy & Commerce*, 116th Cong. (June 9, 2020) (testimony of Mustafa Santiago Ali), <https://perma.cc/HQH5-CAGY> (emphasis added).
- ⁶⁸ Clay & Muller, *supra* note 26, at 3–4, 6–7 (“The decline in enforcement actions, however, is concerning in light of the increases in air pollution in both attainment and nonattainment counties after 2016.”).
- ⁶⁹ CPP RIA at ES-5.
- ⁷⁰ *Id.* at ES-6 to ES-7.
- ⁷¹ *Id.* at 4-29, 4-32; *id.* at 4-42 (noting inability to quantify and monetize benefits associated with reductions of mercury, carbon monoxide, SO₂, and NO₂).
- ⁷² 84 Fed. Reg. 32,520 (July 7, 2018).
- ⁷³ Amicus Br. of Inst. for Policy Integrity at 24–25, *Am. Lung Ass'n v. EPA*, No. 19-1140 (D.C. Cir. Apr. 23, 2020), https://policyintegrity.org/documents/Amicus_Brief_of_Institute_for_Policy_Integrity.pdf.
- ⁷⁴ Notice of Intention to Reconsider the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light Duty Vehicles, 82 Fed. Reg. 14,671 (Mar. 22, 2017).
- ⁷⁵ See Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles: Notice of Withdrawal, 83 Fed. Reg. 16,077, 16,085 (Apr. 13, 2018) (acknowledging that the Obama-era standards had health co-benefits).
- ⁷⁶ *Id.* at 16,077.
- ⁷⁷ The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174 (Apr. 30, 2020).
- ⁷⁸ *Trump Administration Moves Ahead with Harmful Clean Cars Rollback*, Env'tl. Def. Fund, <https://perma.cc/3YSX-FE7J>.

