

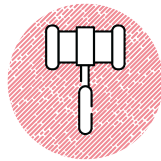
Death by inequality

How workers' lack of power harms their health and safety

By [Ann Rosenthal](#) • April 19, 2021

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Unequal Power

Part of the [Unequal Power](#) project, an EPI initiative to reestablish the understanding in law, politics, economics, and philosophy, that equal bargaining power between workers and employers does not exist. Recognizing this inherent workplace inequality will bolster freedom, economic fairness, workplace protections and democracy.

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The purpose of the Occupational Safety and Health Act of 1970 is to ensure that workplaces are free of hazards that kill or injure workers. To further this goal, the law empowers workers with specific rights, including the right to request inspections by the Occupational Safety and Health Administration (OSHA) and to participate in those inspections, to petition OSHA to promulgate workplace standards and to challenge those standards if they are not adequately protective, to obtain information about the hazards workers are exposed to and the protections they are supposed to have from those hazards, and to complain about unsafe working conditions. These rights, when actually available and exercisable, can reduce the power disparity that exists between employers and workers.

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This paper focuses on the legal constraints on employers created by the Occupational Safety and Health Act of 1970 (OSH Act) and use some common examples to explore how, despite these constraints, employers retain considerable powers over their workers' abilities to protect themselves from injury, illness, death, and loss of human dignity. From being able to decide when—or whether—to use the bathroom to protecting themselves from toxic substances, refusing to perform particularly hazardous tasks, learning about the hazards at their workplaces, or obtaining appropriate medical care for occupational injuries, workers are at the mercy of potentially dictatorial employers.

The consequences to employers for harming their employees may be much less severe than the consequences would be for harm occurring outside of the employment relationship. The costs to workers for standing up for themselves are likely to be far greater than the pain their actions would cause their employers. Workers who opt to quit as a way to protect themselves lose not only their paychecks but also their eligibility for unemployment insurance, frequently at a time or place in which there are few other employment opportunities. These structural imbalances are amplified by the fact that many of the most dangerous jobs in this economy are disproportionately held by some of the most vulnerable and lowest-paid workers.

This paper discusses the deficiencies in both the act and its implementation that have prevented it from fully empowering workers. Although workers would be worse off without the protections the act provides, it is now clear that they still lack an effective right to control their exposure to hazards that threaten life and health. Some of these deficiencies have become starkly obvious during the COVID-19 pandemic:

- Many workers who have complained about the lack of protections from the virus have faced discipline or termination for expressing concern. This problem has been aggravated by OSHA's almost complete failure during the crisis in 2020 to use the act's tools to provide workers with meaningful protection. It refused to issue an emergency standard to address the most significant workplace hazard in its history, and it made minimal attempts to enforce the rules it does have. As a result, workers have had to fend for themselves, sometimes by filing lawsuits that courts have

dismissed because it should be OSHA's job to enforce workplace protections. Moreover, OSHA lacks the resources it would need to enforce the act effectively, even without a pandemic.

- One of the act's goals was to improve record-keeping related to work-related injuries, illnesses, and deaths, and to allow workers access to those records so they can better protect themselves. But employers have undermined that protection, in part by opening onsite "clinics" that workers are required to use for injury or illness treatment. The clinics often seem to exist primarily to make sure that workers do not receive the level of treatment that would require the injuries and illnesses to be recorded.
- OSHA has many built-in challenges to carrying out its mandate. It is a tiny agency, and its current contingent of compliance officers is the smallest in its history, even though there are now twice as many workers as there were in the early 1970s. Although OSHA uses various methods to focus its resources on the most endangered workers, many workplaces and hazards inevitably evade enforcement.
- The act contemplated a relatively expeditious method for adopting and updating safety and health standards addressing the hazards that injure, sicken, and kill workers. But subsequent legislation, court-imposed requirements, new analyses required by the executive branch, steadfast industry opposition to any new restraints, and the anti-regulatory biases of many administrations have made it almost impossible for OSHA to issue more than one or two standards a year.

Though there have been some notable successes under the OSH Act, the lack of adequate resources and political support, combined with structural weaknesses in the statute and the changing nature of work in the 21st century, have resulted in dashed hopes and a continuing stream of powerless, injured, and ill workers.

Introduction

The American tradition venerates freedom, and, although definitions of the word vary, personal autonomy is usually a part of it. Having control over our own person and being able to protect ourselves from injury, illness, and death seem to most of us to be fundamental rights. But once we become employees all that changes; at that point, employers gain substantial control over our ability to protect ourselves from harm. This arrangement can be best understood through Elizabeth Anderson's concept of workplaces as "private governments," places where "[t]he dictator is the chief executive officer..., superiors are managers, subordinates are workers" (Anderson 2015). In this environment, called the employer–employee relationship, employers have vast power to create the "laws" governing worker behavior, to decide whether workers have violated those laws, and to set and enforce the penalties for such violations. Subject to minimal legal and contractual restraints, this employer power applies to worker behavior both inside and outside the workplace, though its exercise is particularly prevalent within the workplace.

This paper will focus on the legal constraints on employers created by the Occupational

Safety and Health Act of 1970 (OSH Act)¹ and use some common examples to explore how, despite these constraints, employers retain considerable powers over their workers' abilities to protect themselves from injury, illness, death, and loss of human dignity.

From being able to decide when—or whether—to use the bathroom to protecting themselves from toxic substances, refusing to perform particularly hazardous tasks, learning about the hazards at their workplaces, or obtaining appropriate medical care for occupational injuries, workers are at the mercy of potentially dictatorial employers. And the consequences to employers for harming their employees may be much less severe than the consequences would be for harm occurring outside the employment relationship. As Anderson has pointed out, the costs to workers for standing up for themselves are likely to be far greater than the pain their actions would cause their employers. Workers who opt to quit as a way to protect themselves lose not only their paychecks but also their eligibility for unemployment insurance, frequently at a time or place in which there are few other employment opportunities. These structural imbalances are amplified by the fact that many of the most dangerous jobs in this economy are disproportionately held by some of the most vulnerable and lowest-paid workers.²

Fifty years ago, these concerns contributed to passage of the OSH Act, which created OSHA, the Occupational Safety and Health Administration. The act is an acknowledgement that market forces are not adequate to provide workers with decent working conditions and thus constitutes a significant rebuke to the idea that workers and employers create employment contracts from positions of equal power and knowledge. The act not only created working standards and empowered the secretary of labor to create and enforce others, it also explicitly empowered workers in several important ways. These include the right to request OSHA inspections and to participate in those inspections, the right to petition OSHA to promulgate workplace standards and to challenge those standards if they are not adequately protective, the right to information about the hazards workers are exposed to and the protections they are supposed to have from those hazards, and the right to complain about unsafe working conditions. Most notably, of course, the act created the right to workplaces free of the hazards that killed and injured so many workers before its passage.

All of these provisions were intended to enhance workers' ability to manage their own safety and health or, in contemporary terms, to raise their voices to protect themselves from hazards in the workplace. By creating mechanisms intended to provide workers and their representatives with information about hazards in their workplaces and the means to correct them, as well as the explicit right to call out dangerous conditions, the act was intended to free workers from total dependence on their employers' determinations that conditions were safe enough to work in. Workers' abilities to make complaints about unsafe conditions and to protect themselves from those conditions without fear of retaliation are crucial to workers' autonomy and self-protection. By also allowing workers to seek more protective workplace safety and health standards, and to participate in their creation, the act acknowledged workers' abilities to recognize which hazards were in greatest need of amelioration. Taken together, these provisions were intended to empower workers to take more control of the work conditions that placed them at risk.

Unfortunately, a combination of factors, including the changing structure of work over the last half-century, a lack of enforcement and regulatory resources, and a judiciary and multiple administrations hostile to workers' rights, have limited those rights in ways that the drafters of the act did not anticipate. This paper looks primarily at four limitations impacting the effectiveness of the OSH Act:

- *Workers' limited ability to avoid or correct dangerous conditions.* Many workers who complain about lack of protections face discipline or termination for expressing concern. This problem has been aggravated recently by OSHA's almost complete failure to use the act's tools to provide workers with meaningful protection. It has refused to issue an emergency standard to address COVID-19—the most significant workplace hazard in its history—and it has made minimal attempts to enforce the rules it does have. As a result, workers have had to fend for themselves, sometimes by filing lawsuits that courts have dismissed because it should be OSHA's job to enforce workplace protections. Moreover, OSHA lacks the resources it would need to enforce the act effectively, even without a pandemic.
- *Workers' limited access to information about hazards and ability to receive treatment.* One of the act's goals was to improve record-keeping related to work-related injuries, illnesses, and deaths, and to allow workers access to those records so they can better protect themselves. But employers have undermined that protection, in part by opening onsite "clinics" that workers are required to use for injury or illness treatment. The clinics often seem to exist primarily to make sure that workers do not receive the level of treatment that would require the injuries and illnesses to be recorded.
- *Structural limitations at the agency.* OSHA has many built-in challenges to carrying out its mandate. It is a tiny agency, and its contingent of 862 compliance safety and health officers at the beginning of 2020 was the smallest in its history, even though there are now twice as many workers as there were in the early 1970s. Although OSHA uses various methods to focus its resources on the most endangered workers, many workplaces and hazards inevitably evade enforcement.
- *The roadblocks slowing the creation of workplace safety standards.* The act contemplated a relatively expeditious method for adopting and updating safety and health standards addressing the hazards that injure, sicken, and kill workers. But subsequent legislation, court-imposed requirements, new analyses required by the executive branch, steadfast industry opposition to any new restraints, and the anti-regulatory biases of many administrations have made it almost impossible for OSHA to issue more than one or two standards a year.

