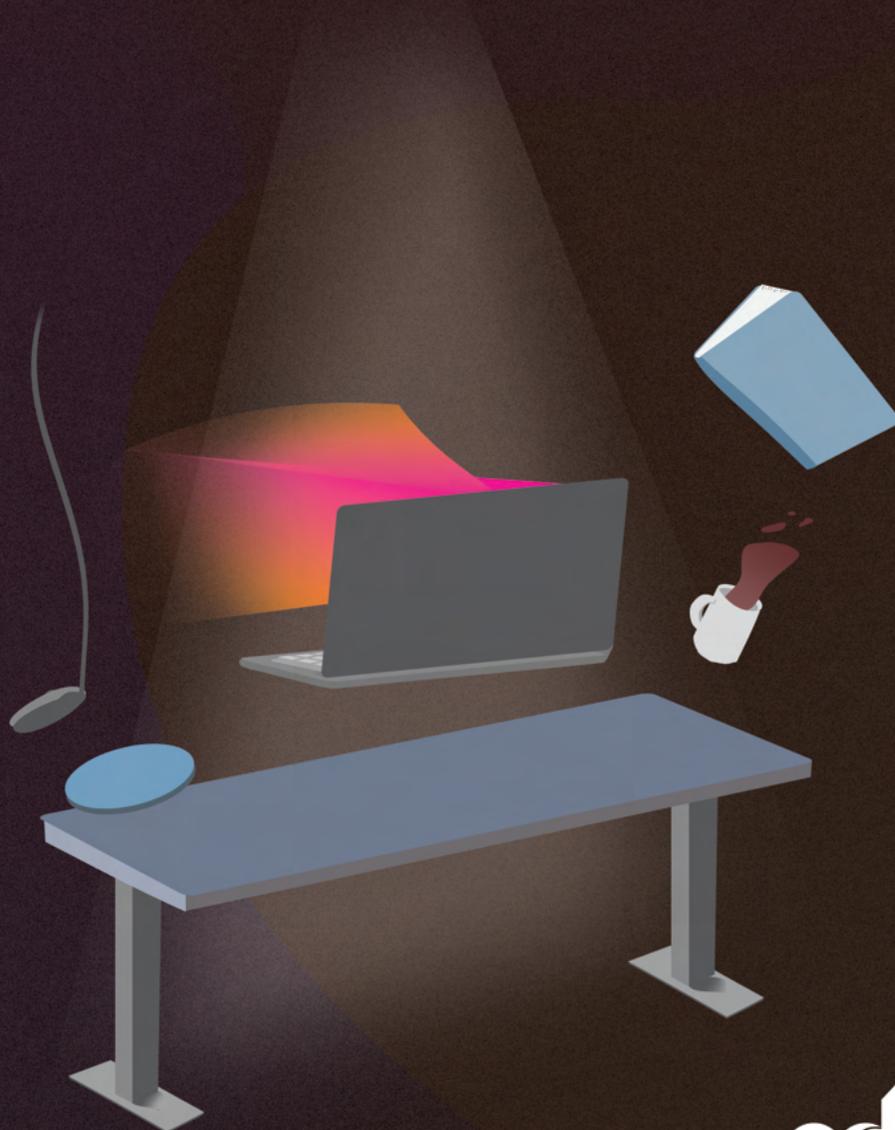


WARNING



**Bossware May Be Hazardous
to Your Health**



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Executive Summary

The health and safety risks of intrusive worker surveillance

Employers are increasingly deploying technologies (bossware) that allow both continuous surveillance of workers' activities and automation of the task of supervising them. Enabled by the limited privacy protections that American law affords employees, and the wide latitude that American law gives companies to dictate workers' on-the-job activities, bossware allows companies to monitor workers' physical movements and pace of work in unprecedented detail. Employers feed the data collected by sensors and activity tracking systems into algorithmic management platforms that automate some or all of the tasks traditionally employed by human managers, including assessing workers' productivity and performance and making disciplinary decisions.