- ⁷⁹ Decl. Joshua M. Cunningham, Chief of the Cal. Air Res. Bd.'s Adv. Clean Cars Branch, at APP59, Opp'n State Pet'rs to Resp'ts and Movant-Intervenors' Mot. to Dismiss, Cal. v. EPA, No. 18-1114 (D.C. Cir. Aug. 29, 2018), <https://perma.cc/7XRC-6D86>.
- ⁸⁰ See Decl. O. Kevin Vincent, VP at Workhorse Group Inc., at *3-5, Cal. v. EPA, No. 18-1114 (D.C. Cir. Aug. 29, 2018), <https://perma.cc/ET8C-7XF5>.
- ⁸¹ Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources, 81 Fed. Reg. 35,824, 35,827 (June 3, 2016).
- ⁸² EPA, Economic Impact Analysis: Petroleum Refineries—Final Amendments to the National Emissions Standards for Hazardous Air Pollutants and New Source Performance Standards 1-1, 3-20 to 3-21 (2015), <https://www.regulations.gov/document?D=EPA-HQ-OAR-2010-0682-0799> (for year 2018, calculating 1,323 tons per year of HAP reductions and 16,660 tons per year of VOC reductions from changes in storage, coking, and fugitive emissions, plus 3,900 tons per year of HAP reductions and 33,000 tons per year of VOC reductions from changes in flaring at refineries).
- ⁸³ Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources: Grant of Reconsideration and Partial Stay, 82 Fed. Reg. 25,730 (June 5, 2017). EPA's decision to delay the rule three months was challenged successfully by environmental groups. *Clean Air Council v. Pruitt*, 862 F.3d 1 (D.C. Cir. 2017). EPA also proposed a two-year delay on the oil and natural gas sector standards. 82 Fed. Reg. 27,645 (June 16, 2017). Separately, the Trump Administration has also delayed compliance with the standards for petroleum refineries. 83 Fed. Reg. 60,698 (Nov. 26, 2018) (delaying the Obama rule); see also 85 Fed. Reg. 6064 (Feb. 4, 2020) (making technical adjustments to the 2015 Obama rule).
- ⁸⁴ See *Regulatory Rollback Tracker: EPA VOC and Methane Standards for Oil and Gas Facilities*, HARV. L. SCH. ENVTL. & ENERGY LAW PROGRAM, <https://perma.cc/ZVK6-E8J8> (last visited July 2, 2020) (recounting EPA's requests in 2017 that federal courts not require enforcement of the rule, and noting that EPA failed to respond to FOIA requests for the first round of compliance reports from regulated sites in October 2017).
- ⁸⁵ 83 Fed. Reg. 52,056 (Oct. 15, 2018) (initial proposal to revise the 2016 rule); 84 Fed. Reg. 50,244 (Sept. 24, 2019) (proposal to roll back the 2016 rule).
- ⁸⁶ 82 Fed. Reg. 12,817 (Mar. 7, 2017) (withdrawing the information collection request for existing sources); 83 Fed. Reg. 10,478 (Mar. 9, 2018) (withdrawing the control techniques guidelines for existing sources); Complaint, *N.Y. v. Pruitt*, No. 1:18-cv-00773-RBW (D.D.C. May 30, 2018) (suing for failure to issue emissions limits for existing sources in the oil and gas sector).
- ⁸⁷ 83 Fed. Reg. 10,628 (Mar. 12, 2018).
- ⁸⁸ Issuance of Guidance Memorandum, "Reclassification of Major Sources as Area Sources under Section 112 of the Clean Air Act," 83 Fed. Reg. 5543 (Feb. 8, 2018); see also 84 Fed. Reg. 36,304 (July 26, 2019) (proposing to codify that revised guidance). In *Cal. Communities Against Toxics v. EPA*, No. 18-1085, slip op. (D.C. Cir. Aug. 20, 2019), the D.C. Circuit ruled that the 2018 memorandum was not a final agency action yet ripe for judicial review.
- ⁸⁹ EPA, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED RECLASSIFICATION OF MAJOR SOURCES AS AREA SOURCES UNDER SECTION 112 OF THE CLEAN AIR ACT (2019), <https://perma.cc/G4T9-H9KB>.
- ⁹⁰ *EPA Decision Increases Hazardous Air Pollution Risk*, Union of Concerned Scientists, <https://www.ucsusa.org/resources/epa-decision-increases-air-pollution-risk> (updated June 13, 2019).
- ⁹¹ *Id.*
- ⁹² 80 Fed. Reg. 67,838 (Nov. 3, 2015).
- ⁹³ OFFICE OF WATER, EPA, BENEFIT AND COST ANALYSIS FOR THE EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS FOR THE STEAM ELECTRIC POWER GENERATING POINT SOURCE CATEGORY 7-4 (2015), <https://perma.cc/5FFN-B3DH> (table 7-4, showing net changes in air pollutant emissions under Option D, the chosen option).
- ⁹⁴ *Id.* at 7-1.
- ⁹⁵ 82 Fed. Reg. 43,494 (Sept. 18, 2017).
- ⁹⁶ *Clean Water Action v. EPA*, 936 F.3d 308 (5th Cir. 2019).
- ⁹⁷ 84 Fed. Reg. 64,620 (Nov. 22, 2019).
- ⁹⁸ 81 Fed. Reg. 74,504 (2016).
- ⁹⁹ EPA, REGULATORY IMPACT ANALYSIS FOR THE PROPOSED CROSS-STATE AIR POLLUTION RULE (CSAPR) UPDATE FOR THE 2008 NATIONAL AMBIENT AIR QUALITY STANDARDS FOR GROUND-LEVEL OZONE ES-8, ES-12 (2016), <https://perma.cc/J2R8-E253>.
- ¹⁰⁰ 81 Fed. Reg. 74,504, 74,520–22 (Oct. 26, 2016).
- ¹⁰¹ See *New York v. Pruitt*, No. 18-406, 2018 WL 2976018, at *1, *4 (S.D.N.Y. June 12, 2018).
- ¹⁰² 83 Fed. Reg. 65,878 (Dec. 21, 2018).
- ¹⁰³ *New York v. EPA*, 781 F. App'x 4 (D.C. Cir. 2019).
- ¹⁰⁴ *E.g.*, 83 Fed. Reg. 50,444 (Oct. 5, 2018).
- ¹⁰⁵ *Maryland v. EPA*, 958 F.3d 1185 (D.C. Cir. 2020).
- ¹⁰⁶ See *Regulatory Rollback Tracker: New Source Review*, HARV. L. SCH. ENVTL. & ENERGY LAW PROGRAM, <https://eelp.law.harvard.edu/2018/12/new-source-review/> (last visited July 2, 2020) (cataloguing at least 9 significant changes either finalized or underway to the New Source Review program); *Regulatory Rollback Tracker: Clean Power Plan/Carbon Pollution Emission Guidelines*, HARV. L. SCH. ENVTL.