OSHA's challenges began at the beginning. To jump-start the process of promulgating safety and health standards, the act gave OSHA the ability, during a two-year window ending in April 1973, to adopt, with minimal notice and comment, "national consensus standards" and "established Federal standards" as mandatory OSHA standards.³ National consensus standards are exactly what their name implies—standards adopted by consensus of parties "interested [in] and affected by [them]."⁴ They were not necessarily based on evidence that they would create safe working conditions, but most often simply required conditions or practices that the affected parties believed were achievable. These

standards were often also the basis for the established federal standards adopted under earlier statutes.⁵

The case of regulating harmful chemicals illustrates how the shortcuts allowed under this process limited the ability of the standards to protect workers' health. The established federal standards for potentially harmful chemicals were based on threshold limit values (TLVs) that had been adopted by the American Council of Governmental Industrial Hygienists (ACGIH) in 1945 and that industry had believed were achievable in the 1930s and 1940s (Markowitz and Rosner 1995). In the case of silica dust, for example, to be discussed more fully later in this paper, the initial recommended limit was developed in 1936 by silica-using industries in large part to shield employers from liability for their workers' silica disease. The creators acknowledged that they did not know that exposures below the recommended level were safe, only that levels above that amount were dangerous, and that they believed it was the lowest level then-modern manufacturing methods could achieve. Nonetheless, both before and after ACGIH adopted the value, it was widely promoted as a "safe" level of exposure, and it remained in effect for about 90% of silica-exposed workers until 2017 (Markowitz and Rosner 1995).

Most of the other national and federal standards adopted during that two-year window, often referred to as 6(a) standards, are also still in effect, despite being based on knowledge and technology current in the 1930s through the 1960s and not having been developed to be enforceable at all. But OSHA has had a hard time updating them. In fact, in the 50-plus years since the act took effect, OSHA has adopted or updated standards for only 27 of the 500 chemicals regulated through 6(a) standards and has promulgated not many more significant standards addressing other hazards. In setting out the process for promulgating standards, Congress anticipated relatively expeditious action by OSHA—a maximum of nine months in cases where no party requested a public hearing, and not much more when there is a hearing.⁶ This alacrity has proved to be illusory.

There are many reasons for this slow pace, starting with the addition by the courts, Congress, and the executive branch of new procedural and analytical steps before any rule may be issued, and including shifting priorities within the agency, especially following changes in administrations. Subsequent to 1970, Congress itself passed a number of additional statutes applicable to OSHA that increased the time and complexity of rulemaking. One of the most significant is the Small Business Regulatory Enforcement and Fairness Act (SBREFA) of 1996, which requires that, before OSHA can even *propose* a new rule, it must convene a panel, comprising OSHA, the Office of Information and Regulatory Affairs in the Office of Management and Budget, and the Small Business Administration's chief counsel for advocacy, to collect the advice and recommendations of representatives of small entities likely to be affected by the rule, and then to modify the rule and related analyses in accord with those recommendations.⁷ Although OSHA has sometimes said it finds the information it obtains through these panels helpful, there is no question that they lengthen the rulemaking process, and the same information, with appropriate outreach, could be obtained through the regular rulemaking process.⁸ Other requirements not included in the statute come from executive orders, other statutes such as the Regulatory Flexibility Act,⁹ and case law.¹⁰

This increased time and complexity for creating new standards is particularly unfortunate because OSHA has a hard time enforcing the old ones. Its actions under the standards have been subject to constant challenges, often over issues arising from the fact that national consensus standards were not intended to be enforceable when they were written.¹¹

In addition, resource limits prevent OSHA from enforcing its standards to provide even the reduced levels of protection they offer. So, when workers seek government enforcement, the protection they receive is not guaranteed to be effective and may result in retribution, which is illegal but not susceptible to prompt remedies. Thus, although the act has improved work conditions and workers would be much worse off without OSHA protections, workers still rely to a large extent on competitive market forces (the threat of quitting) to obtain safe working conditions, and they have not been empowered to the extent once hoped (see, e.g., Rinehart 2008; Michaels and Barab 2020). As the following examples illustrate, this lack of worker power and protection became particularly clear in 2020, as the COVID-19 pandemic surged.

Workers’ abilities under the OSH Act to avoid or correct dangerous conditions at their workplaces

Most of us consider the ability to avoid obvious danger to be a basic human right. In some cases, though, that right can conflict with what employers consider their own right to determine how their employees will perform their work. In Anderson’s language, the private governing entities make “laws” that require worker exposure to danger. As a result, for workers in some hazardous jobs, avoiding danger can come at the cost of those jobs. This devil’s bargain has come into stark focus during the COVID-19 pandemic. Enormous numbers of essential workers, from doctors and nurses to grocery and meatpacking workers, have been unable to take simple, appropriate protective measures such as pointing out the hazards they face, using appropriate personal protective equipment (PPE), refusing to perform dangerous work assignments, and obtaining OSHA assistance to make their worksites safer. Many endangered workers have suffered retaliation for their efforts, and they have received little help from OSHA for reasons related both to resource limitations and to a lack of political will.

Ability to refuse to perform dangerous tasks

The problem of retaliation is not new. In a step that was unusual in 1969, Congress included a whistleblower provision in the OSH Act that allowed workers who were retaliated against for expressing concerns about unsafe conditions to complain to the secretary and, if the secretary accepted the complaint and successfully prosecuted the case in court, to obtain relief.¹² In implementing that provision, OSHA promulgated a rule that interpreted the provision to include certain failures to perform dangerous tasks as

protected activities.¹³ But although the act's whistleblower protections were innovative for their time and have provided protection for workers in a number of situations,¹⁴ their effects have not been as dramatic or as effective as the drafters hoped.

In a particularly important example that occurred shortly after the OSH Act took effect, two workers at a Whirlpool manufacturing plant in Ohio were instructed to stand on a wire mesh screen 20 feet above the factory floor to perform maintenance.¹⁵ Several workers had fallen through the screen in the past, and recently a worker performing a similar task had been killed after such a fall. The workers had complained to the plant's safety superintendent that working on the mesh was unsafe, and they told him they intended to complain to OSHA as well. Although the employer promised to replace the mesh and nominally instituted interim work procedures that would keep workers off the mesh, only 12 days after their colleague's death the workers' foreman told them to walk onto the mesh and disciplined them when they refused to do so.

The workers complained to OSHA about the discipline, and OSHA filed suit on their behalf. OSHA relied on its regulation implementing the whistleblower provision to argue that the act protects workers who, with no reasonable alternative, refuse to perform an assignment because of a reasonable apprehension that the assignment could cause death or serious injury. This regulation applies, OSHA said, in situations like this one, where there is insufficient time to allow the act's normal enforcement provisions to work. A unanimous Supreme Court agreed, and it affirmed the proposition that the OSH Act allows workers to protect themselves by refusing to work in these circumstances.¹⁶

This OSH Act right to refuse to perform dangerous job assignments is quite limited, however. Workers have a right only to refuse to expose themselves to "a real danger of death or serious injury," and only if they have already sought abatement of the danger from their employer and there is not enough time to obtain an OSHA inspection and allow the OSH Act's "regular statutory enforcement channels" to work.¹⁷ Workers have somewhat more protection if they are disciplined for complaining about inadequate protections, but even those protections are not sufficient in many instances.¹⁸ Most important, the structure of the OSH Act's protection does not allow it to provide effective or real-time protection (see, e.g., Spieler 2016), for two reasons.

First, the act requires that workers file complaints with OSHA within 30 days of suffering any retaliation. This is a prohibitively short time for workers who may not know all the facts surrounding their discipline when it occurs, or who may not even realize that they have a right to protection. As a result, a large proportion of the complaints that OSHA receives are dismissed because they do not meet this 30-day deadline. In contrast, more modern whistleblower statutes generally allow complainants up to 180 days to file complaints (OSHA 2019a). Second, once a complaint is filed, workers are likely to face years of delay before receiving any relief. Once OSHA receives a complaint, it must perform an investigation to decide whether to accept the complaint. But although OSHA receives about 2,000 OSHA whistleblower complaints a year, it has fewer than 150 whistleblower investigators, and they are also responsible for investigating complaints filed under more than 20 other statutes. If OSHA determines that the complaint has merit, and if it convinces both the Office of the Solicitor of Labor and the Department of Justice that the

case is worth taking forward, the solicitor may file a complaint in federal district court. This process alone can take up to five years, but the courts are also overwhelmed, and it can take another two to three years for a case to come to trial.¹⁹ And, of course, the whole system is completely dependent on OSHA's willingness to play its role.

The whistleblower provisions of the Mine Safety and Health Act of 1977 (Mine Act)²⁰ provide a useful contrast. The Mine Act was enacted only seven years after, and was modeled in large part on, the OSH Act. But it also corrected some of the earlier act's weaknesses, including the whistleblower provision. Among other improvements, the Mine Act expanded the list of protected activities explicitly named in the statute, authorized the temporary reinstatement of miners during adjudication of their whistleblower complaints, and—probably most important—provided an independent right of action for miners whose complaints were not prosecuted by the secretary. Miners have used this right successfully on many occasions.²¹ The right to refuse to work is also broader under the Mine Act than under the OSH Act. Miners need only show that they have a reasonable, good faith belief that performing the assigned task would be unsafe.²² Over the decades, a number of bills have been introduced to amend the OSH Act in a similar direction, but with no success.