Increasingly, companies are using bossware to enforce a faster pace of work and crack down on breaks and other forms of employee downtime. This report focuses on how bossware can harm workers' health and safety. In particular, it emphasizes how bossware can:

- Discourage and even penalize lawful, health-enhancing employee conduct, including taking breaks to rest when needed to avoid fatigue or to use toilet facilities.
- Enforce a faster work pace and reduce downtime, which increases the risk of physical injuries, particularly those stemming from repetitive motion.
- Increase risk of psychological harm and mental health problems for workers — particularly due to the effects of job strain, which occurs when workers face high job demands but have little control over their work.

Existing laws provide limited protection

Federal law provides some potential avenues for workers, particularly those with disabilities, to challenge the threats to their health and safety associated with bossware.

- The Occupational Safety and Health Act (OSH Act) requires employers to maintain a safe and healthful workplace, both in general and through specific standards that the Occupational Safety and Health Administration (OSHA) issues. For example, employers may violate the OSH Act if they prevent workers from using the restroom or penalize them for doing so.

- The Americans with Disabilities Act (ADA) requires employers to reasonably accommodate disabled workers and avoid adopting practices and standards that have the effect of discriminating against them. The ADA provides robust protections to disabled workers due to employers' affirmative obligation to consider the impact of workplace standards on people with disabilities and to provide reasonable accommodations where necessary.
- Federal wage and hour law also prohibits a feature of some bossware platforms — automatically docking workers' pay for leaving their workstation or for deactivating bossware features.

Action is needed to fully safeguard workers

Existing federal statutes and regulations do not adequately protect workers' health and safety. Current laws were not designed for a world where employers use technology to continuously monitor employees, impose a grueling work pace, and effectively eliminate workers' discretion to take breaks or determine when and how they perform their assigned tasks during the workday. Additional legislation and regulation will be needed to fully protect workers' well-being, and workers need to better understand their rights under current law.

Recommendations for Policymakers & Enforcement Agencies

- To reduce the incidence of fatigue-related injuries and repetitive motion injuries stemming from employers' use of bossware, OSHA should issue standards regarding rest breaks, work pace, and other factors that affect the frequency and severity of such injuries, and the use of technologies in a manner that increases the risk of such injuries. With congressional authorization as needed, OSHA should also issue general ergonomics standards to firmly establish employers' obligation to avoid technologies and practices that contribute to repetitive motion injuries.
- OSHA should protect workers from the effects of job strain by issuing standards regulating employer practices, such as the use of bossware, that tend to generate or exacerbate job strain.
- OSHA should begin enforcing its standards in home offices where employers use bossware to monitor and control the activities of their workers.
- To ensure that new standards and guidance are optimally targeted, the National Institute for Occupational Safety and Health (NIOSH) should conduct additional research to determine the impact that employers' use of bossware has on repetitive motion injuries, job strain, and other threats to workers' physical and mental health.

- The Equal Employment Opportunity Commission (EEOC) should issue guidance clarifying that employers cannot use bossware to establish or enforce standards that inherently disadvantage disabled workers.

Recommendations for Workers & Advocates

- Workers' advocates should ensure that workers understand their rights under applicable laws and encourage them to document and report uses of bossware that threaten their well-being.
- Disabled workers should inform their employers of any limitations that require them to take breaks, have a less onerous pace of work, or be provided with another form of reasonable accommodation.
- Workers should consult with an attorney or contact OSHA whenever employers' algorithmically-tracked pace-of-work requirements deprive workers of a reasonable opportunity to use restroom facilities whenever they need to do so.
- Workers who experience injury or illness as a result of increased work pace requirements, or other effects of new workplace technologies and practices, should exercise their rights by filing a worker's compensation claim and noting any limitations on physical activity upon their return.
- To provide a platform for workers who fear retaliation to report harmful new technologies and practices, workers' advocates should establish an independent system that allows workers to confidentially report health and safety concerns. The system should also allow workers to provide documentation of the potential threats to workplace health and safety, and about employers' technologies and practices that generate those threats.

Recommendations for Employers

- Employers should be mindful of the legal and ethical risks associated with bossware and refrain from dangerous or exploitative uses of these emerging workplace technologies. Particularly, they should consider whether their task management systems and other productivity tools enforce a dangerously high pace of work, or force workers to perform in a way that causes injury or removes workers' ability to use the restroom.
- Employers must avoid deploying systems that dock workers' pay based on algorithmically-monitored downtime or time spent off-task.
- Employers cannot deploy or use monitoring or surveillance technologies in a manner that discourages or prevents workers from using the restroom when they need to.
- Implementing algorithmic management systems does not relieve employers of the obligation to engage in an interactive process with disabled workers to determine what accommodations they may need to perform the essential functions of a job.