& ENERGY LAW PROGRAM, <https://eelp.law.harvard.edu/2017/09/clean-power-plan-carbon-pollution-emission-guidelines/> (last visited July 2, 2020) (explaining how the Affordable Clean Energy Rule also proposed significant changes to the New Source Review program). Some of these changes took effect as early as 2017. *E.g.*, Memorandum from E. Scott Pruitt, EPA Adm'r, to Reg'l Adm'rs, EPA, *New Source Review Preconstruction Permitting Requirements: Enforceability and Use of the Actual-to-Projected-Actual Applicability Test in Determining Major Modification Applicability* 7-8 (Dec. 7, 2017), <https://perma.cc/T483-5KKX> ("EPA intends to implement and exercise its authority under the NSR provision to clarify that when a source owner or operator preforms a pre-project NSR applicability analysis . . . that owner or operator has met the pro-project source obligations The EPA does not intend to substitute its judgment for that of the owner or operator by 'second guessing' the owner or operator's emissions projections."); *see also* Janet McCabe, Joseph Goffman & William Niebling, *What's at Stake in the Trump EPA's New Approach to New Source Review?*, EM Magazine (Aug. 2019), <https://perma.cc/RC6N-92GM>.

¹⁰⁷ 82 Fed. Reg. 29,246 (June 28, 2017); 83 Fed. Reg. 62998 (Dec. 6, 2018); *see also* *Ozone National Ambient Air Quality Standards*, HARV. L. SCH. ENVTL. & ENERGY LAW PROGRAM, <https://eelp.law.harvard.edu/2017/09/ozone-national-ambient-air-quality-standards/> (last visited July 1, 2020) (summarizing history of litigation and delays).

¹⁰⁸ 82 Fed. Reg. 24,878 (May 31, 2017); 84 Fed. Reg. 44,547 (Aug. 26, 2019); *see also* *Municipal Solid Waste Landfill New Source Performance Standards and Emissions Guidelines*, HARV. L. SCH. ENVTL. & ENERGY LAW PROGRAM, <https://eelp.law.harvard.edu/2017/09/municipal-solid-waste-landfill-new-source-performance-standards-and-emissions-guidelines/> (last visited July 2, 2020) (summarizing history of litigation and delays).

¹⁰⁹ 84 Fed. Reg. 58,601 (Nov. 1, 2019).

¹¹⁰ Memorandum from Andrew Wheeler, Acting EPA Adm'r, to EPA Assistant Adm'r for Air and Radiation, EPA Gen. Counsel, EPA Reg'l Adm'r's, *Regional Haze Reform Roadmap* (Sept. 11, 2018), https://www.epa.gov/sites/production/files/201809/documents/regional_haze_reform_roadmap_memo_09-11-2018.pdf.

¹¹¹ *E.g.*, 85 Fed. Reg. 7232 (Feb. 7, 2020); 85 Fed. Reg. 23,700 (Apr. 23, 2020).

¹¹² 84 Fed. Reg. 27,533 (June 13, 2019).

¹¹³ Energy Conservation Program: Energy Conservation Standards for Uninterruptible Power Supplies, 85 Fed. Reg. 1447, 1452 (Jan. 10, 2020) (high annualized benefit estimate calculated at a 3% discount rate); *see id.* at 1450 (calculating lifetime savings of 63,000 tons of NO_x, 39,000 tons of SO₂, and 0.13 tons of mercury).

¹¹⁴ Letter from NRDC et al., to Sec'y James Richard Perry, Dep't of Energy, *60-Day Notice of Intent to Sue for Violations of the Energy Policy and Conservation Act* 2 (Apr. 3, 2017), <https://perma.cc/T3GK-Z646>.

¹¹⁵ *Air Emissions Inventories: Air Emissions Sources*, *supra* note 44.

¹¹⁶ NRDC v. Perry, 940 F.3d 1072 (9th Cir. 2019); *see also* Letter from NRDC et al., *supra* note 114.

¹¹⁷ 82 Fed. Reg. 31,808 (July 10, 2017). The compliance deadline was set for June 10, 2020, but could have been set much earlier had the rule's final publication not been delayed.