During the COVID-19 pandemic, thousands of essential workers have tried mightily to reduce their risk of exposure, many times against the wishes of their employers. As a result, the news has been full of reports of workers being disciplined, or threatened with discipline, for trying to protect themselves. Some of the most exposed workers are involved in caring for infected patients, and many of them have struggled to obtain necessary PPE. For example, on March 27, 2020, a doctor in Washington state—where the first U.S. coronavirus case was reported—was fired for social media posts trying to help secure more PPE for workers at his hospital (Judd 2020). This was at a time when there was a real shortage of appropriate respiratory protection, and many health care workers had gone public with their concerns about the workaround methods their employers were using to cope with that shortage (Padilla 2020). In April, a group of nurses in California were suspended after they refused to care for COVID-19 patients unless the employer provided the caregivers with protective N95 respirator masks—this after one of their colleagues came down with the disease while wearing the type of surgical mask that their employer insisted was all that was necessary (Associated Press 2020b).

Warehouse workers are another essential group who have even more work as the pandemic has caused many consumers to stay away from retail stores and instead rely heavily on online ordering. As early as March 2020, workers at an Amazon warehouse on Staten Island, N.Y., staged a lunch-hour walkout after one of their colleagues was diagnosed with COVID-19. They wanted Amazon to do a better job of cleaning the facility and to provide them with more virus protections. Amazon's first reaction was to fire the worker who led the walkout, a move currently being investigated by the state attorney general (Bellafonte 2020; Palmer 2020).

How does OSHA play into this situation? Workers facing retaliation for their complaints about COVID-19 hazards, or their refusal to work without appropriate protection, are clearly within the scope of the OSH Act's whistleblower provision. And as of Sept. 30, 2020, workers had filed 3,041 coronavirus-related whistleblower complaints with OSHA.

However, OSHA had closed half of those without a full investigation, had “docketed” for investigation only 653 complaints, and of those had resolved only 231 (OSHA 2020a).²³ In a report issued in August 2020 examining whistleblower activity during the first four months of the pandemic, the Department of Labor’s inspector general concluded that the pandemic had resulted in a 30% increase in OSHA’s whistleblower caseload, and that coronavirus-related complaints made up 40% of the total whistleblower caseload (Department of Labor 2020). However, the agency had fewer investigators available to handle those cases than it had available the previous year, and it had made no special provisions to handle the pandemic-related complaints. This short-handedness resulted in significant processing delays, which the inspector general found “could leave workers to suffer emotionally and financially.” Although OSHA responded that it was taking steps to improve the situation, the data for September and October 2020 did not show much change (Department of Labor 2020).

OSHA enforcement in response to COVID-19 hazards

COVID-19 is obviously an occupational hazard for many essential workers, and, under the OSH Act, one way for workers to protect themselves from occupational hazards is to notify their employers and OSHA of the hazards they face. The act requires OSHA to perform an inspection if a worker or a worker’s representative files a signed written complaint,²⁴ but, despite having received 9,160 COVID-related complaints (and 1,228 referrals, e.g., from other federal and state agencies) by the end of September 2020, OSHA had closed more than 80% of those cases and had opened only 199 complaint (and 86 referral) inspections and only 996 COVID-related inspections in all (OSHA 2020c). The higher number includes fatality investigations (more than 60% of the total), employer reports (presumably of hospitalizations), and a relatively small number related to other inspections. Shortly thereafter, OSHA changed its interpretation of its reporting rule so that employers are no longer required to report COVID-19 hospitalizations. This move resulted in OSHA vacating its first, and until July its only, COVID-related enforcement action. Most startling, through July OSHA had cited only one other employer for violations related to the pandemic (OSHA 2020d).

OSHA signaled early on that its response to the pandemic would not include robust enforcement. In April 2020, OSHA announced that, outside of high-risk medical facilities, it would not perform physical inspections in response to most reports of COVID-19 hazards (OSHA 2020e). Instead it would use its “phone/fax” process to notify employers of the alleged hazard and ask the employers to report on how they had addressed that hazard. At the same time it told employers that in areas where there was “ongoing community transmission,” only employers involved in health care or emergency response and correctional institutions needed to record most cases of COVID-19 related to workplace exposures (OSHA 2020h). OSHA eventually reversed the recording policy and amended the enforcement policy to allow for a somewhat higher number of inspections (OSHA 2020g; 2020i). But it continued to insist that the nonmandatory guidance documents it was issuing, recommending that employers “consider” implementing COVID-19 safeguards

“if feasible,” were a forceful response to the pandemic (OSHA 2020j). OSHA also refused to issue an emergency temporary standard, authorized under 29 U.S.C. 655(c), to protect workers from a new “grave danger,” despite several petitions asking it to do so. Such a standard would have given much clearer information to businesses on how to protect their workers and provided OSHA with many more enforcement options. When the AFL-CIO challenged this decision in court, a judicial panel including the former head of the Trump administration’s deregulatory efforts denied it.²⁵

Workers in crowded indoor workspaces are at particularly high risk of contracting COVID-19. One of the first recommendations for avoiding infection is “physical distancing”—that is, remaining at least six feet away from others (CDC 2020a)—but workers in many industries have not been able to do this. The most notorious example is meat and poultry processing, where workers on processing lines often work shoulder to shoulder on each side of a moving belt. These are some of the most dangerous places to work at any time, and the workers, often refugees and immigrants, have some of the least ability to protect themselves (Waltenburg et al. 2020).

One of the first examples of unchecked workplace spread of COVID-19 occurred at a Smithfield Foods pork plant in South Dakota. The plant was eventually shut down under pressure from the state and the Centers for Disease Control and Prevention (CDC), but not before more than a thousand workers were infected and four died.²⁶ To add insult to illness, both the company and government officials refused initially to accept that the disease was being spread at the Smithfield facility, asserting instead that the problem was the workers’ living conditions (Schlosser 2020). There are many other similar examples—another Smithfield plant in St. Charles, Ill., eventually closed by a county health department (Freishtat 2020); a Tyson plant in Iowa where at least a thousand out of 2,400 workers have tested positive for the virus and more than five have died (Associated Press 2020a); and several poultry plants on the Eastern Shores of Maryland and Virginia (Dance 2020). Overall, as of Oct. 15, 2020, according to the Food and Environment Reporting Service (FERN), meat- and poultry-processing workers had experienced more than 45,588 cases of COVID-19 and at least 215 deaths (Douglas 2020).

In September 2020, OSHA finally began issuing citations, generally at the very end of the six months it is allowed to take. One of those citations was to the South Dakota Smithfield plant described above, for exposing workers to COVID-19 in March (OSHA 2020h). Another was to a JBS meatpacking plant in Colorado (OSHA 2020k). Those two citations comprise the *only* times OSHA has alleged violations of its general duty clause,²⁷ which requires employers to provide their workers with a workplace “free of recognized hazards that are causing...death or serious physical injury.” The availability of this clause was the primary basis on which the D.C. Circuit Court upheld OSHA’s refusal to issue an emergency temporary standard. OSHA proposed civil penalties of under \$14,000 for each of the two general duty clause violations, amounts that would not even be noticed by these multibillion-dollar firms.²⁸ The other citations OSHA has issued have all been to health care facilities, mostly nursing homes, and mostly for violations of its respiratory protection standard or its record-keeping regulations (OSHA 2020b).

This near-total abdication of responsibility by OSHA for keeping workers safe highlights

one of the primary limitations of the OSH Act. It can only be as effective as the political actors running it allow it to be. As the pandemic crisis of 2020 made clear, when political actors are unwilling to use their authority to the extent necessary to protect workers, the workers are left to their own devices. For example, the Amazon workers at the Staten Island warehouse later tried another tactic, filing a “public nuisance” action arguing that Amazon’s failure to take appropriate steps to keep virus spread to a minimum exposed not only them but also their families and other community members to unnecessary risk.²⁹ They alleged further that Amazon’s actions not only created a public nuisance but also violated provisions of New York state law.³⁰ This “public nuisance” theory has been tried in a few other cases around the country, including one in Missouri, where a judge dismissed the case based mostly on the fact that OSHA had “primary jurisdiction” to enforce safe practices at the meatpacking facility at issue there. According to the court, “only deference to OSHA/USDA [U.S. Department of Agriculture] will ensure uniform national enforcement....”³¹ This decision could be seen as a cruel irony in light of OSHA’s general inaction on this issue. Other workers’ families have brought wrongful-death actions against the employers of workers who have died from the virus (Hussein and Diaz 2020).

After their complaints to OSHA of an imminent danger of COVID-19 exposure at their meatpacking plant garnered no response, one group of workers took the unprecedented step of filing a lawsuit to require OSHA to issue an imminent danger injunction (Yeung and Grabell 2020; U.S. District Court Middle District of Pennsylvania 2020). In proceedings in the case, OSHA acknowledged that it was not treating *any* complaints at meatpacking plants as imminent dangers.

Of course, workers with union representation are better able to obtain the protections they need. First, virtually all union contracts include safety and health provisions and provide workers with representation to help them challenge discipline. Thus, unionized workers are in a better position to insist that their employers take the precautions necessary to protect them, although even this advantage is not always enough. One worker at a New Jersey meatpacking plant wrote a *New York Times* op-ed explaining how her union, the Food and Commercial Workers union, had demanded better safety protections, and how the JBS plant where she worked had then shut down to remodel the processing floor and obtain more PPE, so that the workers could “feel a bit more secure” (Dominguez 2020). Unfortunately, these changes came too late for two of her colleagues who died of infections they had contracted before the restructuring. Other unions, representing auto workers, telecommunications workers, delivery workers, and more, have also been able to negotiate protections for their members (Engdahl 2020).

But few workers, currently about 7% of the private labor force, are members of unions and able to take advantage of this ability; the rest remain at the mercy of OSHA enforcement or the lottery of private litigation. It should also be obvious that competitive market forces—employers competing for workers and workers quitting unsafe workplaces—have not disciplined employers who fail to protect workers.