- Employers should be aware that they have a legal obligation to accommodate the needs of disabled workers, such as providing restroom breaks or short recovery times, unless doing so would pose an undue hardship to the employer.
- Employers cannot implement systems that will directly or indirectly penalize disabled workers for needing reasonable accommodation to perform essential job functions, or for needing additional time or other accommodations to complete their assigned tasks.

These recommended steps would complement existing, broader-based efforts to strengthen worker privacy protection and target exploitative workplace practices, such as the Worker Privacy Act proposed by the Georgetown Law Center on Privacy & Technology. By providing a means to challenge exploitative uses of bossware without the need for new legislation, stronger enforcement and implementation of existing healthy and safety laws would help shield workers from some of the most harmful effects of bossware while they wait for legislatures to enact more comprehensive protections.

I. The Rise of Bossware

A. *Advances in worker surveillance and algorithmic management*

Bossware, an apt term popularized by a 2020 report by the Electronic Frontier Foundation (EFF),¹ refers to systems that closely monitor and, in many cases, actively manage workers' activities and performance. Thanks to the proliferation of mobile and portable devices with increasingly sophisticated sensors, employers today can track workers' activities continuously and with a previously unattainable level of detail. This is true regardless of whether a worker is based in a traditional worksite such as a factory, warehouse, or commercial office, or in remote workplaces such as delivery vehicles or home offices. Examples of modern worker monitoring technologies include:

- Handheld scanners that track each item a warehouse worker scans;
- Software installed on laptops and smartphones that capture some or all activities performed on the device;
- Trackers that use GPS to monitor workers' current location; and
- Sensors and cameras that track workers' physical movements.

These advances in worker tracking have been accompanied by equally transformative advances in algorithmic management. Companies can feed the data collected by worker surveillance and monitoring systems into algorithms that assign, optimize, and evaluate workers. Companies that operate gig economy platforms such as Uber, Lyft, and TaskRabbit pioneered many of these techniques.² These companies need a way to manage large pools of independent contract workers who perform their tasks remotely, in locations where they are not susceptible to direct human supervision. The companies thus use the smartphone apps that form the backbone of their operations to track workers' locations, collect and analyze performance data, and otherwise execute managerial functions traditionally performed by humans.

Companies can use algorithmic management systems to discipline or even terminate employees who fail to meet productivity targets or other automatically tracked metrics, potentially (and

¹ Bennett Cypher & Karen Gullo, *Inside the Invasive, Secretive "Bossware" Tracking Workers*, Electronic Frontier Foundation, June 30, 2020, <https://www.eff.org/deeplinks/2020/06/inside-invasive-secretive-bossware-tracking-workers>. While the EFF report dealt primarily with bossware that resided on remote workers' computers and mobile devices, this paper uses the term more broadly to also include software and devices used on employer-owned or employer-managed devices that are used in traditional workplaces such as factories, warehouses, or company-owned vehicles.

² *Id.*

increasingly in reality³) without any review or input from human supervisors. Even when human supervisors are present, companies that use such software often rely on and defer to automatically generated data streams that tell them which workers are failing to maintain the assigned pace.⁴

Employers can link sensors and monitoring software with workforce management platforms, allowing surveillance and management systems to seamlessly integrate with each other. This combination of monitoring and management functions essentially allows employers to use technology as an automated version of human supervisors. Certain bossware vendors offer products that integrate with timekeeping and payroll systems, giving employers the ability to automatically dock workers' pay for time spent away from the computer. Time Doctor, a suite of desktop software with both activity monitoring and time management features, takes periodic screenshots of workers' computer screens so that employers can determine if the worker is on-task. Time Doctor lets workers delete those screenshots, but according to the software's FAQ, the time period during which the deleted screenshots were taken will be deducted from the worker's work hours.⁵ In other words, the worker will not be paid for the period during which a deleted Time Doctor screenshot was taken.