¹¹⁸ 85 Fed. Reg. 1378 (Jan. 10, 2020); 85 Fed. Reg. 1447 (Jan. 10, 2020); 85 Fed. Reg. 1504 (Jan. 10, 2020); 85 Fed. Reg. 1592 (Jan. 10, 2020). The compliance deadlines were set for 2022 for uninterruptible power supplies, 2023 for commercial packaged boilers, and 2025 for air compressors and portable air conditioners. Had the rules' final publication not been delayed by over three years, those compliance deadlines could have been set over three years earlier.

¹¹⁹ *See* NRDC v. Dep't of Energy, 362 F. Supp. 3d 126 (S.D.N.Y. 2019).

¹²⁰ 84 Fed. Reg. 46,661 (Oct. 7, 2019) (withdrawing prior rules); 84 Fed. Reg. 71,626 (Dec. 27, 2019) (determining that the standards for general service lamps and incandescent lamps did not need to be amended).

¹²¹ *See Rollback of Light Bulb Standards Would Cost Consumers Billions—\$100 Per Household Each Year*, APPLIANCE STANDARDS AWARENESS PROJECT (Feb. 6, 2019), <https://perma.cc/RPW8-V7C5>.

¹²² 81 Fed. Reg. 83,008 (Nov. 18, 2016).

¹²³ BLM, ENVIRONMENTAL ASSESSMENT: WASTE PREVENTION, PRODUCTION SUBJECT TO ROYALTIES, AND RESOURCE CONSERVATION 32–33, 67 (2016).

¹²⁴ 82 Fed. Reg. 27,430 (June 15, 2017); 82 Fed. Reg. 58,050 (Dec. 8, 2017).

¹²⁵ 83 Fed. Reg. 49,184 (Nov. 27, 2018).

¹²⁶ *See, e.g.*, *Sierra Club v. Zinke*, 4:18-cv-05984 (N.D.Cal.) (litigation over the Trump administration's repeal of the rule).

¹²⁷ OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT, FINAL ENVIRONMENTAL IMPACT STATEMENT: SAN JUAN MINE DEEP LEASE EXTENSION MINING PLAN MODIFICATION at 68, tbl. 4.1-1 and 4.1-2 (Mar. 15, 2019), <https://perma.cc/G8W3-7N2R>; *see also id.* at 74 (explaining that, compared to the adopted action, under the no action alternative "larger emission sources would taper off sharply between 2018 and 2020").

¹²⁸ SEC'Y RYAN ZINKE, DEP'T OF INTERIOR, ORDER NO. 3350: AMERICA-FIRST OFFSHORE ENERGY STRATEGY § 4(a)(5) (May 1, 2017), <https://perma.cc/E4VM-6JVZ> (ceasing all work on the proposed rule 81 Fed. Reg. 19,717).