Workers’ access under the OSH Act to

accurate information about injuries and illness at their workplaces and to appropriate medical treatment

To be able to complain about or avoid hazards at their workplaces, workers need to know where those hazards exist. Employers also need this information to meet their obligation to provide safe workplaces, and OSHA needs it to decide how best to allocate its enforcement and regulatory resources.³² In cases involving a highly contagious infectious disease and widespread common-sense protections against it, the hazards may be obvious. In other situations, they are not. To address these concerns, Congress directed OSHA to promulgate rules requiring employers to maintain accurate records of all work-related deaths, injuries and illnesses “other than minor injuries requiring only first aid treatment,” and worker exposures to hazardous substances, and to provide workers with information from those records.³³ Much of the collection, compilation, and analysis is carried out by the Bureau of Labor Statistics, another Department of Labor agency; OSHA only recently began requiring some of these data to be submitted to it directly.³⁴

OSHA’s record-keeping regulations explain that reportable injuries and illnesses are those that require medical treatment or time away from work.³⁵ Unfortunately, there are many incentives for employers to keep their reported injury rates low. The first, unsurprisingly, is money. Employers are required to pay for treatment of work-related injuries, either themselves or through their workers’ compensation insurance, with insurance rates likely to rise as more claims are made. There are also less obvious incentives. Large corporations, particularly those owned by shareholders or associated with public-facing brands in competitive industries, want to appear responsible and humane. Reputational capital has a value, even if it is not as easily monetized as medical treatment. One of the casualties of these incentives is the ability of workers to receive prompt and appropriate treatment for their injuries.

Clearly, the best way for employers to keep reported injury rates low is to keep actual injury rates low by improving safety conditions. But that requires major investments (in equipment, training, or even additional staff), and some employers figure out ways to take shortcuts that shortchange their workers’ health and safety.³⁶

Another way to keep reporting low is to cow workers into silence. Some of the best-documented uses of intimidation to reduce reporting of worker injuries existed in the railroad industry for many years. These practices were so pervasive and well-recognized that they led in 1989 to a government report recommending that the Federal Railroad Administration (FRA) promulgate regulations to improve injury reporting (General Accounting Office 1989). The FRA proposed such rules in 1994,³⁷ and promulgated and reaffirmed them after reconsideration in 1996.³⁸ The final rule explained that the “FRA has become increasingly aware that many railroad employees fail to disclose their injuries to the railroad or fail to accept reportable treatment from a physician because they wish to avoid potential harassment from management or possible discipline that is sometimes associated with the reporting of such injuries.”³⁹ These rules helped but did not solve the

problem, and it became the subject of investigations by both the Department of Transportation and the House of Representatives Committee on Transportation and Infrastructure. According to a congressional committee report, “employees generally perceive intimidation to the extent that those who are injured in rail incidents are often afraid to report their injuries or seek medical attention for fear of being terminated or severely disciplined. Many of the reports compiled by staff suggest that railroad employees often find themselves the targets of a higher degree of management scrutiny immediately after filing an injury report.”

As a result, in 2009 Congress enacted the Federal Railroad Safety Act (FRSA),⁴⁰ which responded to Congress’ explicit recognition that workers feared that reporting injuries to their employers would threaten their jobs: “[E]mployees generally perceive intimidation to the extent that those who are injured in rail accidents are often afraid to report their injuries or seek medical attention for fear of being terminated or severely disciplined.”⁴¹ The act said that railroad employers could not “deny, delay, or interfere with the medical or first aid treatment” of an injured railroad worker, or “discipline, or threaten discipline to, an employee for requesting medical or first aid treatment, or for following orders or a treatment plan of a treating physician.”⁴²

The FRSA has been a great benefit to railroad workers, but they are not the only workers whose employers try to limit their ability to report injuries or to obtain appropriate medical treatment. The intimidation tactics the railroads used are also used by other types of employers, often with the assistance of onsite medical personnel. Because injuries requiring only first-aid treatment are not “recordable,”⁴³ there is a long history of misclassifying many of the medical services employers provide as first aid.

This misclassification is particularly the case in industries involving the types of awkward and repetitive movements and heavy lifting that are likely to result in musculoskeletal disorders (MSDs), the type of strains, sprains, and similar injuries that make up almost one-third of reported injuries in American workplaces.⁴⁴ OSHA has been aware for decades that businesses with high levels of ergonomic stressors have tried to reduce their rates of recorded injuries, sometimes through questionable means. As long ago as the 1980s, during the Reagan and George H.W. Bush administrations, OSHA citations for ergonomic hazards included allegations of medical mismanagement of the resulting injuries. These citations, issued in a variety of industries including poultry, meatpacking, and manufacturing, were frequently combined with record-keeping citations containing similar allegations. Virtually all of these cases were settled, with the settlements including explicit requirements for appropriate medical management. According to reports, at least some of these settlements resulted in vastly improved conditions.⁴⁵

When the Clinton administration took office in 1993, it undertook more systemic regulatory approaches to ergonomic hazards and record-keeping deficiencies. Unfortunately, neither its ergonomics standard nor the musculoskeletal injury provisions of its record-keeping rule survived the George W. Bush administration, which also gave ergonomic enforcement a low priority. It was not until the 2010s, during the Obama administration, that OSHA again began to examine these issues as part of its focus on vulnerable workers. In doing so, OSHA discovered some particularly pernicious employer practices.

In many large workplaces, employers maintain onsite health clinics at which injured or ill workers are required to report occupational injuries and receive initial treatment. Some of these clinics undoubtedly provide excellent care. Others, however, are inadequately staffed by licensed practical nurses (LPNs), emergency medical technicians (EMTs), or even athletic trainers, none of whom are licensed to practice independently or are supervised appropriately; their work often appears intended primarily to limit reportable injuries.⁴⁶ There is a long history of employers misclassifying all of the activities at these clinics as first aid, even though many of the services provided are medical services and not first aid.

Workers are captive patients at these clinics, sometimes risking disciplinary action if they seek other medical care. For example, workers have been required to sign documents acknowledging that they may be discharged for seeking independent medical care for workplace injuries. And although many of these facilities are neither staffed nor supervised by appropriately licensed medical personnel, they nevertheless provide actual medical care, including diagnosis, evaluation, and treatment, and do not refer injured workers for appropriate care in a timely manner. They generally follow some kind of protocols, usually prepared by physicians, but not physicians with an ongoing relationship with the clinic and sometimes not even licensed in the appropriate jurisdictions (Tustin et al. 2018).

In the 2010s, OSHA inspected a number of these workplaces, one of the first of which was a Wayne Farms poultry-processing facility in Alabama. Workers at the plant were required to sign a statement acknowledging that they must seek medical care for any workplace injury through an onsite “nursing station.” During the investigation, which was initiated in response to a complaint filed by the Southern Poverty Law Center, OSHA discovered that when workers went to the nursing station, which was staffed only by two LPNs, they were generally given aspirin or other nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen (Motrin, Advil) or naproxen (Aleve), and discouraged from seeking further medical treatment. They were also disciplined for reporting injuries and for leaving work to obtain appropriate medical care. For example, one worker went to the nursing station while suffering a heart attack; the LPN on duty gave her aspirin but refused the worker’s request to send her to an emergency room. The worker later left work with her daughter (a fellow employee) to go to a hospital, and despite the hospital agreeing that she needed emergency care, she and her daughter were both disciplined for leaving work early (SPLC 2014).

OSHA found numerous other instances in which nursing station staff failed to refer workers for appropriate care, either in a timely manner or at all, especially for MSDs. In one case a worker visited the nursing station *94 times* for the same disorder before being referred to a physician (OSHA 2014a). The in-house treatment these workers received in the meantime was based on medical directives and algorithms that were out-of-date, contrary to good medical practice, and potentially harmful to the workers. It included protracted courses of NSAIDs, which pose their own risks, including gastrointestinal bleeding, heart attacks, and strokes, if they are used too long, and treatment with pyridoxine (vitamin B6), which has been determined to be ineffective for the conditions for which it was used. Workers were also sent back to the precise job tasks that had caused their injuries, preventing the injury from healing and possibly leading to even worse injuries (OSHA 2014a).

In addition, during the two months OSHA compliance officers were inside the facility performing their inspection, OSHA documented eight separate instances in which Wayne Farms failed to record injuries of its workers; the citation also included allegations of numerous ergonomic hazards that were responsible for the many musculoskeletal injuries the workers suffered (OSHA 2014b).

The actions of the nursing unit at Wayne Farms were not unique, or even unusual. In 2016, OSHA issued a citation to Pilgrim's Pride Corporation alleging similar actions, or nonactions, at a poultry-processing plant in Live Oak, Fla. According to OSHA, the Pilgrim's Pride Occupational Health Services unit (also staffed only by LPNs and a paramedic, without medical supervision) "failed to make timely medical referrals for employees with injuries related to chronic and acute exposures and incidents, heavy lifting and persistent and continuous pain...to prevent the development and/or minimize the severity of musculoskeletal disorders." A Mountaire Farms processing plant in Delaware was also found to have excessive delays in physician referrals and to have required its staff of LPNs and EMTs to perform medical services beyond the scope of their licenses. Thus, as well as endangering the health of their line workers, these employers also put at risk the licensure and ability to make a living of their medical workers.

Similar conditions exist at warehouses and fulfillment centers, where the work is similar to poultry processing in many ways. Both are generally low-skilled operations, placing a premium on speed, lifting, and awkward postures, conditions almost guaranteed to produce high levels of musculoskeletal injuries. At Amazon warehouse and fulfillment centers, workers injured on the job must first seek care from Amazon's AmCare onsite medical units. Generally staffed by EMTs and athletic trainers, these units are described as first-aid centers, but, like the health rooms at poultry-processing plants, they perform a significant amount of medical care and delay worker visits to doctors. Amazon workers have filed a number of complaints about the care they receive at these clinics, and OSHA has investigated several of them. The problems found are strikingly similar to those found at the poultry plants.