The ever-widening availability of these technologies means that intrusive bossware can be brought to bear on workers in virtually any industry or physical setting. The privacy implications of these tracking technologies are troubling,⁶ as is the potential for bossware to exacerbate the inequities that workers from marginalized groups already suffer.⁷ But examples from three

³ Colin Lecher, *How Amazon automatically tracks and fires warehouse workers for 'productivity'*, The Verge, Apr. 25, 2019, <https://www.theverge.com/2019/4/25/18516004/amazon-warehouse-fulfillment-centers-productivity-firing-terminations>.

⁴ See generally Raja Parasuraman & Dietrich Manzey, *Complacency and bias in human use of automation: An attentional integration*, 52 *Human Factors* 381 (2010); John Zerilli, et al, *Algorithmic Decision-Making and the Control Problem*, 29 *Minds & Machines* 555 (2019).

⁵ FAQ - Time Management Software, Time Doctor, <https://www.timedoctor.com/faq.html> (accessed April 1, 2021) ("If your manager is using the 'screenshots' feature, you'll also be able to see all screenshots that were taken while you were working, and can delete any screenshots that you choose (the associated time would also be deducted from your work hours)."). As described below, using this feature in the manner implied – that is, using it to withhold pay if a worker performs a personal task on a computer during the workday and deletes the associated screenshot – likely would violate the Fair Labor Standards Act.

⁶ See, e.g., Ifeoma Ajunwa, et al, *Limitless Worker Surveillance*, 105 *Cal. L. Rev.* 735 (2017); Sam Adler-Bell & Michelle Miller, *The Datafication of Employment: How Surveillance and Capitalism Are Shaping Workers' Futures without Their Knowledge*, The Century Foundation, Dec. 19, 2018, <https://production-tcf.imgix.net/app/uploads/2018/12/03160631/the-datafication-of-employment.pdf>; Gennie Gebhart, et al., *Fighting Disciplinary Technologies*, Electronic Frontier Foundation, May 20, 2021, <https://www.eff.org/deeplinks/2021/05/fighting-disciplinary-technologies>.

⁷ See, e.g., Adler-Bell & Miller, *supra* note 6, at 5-6; Gebhart, *supra* note 6; Emily J. Martin, Vice President for Education & Workplace Justice, National Women's Law Center, Letter to United States House of Representatives

sectors, each highlighted in a 2020 exposé of algorithmic management by The Verge,⁸ illustrate how employers' productivity-centric use of bossware also threatens workers' health and safety.

Warehouses: Handheld taskmasters

The scanners that warehouse workers use to track the movement of shipped items have increasingly served an additional role as handheld electronic managers for the workers who carry them. The scanners tell workers which items to retrieve, pick up, scan, pack, and move, while tracking the pace at which such workers accomplish those tasks. This combination of automated monitoring and management takes both a physical and mental toll, as journalist Gabriel Mac described when he was working in such a warehouse in 2012:

I've started cringing every time my scanner shows a code that means the item I need to pick is on the ground, which, in the course of a 10.5-hour shift—much less the mandatory 12-hour shifts everyone is slated to start working next week—is literally hundreds of times a day. “How has OSHA signed off on this?” I’ve taken to muttering to myself.⁹

The highest-profile news stories about the health and safety effects of combining continuous worker monitoring with algorithmic management have focused on Amazon:

Every Amazon worker I've spoken to said it's the automatically enforced pace of work, rather than the physical difficulty of the work itself, that makes the job so grueling. Any slack is perpetually being optimized out of the system, and with it any opportunity to rest or recover. A worker on the West Coast told me about a new

Committee on Education and Labor on the Future of Work, June 15, 2020, available at <https://nwlc.org/resources/letter-to-committee-on-education-and-labor-on-the-future-of-work/>.

⁸ Josh Dzieza, *How Hard Will the Robots Make Us Work*, The Verge, Feb. 27, 2020, <https://www.theverge.com/2020/2/27/21155254/automation-robots-unemployment-jobs-vs-human-google-amazon>.

⁹ Gabriel Mac, *I Was a Warehouse Wage Slave*, Mother Jones (Mar./Apr. 2012) available at <https://www.motherjones.com/politics/2012/02/mac-mcclelland-free-online-shipping-warehouses-labor/>. As described below in section II.A, OSHA has not “signed off” on either the physical strain or mental stress that the worker describes – but only because OSHA does not have standards regarding repetitive motion injuries or work strain at all.

device that shines a spotlight on the item he's supposed to pick, allowing Amazon to further accelerate the rate and get rid of what the worker described as "micro rests" stolen in the moment it took to look for the next item on the shelf.¹⁰

One warehouse worker described the grinding toll this eventually took on his physical health:

"You're not stopping," Jake said. "You are literally not stopping. It's like leaving your house and just running and not stopping for anything for 10 straight hours, just running."