- ¹²⁹ BUREAU OF OCEAN ENERGY MGMT., DEP'T OF INTERIOR, AIR QUALITY CONTROL, REPORTING, AND COMPLIANCE: INITIAL REGULATORY IMPACT ANALYSIS 5 (2016), <https://www.regulations.gov/document?D=BOEM-2013-0081-0002> (estimating \$43.1 million in NO_x reduction benefits in years 2019 and 2020); *id.* (also anticipating unquantified reductions in VOCs, SO_x, CO, and PM emissions).
- ¹³⁰ *Id.* at 25.
- ¹³¹ 85 Fed. Reg. 34,912 (June 5, 2020).
- ¹³² 82 Fed. Reg. 32,139 (July 12, 2017) (delay); 84 Fed. Reg. 36,007 (July 26, 2019) (repeal).
- ¹³³ See Decl. of Dr. Sylwia Bialek at ADD10, Amicus Br. of the Inst. for Policy Integrity, No. 17-2780 (2d. Cir., Mar. 12, 2018), https://policyintegrity.org/documents/NRDC_v_NHTSA_-_Policy_Integrity_Amicus_Brief.pdf (figure 2, showing the billions of gallons of cumulative increased fuel consumed over time under various suspension scenarios); see also Inst. for Policy Integrity, Comments on the Notice of Proposed Rulemaking: Docket ID No. NHTSA-2018-0017, at 6-9 (May, 2, 2018), <https://www.regulations.gov/document?D=NHTSA-2018-0017-0017> (describing the impact of the repeal); Amicus Br. of Inst. for Policy Integrity, *State of New York v. NHTSA*, No. 19-2395 (2d Cir. Dec. 16, 2019), https://policyintegrity.org/documents/Brief_of_the_Institute_for_Policy_Integrity.pdf (same).
- ¹³⁴ 82 Fed. Reg. 5970 (Jan. 18, 2017).
- ¹³⁵ *Id.* at 6029 (showing the minimum emissions reductions needed such that the rule's benefits would outweigh the costs; the actual emissions reductions might have been much greater).
- ¹³⁶ 83 Fed. Reg. 24,936 (May 21, 2018).
- ¹³⁷ Metal and non-metal mines include most mines except for coal.
- ¹³⁸ Examinations of Working Places in Metal and Nonmetal Mines, 82 Fed. Reg. 7680 (Jan. 23, 2017) (setting effective date of May 23, 2017). The rule was published in the *Federal Register* days after the end of the Obama Administration, but was submitted as final to the *Federal Register* on January 17, 2017. See <https://www.federalregister.gov/public-inspection/2017/01/19#special-filing-mine-safety-and-health-administration>.
- ¹³⁹ 82 Fed. Reg. 23,139 (May 22, 2017); 82 Fed. Reg. 42,765 (Sept. 12, 2017); 82 Fed. Reg. 46,411 (Oct. 5, 2017).
- ¹⁴⁰ 83 Fed. Reg. 15,055 (Apr. 9, 2018) (setting effective date of June 2, 2018).
- ¹⁴¹ *United Steel v. Mine Safety & Health Admin.*, 925 F.3d 1279 (D.C. Cir. 2019) (decision June 11, 2019).
- ¹⁴² 82 Fed. Reg. 2470, 2472 (Jan. 9, 2017).
- ¹⁴³ 82 Fed. Reg. 14,439 (Mar. 21, 2017); 84 Fed. Reg. 51,377 (Sept. 30, 2019).
- ¹⁴⁴ 83 Fed. Reg. 19,936 (May 7, 2018); 84 Fed. Reg. 53,902 (Oct. 8, 2019).
- ¹⁴⁵ *Compare* Occupational Exposure to Respirable Crystalline Silica, 81 Fed. Reg. 16,286 (Mar. 25, 2016) with Memorandum from Thomas Galassi, Acting Deputy Asst. Sec'y, OSHA, to Reg'l Adm'rs, Interim Enforcement Guidance for the Respirable Crystalline Silica in Construction Standard (Oct. 19, 2017), <https://perma.cc/V69R-VFYF> (noting that the compliance deadline for the construction standards was delayed from June 23, 2017 until Sept. 23, 2017, and then "compliance assistance in lieu of enforcement" was offered for at least another 30 days). See also 81 Fed. Reg. at 16,589, tbl. VII-24 (estimating that in the construction sector, the rule would prevent about 545 deaths from lung cancer, end-stage renal disease, silicosis, and other respiratory diseases, as well as 530 cases of silicosis morbidity per year).
- ¹⁴⁶ Pesticides; Certification of Pesticide Applicators, 82 Fed. Reg. 952, 953 (Jan. 4, 2017) (calculating up to \$24.3 million per year in benefits from avoided acute pesticide incidents, as well as reduced chronic effects including cancer, bronchitis, and asthma); EPA, ECONOMIC ANALYSIS OF FINAL AMENDMENTS TO 40 CFR PART 171: CERTIFICATION OF PESTICIDE APPLICATORS at 130-31, 149-53 (2016) <https://www.regulations.gov/document?D=EPA-HQ-OPP-2011-0183-0807>.
- ¹⁴⁷ Delay of Effective Date for 30 Final Regulations, 82 Fed. Reg. 8499 (Jan. 26, 2017); Further Delay of Effective Dates for Five Final Regulations, 82 Fed. Reg. 14,324 (Mar. 20, 2017); Pesticides; Certification of Pesticide Applicators; Delay of Effective Date, 82 Fed. Reg. 25,529 (June 2, 2017).
- ¹⁴⁸ *Pineros y Campesinos Unidos del Noroeste v. Pruitt*, 293 F. Supp. 3d 1062 (N.D.Cal. 2018).
- ¹⁴⁹ Stokes et al., *supra* note 9, at 759; see also Shikha Garg et al., *Hospitalization Rates and Characteristics of Patients Hospitalized with Laboratory-Confirmed Coronavirus Disease 2019—COVID-NET, 14 States, March 1–30, 2020*, 69 MORBIDITY & MORTALITY WKLY. REP. (CDC) 458 (2020), <https://perma.cc/A8HQ-7Q29>; Jennifer Lighter et al., *Obesity in Patients Younger than 60 Years Is a Risk Factor for Covid-19 Hospital Admission*, CLINICAL INFECTIOUS DISEASES, Apr. 9, 2020, <https://perma.cc/HSUJ-2FV2>; Christopher M. Petrilli et al., *Factors Associated with Hospitalization and Critical Illness Among 4,103 Patients with COVID-19 Disease in New York City* (2020), <https://perma.cc/KDN8-CVJ4>; Cai Qingxian et al., *Obesity and COVID-19 Severity in a Designated Hospital in Shenzhen, China* (Preprints with the Lancet, Research Paper, 2020), <https://perma.cc/W87Z-ACLY>.
- ¹⁵⁰ Some initial studies hypothesized that smoking could perhaps somehow be protective against the novel coronavirus. See, e.g., Giuseppe Lippi & Brandon Michael Henry, *Active Smoking Is Not Associated with Severity of Coronavirus Disease 2019 (COVID-19)*, 75 EUR. J. INTERNAL MED.