During a 2015 inspection of an Amazon fulfillment center in Robbinsville, N.J., OSHA found that, during a four-month period, Amazon failed to record at least 26 injuries, nearly all of them MSDs (OSHA 2015b). Unsurprisingly, OSHA also found numerous ergonomic hazards and warned Amazon of the need to correct them (OSHA 2015c). It also found that the facility's AmCare unit, staffed entirely by EMTs, was "providing medical care beyond first aid," including "clinical history, physical examination, assessment and management plan" (OSHA 2015a). This, OSHA pointed out, was "outside [the staff's] licensing and certification." Despite being directed to respond to these concerns, Amazon "blew off" the suggestions (Brown 2019). A subsequent inspection in 2019 found the same problems at the same AmCare unit, by now staffed with athletic trainers as well as EMTs but still without appropriate supervision (Brown 2019). OSHA's new hazard alert letter pointed out six specific cases, during the four-month span covered by the inspection, in which the AmCare staff had not only delayed referrals for appropriate medical care but had denied specific requests by injured workers for referrals. In fact, the only significant change in the years since the 2015 inspection was that the AmCare "conservative care protocols" guiding the AmCare staff now allowed the staff to treat injuries for 21 days before referral

to a licensed health care provider, instead of the 14 in effect in 2015.

This facility was in no way an outlier. OSHA found similar practices at facilities in Florence, N.J., and Lebanon, Tenn., although it noted that the AmCare protocols in place in Tennessee limited the time staff could treat injuries without a referral to only 10 days. A former AmCare employee in Arizona alleged that he was discharged because he was unwilling to delay referring workers for appropriate medical care; in one case he had sent a worker with chemical burns to a hospital (Brown 2019). A number of former workers have filed complaints with the California Department of Fair Employment and Housing, alleging that AmCare refused to send them for appropriate medical treatment; two claimed they were fired either because of the request or because of missing work as a result of the untreated injury (Brown 2019). And many workers and former workers have described the lengths Amazon managers would go to in order to avoid recording injuries (Evans 2019).

Workers at both warehouses and poultry plants have described feeling as though their employers consider them “disposable”—that the companies use them up and then discard them when they can no longer work (Riley 2019; SPLC 2014). This can indeed be the case because musculoskeletal injuries can have long-term consequences and render those afflicted less employable. Workers suffering from MSDs, especially untreated ones, frequently end up permanently disabled and having a hard time with even the activities of daily life—much less those required by another job with heavy physical demands. And for the low-skilled workers who work at these facilities, there are likely to be few other decently paid jobs available. Nor is workers’ compensation likely to afford these injured workers adequate recompense.⁴⁷ And given OSHA’s reluctance during the Trump administration to enforce employers’ obligations to provide workplaces free of recognized ergonomic hazards and not to mismanage workers’ medical treatment, workers had little ability to reduce hazards or to obtain appropriate medical care. This lack of protection is in marked contrast to the protections railroad workers have. And the reason is clear: The railroad workers are represented by powerful unions, powerful enough to have access to both Congress and executive branch officials. But Amazon’s hostility to unions is well-known, and only a few of the poultry workers have union representation (Wingfield 2016; Bray and Hoffman 2020). On the other hand, these employers have enormous economic and political power. Amazon is currently the second-largest employer in the U.S., and 80% of poultry production is now concentrated among only 10 companies, many with significant political influence (Mayer 2020).

Structural limits on OSHA enforcement

In the context of the federal government, OSHA is a tiny agency. It has a total staff of about 2,000 at the best of times, of whom fewer than half are assigned to inspect workplaces.⁴⁸ The number of inspectors—referred to as compliance safety and health officers, or CSHOs—has fluctuated over the decades, reaching highs of more than 1,400 in the late 1970s, remaining around 1,000 most of the time, and declining significantly over the last few years. OSHA began 2020 with 862 CSHOs, the lowest number in its history.

At the same time, the number of workers OSHA is expected to protect has continued to grow with the economy, and employment has doubled between 1970 and 2019;⁴⁹ there are now twice as many workers as there were in the early 1970s. This means that, even when OSHA has the political will to engage in robust enforcement, there will always be practical limits on how many workplaces it can affect directly.

Although OSHA has used various methods to focus its resources on the most endangered workers, many workplaces and hazards will inevitably evade enforcement. Often these are small workplaces, which slip through regulatory and reporting cracks; other times they are workplaces that employ workers who feel too vulnerable to report hazards. These workers include refugees and other immigrants, documented or not, whose limited English abilities leave them less aware than others of their rights in this country.

The employers who do not comply thus often exploit the most vulnerable workers. One particularly horrific example occurred in Houston in the 1990s. A businessman named Eric Ho bought an abandoned hospital that he intended to convert into apartments. At the time of purchase, he was notified that the building contained a substantial amount of asbestos and that removal of the asbestos could cost as much as \$400,000. Ho then obtained an abatement estimate of \$325,000 from a licensed asbestos abatement contractor. He rejected even that bid as too high, and instead hired his sometime handyman and another man to supervise the project. They in turn hired 10 undocumented immigrants to do the actual work. Ho visited the building every day himself.⁵⁰

OSHA's asbestos standard requires specific actions to protect asbestos-exposed workers.⁵¹ Among other things, employers must train the workers on the hazards of asbestos exposure and how to protect themselves, must provide the workers with appropriate protective clothing and respiratory protection, must use appropriate ventilation and wet methods to reduce asbestos dust, must monitor asbestos levels regularly, must conduct medical surveillance of the exposed workers, and must dispose of asbestos waste properly. Neither Ho nor his "supervisors" ever even told the workers at this project that they were exposed to asbestos, nor did they comply with any of the other provisions of the standard. About a month into the job, a Houston building inspector visited the site and issued a stop-work order; instead of stopping work completely, however, Ho stopped it only during the day; he had the workers move into the building and continue working at night for the next five weeks. There was no running water in the building and only one portable toilet. Ho and one of his supervisors brought the workers food (and collected money from them for it).

More than two months into the project, when the asbestos removal work was complete, Ho told one of his supervisors to open what he believed was a water valve on the outside of the building and (finally) wash down the inside. But the valve was actually for a gas line, and when the supervisor started a truck he had parked next to it, the gas exploded, injuring him and two of the workers. Adding insult to injury, the next day Ho called the workers to his office where he had them sign documents "acknowledging receipt of \$100 to release Ho from any claims that might arise from the explosion and fire."⁵² Nonetheless, both OSHA and the Environmental Protection Agency were able to take enforcement actions, and Ho was eventually assessed a civil penalty by OSHA and sentenced to prison

for the environmental violations. Neither of these actions, however, ameliorated the danger to the workers' health caused by Ho's violations.

The Ho case is not unique. A few years later Joe Kehrer, a roofing contractor in Ohio, bought an abandoned school, which he planned to convert to residential use. Like Ho, he also used a group of Mexican nationals, although in this case the workers were in the country legally under temporary work visas to work for Kehrer's roofing company. Nonetheless, most spoke no English and, like the Houston workers, they were not told about the hazards of asbestos removal, they were not provided with appropriate ventilation or protective equipment, they were required to use dry methods to remove the asbestos, and they were not provided with medical monitoring.⁵³ In this case, though, one Kehrer worker was concerned enough to contact OSHA, so the conditions were discovered within only one month. Like Ho, Kehrer was eventually sentenced to prison for environmental (not OSHA) violations (Muslic 2018).⁵⁴

Another example involved Fiberdome, a company that hired prisoners to perform work alongside its regular employees at a fiberglass manufacturing facility. The workers were exposed to the highly hazardous chemical styrene while working in unventilated booths, and at least two prisoners ended up in the hospital suffering symptoms of overexposure (Berzon 2013; see also OSHA 2013a and Hosier 2013). Although OSHA has a standard for styrene, it is one of the original permissible exposure level (PEL) standards and is widely regarded as out of date, even by the Styrene Information & Research Center, an industry trade association. Fiberdome was complying with the PEL, but its workers were still exposed to concentrations that sickened them, and OSHA only learned of these conditions because a doctor who treated the hospitalized prisoners contacted the agency. Prisoners may be the nation's most vulnerable workers—they have virtually no ability to file complaints or take self-help actions. In this case, OSHA also heard that the employer supplied respirators to its own employees but not to the prisoners. After issuing a citation, OSHA eventually reached a settlement in which the employer agreed to limit exposures to the level recommended by its trade association (*Daily Jefferson County Union* 2014).

Businesses are also able to avoid OSHA enforcement of rules relating to worker use of bathrooms. The ability to relieve oneself when necessary seems to most Americans a basic human right, and the vast majority of us would be appalled at the idea of having to ask permission to visit a restroom or having to wear a diaper to work because we are not allowed timely use of a toilet. OSHA standards explicitly only require employers to have adequate toilet and handwashing facilities for their workers, and for many years that's all that OSHA enforced.⁵⁵ Eventually, however, OSHA recognized that the standards were meaningless unless workers were allowed to use these facilities when necessary. Thus, for the last quarter century OSHA has interpreted the standard to mean that employers may not impose unreasonable restrictions on restroom use and that they must ensure that necessary restrictions, such as the use of a key or a signaling system to allow workers to be replaced at their work stations, may not cause the workers extended delays. Workers at mobile or outdoor worksites must have access to sanitary facilities within a 10-minute drive (construction workers) or a quarter mile (agricultural workers) (OSHA 2020).