After several months, he felt a burning in his back. A supervisor sometimes told him to bend his knees more when lifting. When Jake did this his rate dropped, and another supervisor would tell him to speed up. "You've got to be kidding me. Go faster?" he recalled saying. "If I go faster, I'm going to have a heart attack and fall on the floor." Finally, his back gave out completely. He was diagnosed with two damaged discs and had to go on disability. The rate, he said, was "100 percent" responsible for his injury.¹¹

The health risks of a rapid, automatically tracked work pace are far from limited to Amazon. Mac pointedly refused to name his employer when writing about his warehouse work experiences because "to do otherwise might give people the impression that these conditions apply only to one warehouse or one company. Which they don't."¹²

Call centers: Robots monitoring your downtime – and your empathy

Like warehouse workers, digital systems track call center workers' productivity and, like human managers, can penalize them for failing to complete calls quickly or for taking a moment to rest or gather themselves between calls. Now, some call centers are deploying systems that attempt to fill a managerial role that is even more distinctly human: providing real-time coaching and

¹⁰ Dzieza, *supra* note 8. See also Aiha Nguyen, *The Constant Boss: Work Under Digital Surveillance* 6 (Data & Society 2021), available at https://datasociety.net/the_constant_boss.pdf (accessed June 21, 2021) (Amazon warehouse worker describing "constant pressure from managers and computers that monitor her every action to make sure she's working as fast as possible, creating a work pace that can be grueling").

¹¹ Dzieza, *supra* note 8.

¹² Mac, *supra* note 9.

performance feedback to employees, even on the most subjective work activities. Systems like Voci and Cogito purport to detect and assess agents' emotional characteristics during calls.

Cogito offers tools such as the “Empathy Cue Notification,” which kicks in when Cogito’s algorithms detect “a change in the customer's behavior” that “indicates a heightened need for emotional support.”¹³ Voci claims that its algorithms allow employers to “reduce manual supervision” by automatically analyzing calls in real time, identifying upselling opportunities, and generating agent scorecards “based on the content of their customer interactions.”¹⁴ The job of a call center worker often entails interacting with irate and even abusive callers. Consequently, call center workers historically have suffered from high rates of anxiety and depression.¹⁵ They now face an environment where everything from the amount of time they spend completing forms to the perceived empathy they express to callers is continuously monitored and evaluated by automated systems, eliminating whatever small sense of control and independence they once had over how they perform their jobs. Predictably, and as The Verge described, this is making a job that already was stressful and emotionally draining even more so:

[A] worker who used Cogito, for instance, had only a minute to fill out insurance forms between calls and only 30 minutes per month for bathroom breaks and personal time, so she handled call after call from people dealing with terminal illnesses, dying relatives, miscarriages, and other traumatic events, each of which she was supposed to complete in fewer than 12 minutes, for 10 hours a day. “It makes you feel numb,” she said. Other workers spoke of chronic anxiety and insomnia, the result of days spent having emotionally raw conversations while, in the words of one worker, “your computer is standing over your shoulder and arbitrarily deciding whether you get to keep your job or not.”¹⁶

Remote workers: The boss in your bedroom

The COVID-driven work-from-home boom has done little to slow the worker tracking trend. Indeed, there is a burgeoning industry of companies that develop and sell software that can

¹³ Cogito, *The State of Empathy in the Call Center*, at 7, https://cogitocorp.com/wp-content/uploads/2020/12/cogito_annual_report_2020_Update.pdf.

¹⁴ Voci: Solutions, <https://www.vocitec.com/solutions> (accessed May 30, 2021).

¹⁵ Guy Winch, *The Last Bullying Frontier*, *Psychology Today*, Mar. 31, 2011, <https://www.psychologytoday.com/us/blog/the-squeaky-wheel/201103/the-last-bullying-frontier>.