- 107 (2020), <https://perma.cc/FMY9-CMCY>; Petrilli et al., *supra* note 149, at 13. More recently, however, several scientists have cast doubt on those few early studies that suggested smoking could be protective. Dr. John Maa & Bonnie Halpern-Felsher, *Suggestion that Smoking Protects from COVID-19 May Be Dangerous to Public Health*, THE HILL (May 11, 2020), <https://perma.cc/5NQ6-AKKV> (claiming there was “a misinterpretation of early evidence from small studies in China and Europe,” which are explained by “statistical flaws and sampling error, along with poor rates of screening and documentation of smoking history”); Clare Wilson, *Smoking Probably Puts You at Greater Risk of Coronavirus, Not Less*, NEW SCIENTIST (May 19, 2020), <https://perma.cc/M3VR-LJTR>; see also Guan et al., *supra* note 22, at 1712, tbl.1; Q&A: *Tobacco and COVID-19*, WORLD HEALTH ORG. (May 27, 2020), <https://perma.cc/3CZV-V8MY>.
- 151 Elizabeth Williamson et al., *OpenSAFELY: Factors Associated with COVID-19-Related Hospital Death in the Linked Electronic Health Records of 17 Million Adult NHS Patients* 9 tbl. 2 (OpenSAFELY, medRxiv Preprint Paper, 2020), <https://perma.cc/U243-NCFB> (showing an increase for ex-smokers over non-smokers, and also an increase for smokers when adjusting for age and sex, though not when “fully” adjusting to control other factors).
- 152 Constantine I. Vardavas & Katerina Nikitara, *COVID-19 and Smoking: A Systematic Review of the Evidence*, TOBACCO INDUCED DISEASES, Mar. 20, 2020, at 2 (internally peer-reviewed, fast-track article), <https://perma.cc/A8TM-P7R2>; see also Wei Liu et al., *Analysis of Factors Associated with Disease Outcomes in Hospitalized Patients with 2019 Novel Coronavirus Disease*, 133 CHINESE MED. J. 1032 (2020), <https://perma.cc/Y25R-Z8M8> (finding history of smoking to be associated with progression of COVID-19 pneumonia).
- 153 Roengrudee Patanavanich & Stanton A. Glantz, *Smoking Is Associated with COVID-19 Progression: A Meta-Analysis*, NICOTINE & TOBACCO RES., May 6, 2020, at 1, 3, <https://perma.cc/J5RK-TMCA> (also explaining that not all studies clearly distinguished between current and former smokers); see also Tia Graham, *Smoking, Vaping Worsens Effects of COVID-19*, WDET (May 22, 2020), <https://perma.cc/HWP6-83GZ> (quoting Dr. Patrice Harris, president of the American Medical Association, as saying “There is growing consensus among health experts that smoking and vaping can worsen these effects [of COVID-19].”); Killerby et al., *supra* note 9 (finding that smoking is independently associated with hospitalization rates).
- 154 See *supra* Section I.A. on other health conditions that are Covid-19 risk factors.
- 155 *High Blood Pressure: Know Your Risk for High Blood Pressure*, Ctrs. for Disease Control & Prevention, <https://perma.cc/74KB-MSKT> (updated Feb. 24, 2020).
- 156 *Smoking & Tobacco Use: Health Effects*, Ctrs. for Disease Control & Prevention (updated Apr. 28, 2020), <https://perma.cc/87MC-DD4X>; *Smoking & Tobacco Use: Health Effects of Cigarette Smoking*, Ctrs. For Disease Control & Prevention (updated Apr. 28, 2020), <https://perma.cc/N8NQ-RTML>.
- 157 *Diabetes: Eat Well*, Ctrs. for Disease Control & Prevention, <https://perma.cc/SSHJ-3N3N> (updated Sept. 19, 2019).
- 158 *Overweight & Obesity: Adult Obesity Causes & Consequences*, Ctrs. for Disease Control & Prevention, <https://perma.cc/D453-DRZ5> (updated June 11, 2020).