Despite these rules, it has been difficult to make toilet access an enforcement priority, at

least partly because of embarrassment on the part of both workers and inspectors to raise the issue. But in recent years, OSHA became aware of significant evidence that many workers are not allowed adequate access to sanitary facilities, particularly in the poultry- and meat-processing industries. In one poultry plant, 79% of workers on the processing line reported being unable to take bathroom breaks when they needed to (SPLC 2014). Workers said they were often afraid to insist on their requests because they had seen their colleagues disciplined for making safety and health complaints. In addition, many workers in this low-paid industry are immigrants, some undocumented, who feel particularly vulnerable to retaliation, especially in an era of increased immigration enforcement; as a result, these workers feel that they have no choice but to relieve themselves on the line or risk kidney and urinary tract infections (Jordan 2019).

In rare cases, OSHA learned of these situations and addressed them. The most recent example is *Secretary v. Swift Pork Co.*,⁵⁶ which was initiated when OSHA cited Swift Pork for imposing, in a new “Time Away from Line” policy, unreasonable restrictions on its meat-processing workers’ use of toilet facilities. Among other things, workers had to seek permission to use a restroom and wait for their supervisor to approve the request. There was no requirement that supervisors do so, and workers often waited for a long time before receiving permission, if they did. In addition, asking for permission more than once a day could subject workers to discipline. Swift Pork responded to the citation by seeking a pretrial ruling that OSHA’s 20-year-old interpretation of the standard to allow reasonable access to toilet facilities was an improper amendment by the secretary (OSHA 1998). After an administrative law judge ruled against it,⁵⁷ Swift Pork agreed to settle the case by, *inter alia*, amending the policy to make clear that workers who sought to use the toilet must be allowed to do so within 20 minutes.

This situation arises not only in meat and poultry facilities: OSHA has also issued citations to several manufacturing facilities, although these have generally not been contested and so did not result in reported cases. Workers at Amazon fulfillment centers describe having time they spent on bathroom breaks marked as “time off task,” too much of which may lead to discipline;⁵⁸ one worker described suffering from urinary tract infections in order to meet her productivity goals (Evans 2019). (For an exhaustive review of this issue, see Linder 2003).

And the problem arises in many situations that OSHA never discovers. In another example of how little power low-level workers have over their own working conditions, a recent *This American Life* (2018) episode described how female airport security workers were routinely harassed by their male supervisors by being denied access to toilet facilities. Some of the workers eventually filed private harassment lawsuits, but there is no indication that they ever realized they also had a legal right to bathroom access.

Employers like the ones discussed above may be in the minority, but we have no real idea how often these situations occur. Only *Swift Pork* and the Kehrer asbestos case involved a worker complaint; none of the others would have been discovered by OSHA in the normal course of business. It was also no accident that many of the affected workers in these instances were particularly vulnerable: undocumented, working on a visa linked to their employer, or in prison. Their employers felt no compunction about failing to train them or

to provide appropriate protective equipment, most likely in large part because the employers did not believe the workers would have the resources to complain or seek redress from authorities or have the freedom to speak up since doing so would put their jobs at risk.

The arduous task of creating or updating OSHA standards

As noted above, a significant contributor to OSHA's failure to achieve its potential has been its inability to promulgate new and updated safety and health standards. This inability is most pronounced in the case of standards intended to protect against occupational diseases caused by chemical exposure, which kill up to 100,000 American workers and retirees every year, a number that dwarfs the 5,000-6,000 who die in accidents (Takala 2014). The substances workers are exposed to include such well-known hazards as asbestos, lead, and silica, as well as less recognized chemicals such as bisphenol A (BPA) and isocyanates. There is a huge disparity of knowledge about these hazards between workers and employers, with workers much less likely to realize that their exposures are dangerous. But industry knows about the hazards of the chemicals it uses, and it often tries to keep this knowledge from its employees.

Many of these substances, especially dusts, harm workers in a particularly cruel manner. Inhaling certain respirable dusts causes a class of lung diseases known as pneumoconioses—progressive, irreversible diseases that often lead to lung impairment, disability, and premature death. They manifest gradually, so that workers are often unaware of what is happening to them and what is causing it. They may first notice only mild shortness of breath on slight exertion, but the diseases progress to the point at which the workers are unable to exert themselves at all and need supplemental oxygen to breathe. Sufferers describe the frustration of being unable to perform normal life activities such as playing with their children and grandchildren (OSHA 2013b). According to the National Institute for Occupational Safety and Health (NIOSH), the occupational conditions causing these diseases are entirely man-made and can be avoided through appropriate dust control (CDC-NIOSH 2011). Coal workers' pneumoconiosis, better known as black lung disease, is probably the best-known of these diseases, but silicosis, caused by exposure to silica dust, is more widespread. Because the diseases are disabling, the affected workers are less able to find a new job free from the dangerous exposures. Occupationally caused cancers may have an even longer latency period, making it difficult to link any case to a specific earlier exposure and helping employers avoid liability.

OSHA standards to limit workers' exposure to many hazardous chemicals and provide workers with information on how to protect themselves from harmful exposures⁵⁹ have had a positive effect. Lead poisoning, asbestosis, and asbestos-caused mesothelioma used to be common occupational illnesses but have become much less so. But OSHA's effect on occupational disease is at best mixed. The 27 health standards it has adopted over 50 years have generally been successful in reducing harm caused by the hazardous substances they regulate; the problem is that there are so few standards.

The story of occupational silica exposure provides one of the best examples of both the limits and the benefits of OSHA regulation, and also of the ways in which entrenched business interests are able to leverage their power to delay and weaken OSHA regulation of harmful chemicals. Exposure to airborne silica causes a number of harmful effects, most recognizably acute and chronic silicosis but also lung cancer and other lung diseases. Acute silicosis, which results from extremely high exposures, may develop and lead to death within months. Much more common are chronic silicosis, a disabling lung disease that develops over years of exposure, and lung cancer, which may take decades to manifest. We have known about the danger of silicosis since at least the time of the Greeks, although in the early 20th century the discovery of the tuberculosis bacilli caused many cases to be misdiagnosed as tuberculosis⁶⁰ (Markowitz and Rosner 2006). In the first third of the 20th century, as pneumatic tools and other dust-generating technologies became more widely available, instances of silicosis began to rise.⁶¹

Silicosis first came to widespread attention in this country in the 1930s as a result of the construction of Union Carbide's Hawk's Nest tunnel in Gauley Bridge, W.Va. The Hawk's Nest story is a perfect example of how an unregulated labor market exploits workers, particularly in a period of high unemployment and without much of a social safety net (Cherniak 1986).⁶² The tunnel went through rock that was almost pure silica, and in the depths of the Great Depression thousands lined up for jobs. The workers were not provided with any protective equipment and they used dry drill bits, even though it was well-known at the time that this practice increased the amount of dust.⁶³ Black workers (about 60% of the 5,000-man workforce) were not only paid significantly less than their white colleagues, they were also more likely to be assigned the most dangerous drilling jobs, and they died in disproportionately high numbers (about 75% of the total deaths).⁶⁴ The exact number of workers who died of acute silicosis during the less than two years of construction is unknown but is generally believed to be over 700. Many more (one estimate is 1,500) developed chronic silicosis, which doubtless shortened their lives, but their conditions and outcomes were not tracked. In all, more than half the workers at this project suffered the effects of silica exposure.⁶⁵

When the Hawk's Nest death toll was brought to the public's attention during congressional testimony in 1936, then-Secretary of Labor Frances Perkins initiated the federal government's first Stop Silicosis campaign. It included recommendations for reducing silica exposure, primarily by using water and ventilation, the same control methods used today (Xo Safety 2018). The Labor Department also convened two national silicosis conferences in 1936 and 1938 that resulted in the department's Bureau of Labor Standards adopting a standard that fell short of providing adequate protection; it was derived from an industry recommendation originally developed to help shield employers from liability. In the 1930s, the government lacked the regulatory authority to require compliance by most employers even with this standard, so workers continued to suffer the consequences of exposure to even higher levels of silica. And despite improved technology and growing evidence of the damage silica exposure causes, this standard provided the only legal protection to 90% of silica-exposed workers until 2017. At the same time, industry promoted the idea, through the 1940s and beyond, that silicosis was "a disease of the past," that current techniques and equipment kept exposure under control,

and that only workers who had been exposed to dusty conditions earlier in their careers would suffer from it (Markowitz and Rosner 1998). This industry and medical community complacency in these decades meant that the disease was rarely recorded on death certificates, and so there is no way to know exactly how widespread it was.⁶⁶ Nonetheless, in 1968, the American Council of Governmental Industrial Hygienists updated its silica threshold level values to reduce its recommended exposure by 50-75% and to eliminate the TLVs' reference to an obsolete sampling method.

Silica returned to national consciousness at about the same time the OSH Act took effect in 1970 and gave birth to OSHA and its sister agency NIOSH. The institute was created to be a research body, and one of its earliest tasks was to develop "criteria documents" that would provide OSHA with information on hazardous chemicals so that OSHA could regulate them. One of NIOSH's first studies, of sandblasting and silica exposure, revealed extensive silicosis among workers involved in these activities and found that "the protection afforded [workers by their protective equipment] is, on the average, poor" (Blair 1974).

At the same time, OSHA was adopting its startup standards, which included the original silica limits. Due to a quirk of timing, however, only the standards applicable outside of the construction and maritime industries included the updated 1968 TLVs. The construction and maritime standards, which covered 90% of the country's silica-exposed workers, remained at the original 1936 levels.⁶⁷

In 1974, NIOSH issued a criteria document recommendation that OSHA reduce its silica standards to 50 µg/m³ (half of the then-existing level for general industry and 12-25% of the level for construction and maritime) and adopt various ancillary provisions, including exposure monitoring and medical surveillance for exposed workers (CDC-NIOSH 1974). Based on the NIOSH recommendation, OSHA published an advance notice of proposed rulemaking.⁶⁸ Silica-using industries responded by creating a new industry group called the Silica Safety Association; its stated purpose was to "investigate and report on possible health hazards involved in [the] use of silica products and to recommend adequate protective measures considered economically feasible," but its true purpose, as made clear in its fundraising solicitations, was to ensure that OSHA did not adopt the NIOSH-recommended standard (Markowitz and Rosner 1998, 306). The group was successful enough that no proposal or final rule was issued in the 20th century, a result helped significantly by the anti-regulatory bias of the Reagan and Bush I administrations.

Although silica fell out of the regulatory spotlight after 1980, it did not stop sickening workers, and in the 1990s, under the more worker-friendly Clinton administration, OSHA again began to pay attention to the substance by convening, along with NIOSH and the Mine Safety and Health Administration,⁶⁹ the 1997 Conference to Eliminate Silicosis. At the same time, OSHA increased enforcement of its existing silica standards and announced plans to begin rulemaking on more up-to-date ones.⁷⁰ The industry responded with the creation of yet another new group, the Silica Coalition, formed in anticipation "of OSHA rulemaking to control worker exposure to crystalline silica dust in the not-too-distant future" (Markowitz and Rosner 1998, 311). OSHA's work over the next few years included holding stakeholder meetings and beginning preparation of the analyses needed for any

new standard. Again, though, politics intervened. When the George W. Bush administration came into office in 2001, regulatory activity slowed across the board. Indeed, a high-level appointee at the Labor Department was heard to say that the Bush administration would propose a silica standard “over my dead body.”⁷¹

Work on a silica standard resumed when the Obama administration came into office in 2009, but, because of the resource-consuming analyses that OSHA must perform before it can promulgate a health standard, it was not until September 2013 that the proposal was published⁷² and the rulemaking kicked into high gear. That process involved three weeks of public hearings and the review of more than 2,000 separate comments from industry, public health experts, and unions and other worker-protection advocates supporting the proposed standard, opposing it, or suggesting modifications. Analysis of this massive record and preparation of the final rule involved the full-time work of more than 50 scientists, engineers, lawyers, economists, and other professionals in OSHA and other Labor Department agencies as well as the department’s political leadership. The resulting standard and partial analyses consumed more than 600 pages of the *Federal Register*.⁷³ Additional analyses of equal length performed to comply with executive orders, the Small Business Regulatory Enforcement and Fairness Act, and the Regulatory Flexibility Act were not published but are available in the record. Even then the standard was not official; it needed to undergo review by the Office of Information and Regulatory Affairs, a process that took three months.⁷⁴

Promulgation of the standard was a victory, but not a final one. Industry opponents challenged the standard in court as the Trump Administration was about to take office. However, approximately a year later, in December 2017, the U.S. Court of Appeals for the District of Columbia Circuit issued a decision rejecting all of the industry challenges and upholding the standard completely.⁷⁵

The standard is now fully in effect, protecting almost 7 million⁷⁶ U.S. workers from overexposure to silica. How long the process took depends on what one considers the start date to be: nine years if it’s 2009, the beginning of concentrated work on the proposal during the Obama administration; 20 years if it’s 1997, the year OSHA’s announced it would issue a proposal; 43 years if it’s 1974, the year of NIOSH’s recommendation and OSHA’s advance notice of rulemaking; or 80 years if it’s 1937, the year of Frances Perkins’s promise to “stop silicosis.”

The impact of the standard on the construction industry has been dramatic. Construction trade shows and websites are filled with ads for equipment that will enhance compliance (see, e.g., *Construction Equipment Guide* 2018), and a casual observer of demolition and construction sites will see much more use of water sprays to suppress dust.

Outside of construction the standard did not take full effect until 2018, but that turned out to be particularly timely. The CDC recently reported a significant rise in the number of acute silicosis cases, concentrated among workers exposed to silica while manufacturing “stone” or “quartz” countertops (Rose et al. 2019), and affected workers quoted in news reports on the CDC analysis pointed out that work practices have improved in the last two years, i.e., after the OSHA standard took effect (Greenfieldboyce 2019). Still, many of the

employers fabricating these materials are the kind of very small businesses that have historically been slower to comply with OSHA standards.

Most employers, however, comply with OSHA's health standards. After insisting during rulemaking proceedings that the costs of compliance will destroy their industries, employers nearly always find a way to comply, often discovering that the adjustments needed to meet a standard's requirements have the additional effect of making their operations more effective (see, e.g., OSHA 2000). Business is often bolstered because equipment manufacturers see new standards as marketing and sales opportunities, as they design new equipment to make compliance by employers easier, if not automatic (OSHA 2000). As is true of most OSHA standards, once this one took effect, complaints about its requirements dropped dramatically.

Conclusion

Although the OSH Act became law with the highest of hopes, it has not succeeded in empowering workers to secure their freedom from injury, illness, or death associated with work. There have been some notable successes under the law, but the lack of adequate resources and political support, combined with structural weaknesses in the statute and the changing nature of work in the 21st century, have resulted in dashed hopes and a continuing stream of powerless, injured, and ill workers. Many workers still do not have a meaningful right to refuse to accept dangerous assignments or even to protect themselves when they accept those assignments, they are still sickened by exposure to dangerous chemicals, they still must accept the indignity of not being able to take bathroom breaks when necessary, and they still struggle to obtain adequate medical care for work-related injuries and illnesses. If it's true that workers possess the market power to quit unsafe jobs and find better work, that power has not been sufficient to deliver their most basic demand: safe working conditions.

Endnotes

1. 29 U.S.C. 651 et seq.
2. The more conventional view that workers in high-risk occupations receive some sort of hazard bonus pay for their willingness to do these jobs is belied by evidence that the lowest-paid workers are the most likely to be injured on the job. See, e.g., Baron et al. 2013, showing that more than half the workers in the highest-risk occupations (for nonfatal injuries) in the United States earn low wages; and Marsh et al. 2013. See also the paper in this series by Peter Dorman and Leslie I. Boden, "Risk Without Reward: The Myth of Wage Compensation for Hazardous Work."
3. 29 U.S.C. 655(a).
4. 29 U.S.C. 652(9).
5. Most of these statutes applied only to employers who were government contractors or performed work under federal grants. They include the Walsh-Healey Public Contracts Act, 41 U.S.C. 6501; the Service Contract Act, 41 U.S.C. 6701 et seq.; the Contract Work Hours and Safety Standards Act

(Construction Safety Act), 40 U.S.C. 3701; and the National Foundation on the Arts and Humanities Act, 20 U.S.C. 951. The Longshoremen's and Harbor Workers Compensation Act, 33 U.S.C. 901-950, applies more broadly, but to a fairly small number of workers.

6. 29 U.S.C. §§ 655(b)(1)–(b)(4).
7. 5 U.S.C. § 609. This requirement applies only to three agencies: OSHA, the Environmental Protection Agency, and the Consumer Financial Protection Bureau; 5 U.S.C. § 609(d). Not coincidentally, these are all agencies to which large business interests are particularly hostile.
8. Another part of the SBREFA statute is the Congressional Review Act, 5 U.S.C. 801-808, which gives Congress the ability to disapprove agency regulations, under expedited procedures, within 60 “session days” (a complicated calculation that may result in the 60 days taking as long as eight months) of its promulgation. The act then prohibits the agency from promulgating a rule that is “substantially the same” as the disapproved rule without explicit congressional authorization. As a practical matter, this disapproval is only likely to occur shortly after an election that results in both Congress and the White House being controlled by a different party than that of the president under whom the rule was promulgated. Before 2017, this procedure had been used only once, to vacate OSHA’s 2000 ergonomics standard. To avoid this fate, in 2016 the Labor Department under President Barack Obama promulgated a disproportionate number of important rules in March and April.
9. 5 U.S.C. 601 et seq.
10. See especially the Supreme Court’s decisions in the benzene, *IUD v. API*, 448 U.S. 607 (1980), and cotton dust, *American Textile Mfrs. Institute, Inc. v. Donovan*, 452 U.S. 490 (1981) cases and Presidential Documents, Fed. Reg. 58 1-10 (October 4, 1993).
11. See, e.g., *Marshall v. Pittsburgh-Des Moines Steel Co.*, 584 F.2d 638 (3rd Cir. 1978): (“We have not found, however [that the cited construction crane provision] was mandatory; thus the Secretary could not adopt that rule as a national consensus standard and give it mandatory effect”); *Noblecraft Industries, Inc. v. Secretary of Labor*, 614 F.2d 199 (9th Cir. 1980) (determining that the secretary may have tried to apply a consensus standard to a broader category of work than it was written for).
12. 29 U.S.C. 660(c).
13. 29 C.F.R. 1977.9.
14. See, e.g., *Reich v. Hoy Shoe Co., Inc.*, 32 F.3d 361 (8th Cir. 1994) (worker illegally discharged for complaining to OSHA about chemical leaking into an electrical box); *Perez v. Clearwater Paper Corp.*, 184 F.Supp.3d 831 (D. Idaho 2016) (same; complaint about wood dust); *Perez v. Fayad*, 101 F.Supp.3d 129 (D. Mass 2015) (same; complaint about dental office’s needle disposal method).
15. *Whirlpool Corp. v. Marshall*, 445 U.S. 1 (1980).
16. *Whirlpool Corp v. Marshall*, 445 U.S. at 22.
17. 29 CFR 1977.12(b)(2).
18. 29 USC 660(c), 29 CFR 1977.9.
19. Partly for this reason, both OSHA and the Office of the Solicitor put a significant emphasis on trying to resolve cases before trial. Most whistleblower complaints found to have merit are resolved through settlement.