- 159 *Heart Disease: About Heart Disease*, Ctrs. for Disease Control & Prevention, <https://perma.cc/QAS5-EK2F> (updated Mar. 20, 2020).
- 160 *High Blood Pressure*, *supra* note 155.
- 161 Richardson et al., *supra* note 22; Killerby et al., *supra* note 9.
- 162 *Cancer: Tobacco and Cancer*, Ctrs. for Disease Control & Prevention, <https://perma.cc/N67M-4LJL> (updated Oct. 22, 2019) (“People who are poorer, less educated, or part of certain racial or ethnic groups are more likely to smoke.”).
- 163 This is the terminology used in the CDC data. Because the CDC’s categorization may not include other indigenous populations who are included in the term Native Americans, this report replicates the CDC’s specific designations.
- 164 *Burden of Cigarette Use in the U.S.*, Ctrs. for Disease Control & Prevention, <https://perma.cc/SVUF-SSL7> (updated Mar. 23, 2020) (22.6% versus 13.7%).
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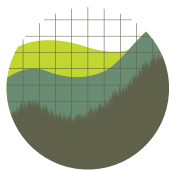
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- ²⁸² See Amicus Br. of Policy Integrity at 10-11, *N.Y. v. Dept. of Health & Human Serv.*, No. 1:19-cv-4676 (SDNY June 24, 2019), https://policyintegrity.org/documents/PolicyIntegrity_CorrectedAmicusBrief_19cv4676_5433_5435.pdf.
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- ²⁸⁴ *N.Y. v. Dept. of Health & Human Serv.*, 414 F.Supp.3d 475 (SDNY 2019).
- ²⁸⁵ *Trump Administration Actions to Protect Life and Conscience*, HHS (Jan. 24, 2020), <https://perma.cc/XBK3-5ZGZ>.
- ²⁸⁶ 83 Fed. Reg. at 57,578, 57,581 (providing various estimates of the number of women who might lose various types of coverage under the expanded exemptions: 64,000 women, 126,400 women, 161,000 women).
- ²⁸⁷ Compliance with Statutory Program Integrity Requirements, 84 Fed. Reg. 7714 (Mar. 4, 2019).
- ²⁸⁸ Ruth Dawson, *Trump Administration’s Domestic Gag Rule Has Slashed the Title X Network’s Capacity by Half*, Guttmacher Inst. (Feb. 5, 2020), <https://perma.cc/9M9A-VFEN>.
- ²⁸⁹ See Brief of Policy Integrity at 7, as Amici Curiae Supporting Plaintiff, *California v. Azar*, 385 F. Supp. 3d 960 (N.D. Cal. 2019), <https://perma.cc/VC62-9BK9> (discussing loss of healthcare services).
- ²⁹⁰ Nondiscrimination in Health Programs and Activities, 81 Fed. Reg. 31,375 (May 18, 2016).
- ²⁹¹ *Franciscan All., Inc. v. Burwell*, 227 F. Supp. 3d 660 (N.D. Tex. 2016).
- ²⁹² Nondiscrimination in Health and Health Education Programs or Activities, 84 Fed. Reg. 27,846 (proposed June 14, 2019).
- ²⁹³ MaryBeth Musumeci et al., *HHS’s Proposed Changes to Non-Discrimination Regulations Under ACA Section 1557* (Kaiser Fam. Found., Report, 2019), <https://perma.cc/869Y-UZ7Y>.
- ²⁹⁴ Nondiscrimination in Health and Health Education Programs or Activities, Delegation of Authority, 85 Fed. Reg. 37,160 (June 19, 2020).
- ²⁹⁵ Patient Protection and Affordable Care Act; Market Stabilization, 82 Fed. Reg. 18,346 (Apr. 18, 2017).
- ²⁹⁶ Yasmeen Abutaleb, *Trump Administration Issues Final Rule on Stricter Obamacare Enrollment*, REUTERS, Apr. 13, 2017.
- ²⁹⁷ Medicaid Program; Covered Outpatient Drug; Further Delay of Inclusion of Territories in Definitions of States and United States, 84 Fed. Reg. 64,783 (Nov. 25, 2019).
- ²⁹⁸ Short-Term, Limited-Duration Insurance, 83 Fed. Reg. 38,212 (Aug. 3, 2018); see also *Ass’n for Cmty. Affiliated Plans v. U.S. Dep’t of Treasury*, 392 F. Supp. 3d 22 (D.D.C. 2019) (upholding the rule).