20. 30 U.S.C. 815(c).
21. See, e.g., *Simpson v. Federal Mine Safety and Health Review Com'n*, 842 Fed.2d 457 (D.C. Cir. 1988).
22. Unlike the rights enumerated above, the right to refuse to work is not explicitly stated in the Mine Act. However, it was recognized by courts under a predecessor statute governing coal mine safety, and Congress made clear in both debate on the act and the Senate report that “[t]he Committee intends the scope of protected activities to be broadly interpreted...and intends it to include...the refusal to work in conditions which are believed to be unsafe or unhealthful.” S.Rep. No. 181, 95th Cong., 1st Sess. 35 (1977), U.S.Code Cong. & Admin. News 1977, 3401, 3435 (Sen. Report); *Simpson, supra* at 458.
23. OSHA also referred 683 complaints to state agencies.
24. 29 U.S.C. § 657(f).
25. *In re: AFL-CIO*, No. 20-1158 (June 11, 2020).
26. See, e.g., *Dickerson and Jordan* 2020.
27. 29 U.S.C. 654(a)(1).
28. OSHA **claimed** that was the highest amount possible, but that is true only because OSHA cited each of the companies for what it called the single hazard of exposing employees to COVID-19. It ignored the fact that this hazard existed at each production line and on each floor of the facilities, which doubtless had different configurations and exposed workers in different ways. In fact, at least in the *Smithfield* citation, OSHA did not mention the actual conditions at the facility at all. Moreover, although the author has seen a copy of the *Smithfield* citation, **OSHA has changed its long-standing practice** and is no longer providing public access to its citations, making it more difficult for the regulated community to know what the precise conditions are that OSHA believes constitute violations.
29. *Palmer et al. v. Amazon*, E.D.N.Y. Case 1:20-cv-02468.
30. Shortly before this paper was published, the court **dismissed** the Amazon workers’ case, relying in part on the “primary jurisdiction” ground that was also the basis of the decision in the *Smithfield* case discussed later in this paragraph.
31. *Rural Community Workers Alliance v. Smithfield Foods*, 459 F.Supp.3d 1228 (W.D. Mo. 2020). See also *Scheiber and Corkery* 2020.
32. See, e.g., 80 Fed. Reg. 45116, 45118-45119 (July 29, 2015); 66 Fed. Reg. 5916, 5916-5917 (Jan. 19, 2001).
33. 29 U.S.C. 857(c). See also 29 U.S.C. § 673(a), requiring the creation and maintenance of “an effective program of collection, compilation, and analysis of occupational safety and health statistics.” Similar if more narrowly focused requirements already existed for discrete industries, including railroads (49 U.S.C. § 20901) (Accident Reports Act), and mines (30 U.S.C. § 813(h)) (Mine Safety and Health Act).
34. 29 U.S.C. 1904.41. Employers are required to keep records for five years, and until recently OSHA cited employers for deficiencies in those records at any time in that five-year period. But several years ago, the D.C. Circuit held that the record-keeping rule permitted OSHA to cite an employer only within six months of the date the employer should have recorded an injury, illness, or death.

AKM LLC v. Sec'y of Labor, 675 F.3d 752 (D.C. Cir. 2012). OSHA amended the rule to make the continuing obligation clear, but Congress reversed that provision under the Congressional Review Act in 2017 ([Rules and Regulations](#), 81 Fed. Reg. 91792-91810 (Dec. 19, 2016)), Public Law 115-21. This creates yet another impediment to effective record-keeping enforcement.

35. 29 C.F.R. 1904.7.
36. See, e.g., Fagan and Hodgson 2017.
37. 59 Fed. Reg. 42880 (August 19, 1994),
38. 61 Fed. Reg. 30940 (June 18, 1996), 61 Fed. Reg. 67477 (December 23, 1996).
39. *Id.* at 30943.
40. 49 U.S.C. 20109.
41. H.R. Report 110-936 at 78-79.
42. 49 U.S.C. at 20109(c). Subsection (d) assigns enforcement authority for these protections to the secretary of labor, who has delegated them to OSHA's Office of Whistleblower Protection, discussed above. The provision is an example of the more robust protections provided in whistleblower statutes newer than the OSH Act. Unlike the 30 days provided in the OSH Act, workers under FRSA have 180 days to file a complaint, have the right to temporary reinstatement during litigation if the secretary finds a violation, have the right to bring an action on their own behalf if the secretary has not resolved their complaints within 210 days, and have the right to appeal an adverse decision by the secretary. None of these rights exist for the far greater number of workers whose only protections are found in the OSH Act.
43. 29 C.F.R. 1904.7(b)(5).
44. See, e.g., Cartwright et al. 2014; Jakobsen et al. 2018.
45. See, e.g., settlement agreements with the meatpacking employer John Morrell & Company (OSHA 1990), the poultry processor ConAgra Poultry Company (OSHA 1992a), and the auto manufacturer General Motors Corporation (OSHA 1992b).
46. The companies also try to limit visits to the clinics. NIOSH observed pain reliever dispensers in the cafeteria of one poultry plant, which it noted made it less likely that workers would seek medical care (Musolin et al. 2014).
47. A discussion of the inadequacy of workers' compensation is beyond the scope of this article; suffice it here to say that the system is essentially a trade-off for workers, in which they accept the certainty of low compensation for injury or illness and give up the right to sue their employers for more meaningful restitution. See, e.g., Michaels 2015.
48. Others are involved in creating standards, providing technical support, investigating whistleblower complaints, overseeing the OSHA state plans that supplant federal enforcement in about half the states, providing "consultation services" to employers, developing policies, and performing the various administrative tasks involved in running a federal agency.
49. Based on total employment rising from 78.7 million to 157.5 million in the household-based Current Population Survey, series LNU02000000.
50. *U.S. v. Ho*, 311 F.3d 589 (5th Cir. 2002); *Chao v. OSHRC*, 401 F.3d 355 (5th Cir. 2005).

51. 29 C.F.R. 1926.1101.
52. *Chao* at 360.
53. See, e.g., OSHA 2015d; Downs 2015.
54. The criminal convictions were not for OSHA violations because the OSH Act does not have the kind of criminal provision that could serve as a meaningful deterrent. It allows only a misdemeanor conviction in cases where an employer's willful violation of a standard causes the death of a worker. 29 U.S.C. 666(e). Although there have been a few convictions under this provision, it does not apply in very many cases, and does not have much effect against corporate employers who cannot be jailed and may see criminal fines, like civil penalties, as just another cost of doing business.
55. 29 C.F.R. §§ 1910.141, 1926.51, 1928.110.
56. OSHRC docket 16-0510.
57. Order, March 28, 2017.
58. See also Burgett 2016, a blog post by an Amazon worker.
59. OSHA's hazard communication standard, 29 C.F.R. 1910.1200, sometimes called a right-to-know rule, requires chemical manufacturers or importers to label the chemicals they produce or import with information about the hazards of those chemicals and to provide purchasers with safety data sheets that provide more information about hazards, including recommended protective measures and first aid. Employers must create and maintain a hazard communication program describing how they will provide information and training to their employees about the hazardous chemicals to which they are exposed, including how to recognize the chemicals and protect themselves from overexposure. If employers comply fully with the standard, workers are armed with significant protective information. Unfortunately, violation of the standard is among the violations most frequently cited by OSHA; last year it was the second most frequently cited (OSHA 2019b).
60. This misdiagnosis was particularly useful to employers, because if their workers were suffering from an infectious disease rather than an occupational disease, the disease was not the employers' fault, and they bore no liability for it. This excuse has been used by some employers during the current pandemic, as noted above.
61. Silica has been called the "king of occupational diseases" (Markowitz and Rosner 1998) and has served as a template for how society, in both this country and others, addresses occupational diseases.
62. See also Hubert Skidmore, *Hawk's Nest*, originally published in 1941 by Doubleday and Doran and currently available from the University of Tennessee Press, for a fictional but very accurate account of life for the Hawk's Nest workers.
63. Hearings Before a Subcommittee of the House of Representatives Committee on Labor, January and February, 1936, reprinted in *West Virginia Heritage, Volume 7*, Comstock, ed., 1972.
64. *Ibid.*
65. During the same period, thousands of workers laid off in other industries during the Depression and suffering the effects of silica exposure filed lawsuits against their employers, and their actions also contributed to public awareness of silica hazards (Markowitz and Rosner 1995).

66. 81 Fed. Reg. 16328-16330 (2016).
67. ACGIH does not meet the OSH Act definition of a consensus organization, therefore OSHA could only adopt the TLVs under Section 6(a) of the act to the extent they had been adopted as “established federal standards.” By the time OSHA adopted its startup standards, the updated 1968 TLVs had been adopted under several of the procurement statutes the department enforces but not under the Construction Safety Act or the Longshoremen’s and Harbor Workers Compensation Act.
68. An advance notice is not a necessary rulemaking step; it is usually a way for an agency to signal its regulatory intention and seek information from the public.
69. The latter was involved because miners, particularly those working in underground coal mines, also suffer from silica exposure.
70. See 1998 Regulatory Plan of the United States, 63 Fed. Reg. 61284 (Nov. 9, 1998).
71. Personal recollection of author.
72. 78 Fed. Reg. 36274-56504 (Sept. 12, 2013).
73. 81 Fed. Reg. 16,285-16,890 (March 25, 2016).
74. The rulemaking process is described in greater detail in *The Triumph of Doubt*, by Dr. David Michaels (Michaels 2020), who was OSHA’s assistant secretary throughout most of the Obama administration.
75. *N. America’s Bldg. Trades Unions v. Occupational Safety & Health Admin.*, 878 F.3d 271 (D.C. Cir. 2017).
76. 58 Fed. Reg. 16285, 16427 and 16432 (March 25, 2016).

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