- ²⁹⁹ See *Medicaid Waiver Tracker: Approved and Pending Section 1115 Waivers by State*, Kaiser Fam. Found. (June 26, 2020), <https://perma.cc/Y3LS-V6KN>.
- ³⁰⁰ Jessica Sharac et al., *Blog: Medicaid Work Requirement Experiments Could Prove Costly for Thousands of Patients and Staff*, Milken Inst. Sch. Pub. Health: GW Health Pol’y & Mgmt. Matters (June 24, 2019), <https://perma.cc/KE8M-WBHT>.
- ³⁰¹ *Gresham v. Azar*, 950 F.3d 93 (D.C. Cir. 2020) (Kentucky and Arkansas work requirements were arbitrary and capricious); *Philbrick v. Azar*, 397 F. Supp. 3d 11 (D.D.C. 2019) (New Hampshire); see also David Eggert, *Federal Judge Invalidates Medicaid Work Requirements in Michigan*, DETROIT FREE PRESS (Mar. 5, 2020), <https://perma.cc/U4G4-7HVG>.
- ³⁰² As of June 2020, both Indiana and Utah have begun to implement their programs; Arizona, Ohio, Wisconsin, and South Carolina have not started their programs yet; and other states have pending programs. See *Medicaid Waiver Tracker*, *supra* note 299.
- ³⁰³ For example, in the meantime nearly 16,900 people lost coverage in Arkansas. See *Philbrick*, 397 F. Supp. 3d at 15–16.
- ³⁰⁴ *As New Coronavirus Cases Hit Another Record in the U.S., Some States Delay Reopenings*, N.Y. TIMES (updated June 27, 2020), <https://perma.cc/EFV2-RU9S>.
- ³⁰⁵ The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174 (Apr. 30, 2020).
- ³⁰⁶ *Trump Administration Moves Ahead with Harmful Clean Cars Rollback*, Env’tl. Def. Fund, <https://perma.cc/3YSX-FE7J>.
- ³⁰⁷ Supplemental Nutrition Assistance Program: Requirements for Able-Bodied Adults Without Dependents, 84 Fed. Reg. 66,782 (Dec. 5, 2019).
- ³⁰⁸ *Id.* at 66,807.
- ³⁰⁹ Jessica Shahin, Assoc. Dir., Supplemental Nutrition Assistance Program, Memorandum, Families First Coronavirus Response Act and Impact on Time Limit for Able-Bodied Adults Without Dependents (Mar. 20, 2020), <https://perma.cc/56FP-N3UC> (noting that the temporary stay was pursuant to an Act of Congress and will end one month after HHS lifts its public health emergency declaration).
- ³¹⁰ *District of Columbia v. U.S. Dep’t of Agric.*, No. 20-119 (BAH), 2020 WL 1236657 (D.D.C. Mar. 13, 2020).
- ³¹¹ Sean Reilly, *Fired Scientists Blast EPA Soot Standard in Medical Journal*, E&E News (June 11, 2020), <https://perma.cc/2H88-36M3>.
- ³¹² McGarity et al., *supra* note 1, at 13.
- ³¹³ Mann, *supra* note 249 (emphasis added).



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