¹⁶ Dzieza, *supra* note 8.

track every click and keystroke that remote workers make, take periodic screenshots of workers' computer screens, and even use attached webcams and microphones to monitor workers' physical movements and activities. These technologies can capture every password a worker enters, every email a worker opens, and every webpage a worker visits.

These systems give employers the ability to supervise remote workers as closely as (and perhaps more closely than) they could with a human supervisor in a traditional workplace. The Austin-based company Crossover Technologies markets a software suite called WorkSmart and advertises its ability to “use keyboard activity, application usage, screenshots, and webcam photos to generate a timecard every 10 minutes.”¹⁷ A software engineer who used WorkSmart for his remote job had to use “speed and strategy” to use the bathroom in his own home because if the webcam snapped a photo while he was away from his workstation, he wouldn't get paid for the 10-minute block during which the photo was taken.¹⁸ As a result, the worker “started watching for the green light of his webcam to blink before dashing down the hall to the bathroom, hoping he could finish in time before WorkSmart snapped another picture.”¹⁹

B. Continuous monitoring and automated management: a dangerous mix

These examples provide a glimpse into the breadth of jobs, settings, and industries in which employers are using bossware. By integrating worker surveillance and monitoring technologies with algorithmic management systems, companies can turn to machines to perform core managerial tasks traditionally performed by human supervisors. On everything from work assignments and supervision to performance feedback, evaluation, discipline, and termination, machines can monitor and (micro)manage workers to a degree that matches and often exceeds what flesh-and-bone managers can accomplish.

There are no scientific studies indicating how many companies are using these technologies, but a 2018 Gartner survey of 239 large corporations found that more than half were using “nontraditional monitoring techniques” such as “analyzing the text of emails and social-media messages, scrutinizing who's meeting with whom, gathering biometric data and understanding how employees are utilizing their workspace.” Gartner projected that this number would grow

¹⁷ WorkSmart Productivity Tool - Crossover, <https://www.crossover.com/pages/worksmart-productivity-tool> (accessed April 26, 2021).

¹⁸ Dzieza, *supra* note 8. While the worker that *The Verge* interviewed was based in Bangladesh, WorkSmart advertises the exact feature that the Bangladeshi worker described on its U.S. website, as noted in the link above.

¹⁹ *Id.*

to nearly 80 percent by the end of 2020²⁰ – and it made that projection before COVID dramatically increased the number of remote workers, forcing companies to find new ways to monitor and manage their workforces.

The warehouse, call center, and remote work examples illustrate how an increasing number of employers are using bossware to enforce a faster pace of work, crack down on breaks and other forms of downtime, and eliminate workers' discretion and control over how and when they complete their assigned tasks. In settings such as warehouses, where the work is primarily physical, the added pace could exacerbate the symptoms of workers with many disabilities and raise the risk of accidents and repetitive motion injuries. In those regards, Jake's experience at Amazon is no outlier; as productivity demands have increased, so have Amazon warehouse workers' injury rates.²¹ Workers also reportedly skip bathroom breaks²² and relieve themselves in bottles²³ and plastic bags²⁴ as they struggle to keep up with their assigned pace, creating additional sanitation and physical health and safety hazards.

The danger is hardly limited to Amazon. A 2015 article in *Harper's* highlighted how UPS drivers routinely and recklessly cut corners on safety procedures to keep up with algorithmically-tracked quotas.²⁵

The combination of constant monitoring and intrusive algorithmic supervision threatens workers' mental health as well. Decades of medical and psychological research has demonstrated the significant risk that *job strain*, defined as a combination of high job demands

²⁰ Brian Kropp, *The Future of Employee Monitoring*, Gartner, May 3, 2019, <https://www.gartner.com/smarterwithgartner/the-future-of-employee-monitoring/>.

²¹ Will Evans, *How Amazon hid its safety crisis*, Reveal, Sept. 29, 2020, <https://revealnews.org/article/the-truth-about-injuries-at-amazon/>. See also Open Letter by Athena Coalition, et al., "Stop Amazon's Injury Crisis: End Amazon's Dangerous and Punitive Worker Surveillance," June 21, 2021, <https://athenaforall.medium.com/end-rate-tot-be35b880a67e>.

²² Michael Sainato, *14-hour days and no bathroom breaks: Amazon's overworked delivery drivers*, *The Guardian*, Mar. 11, 2021, <https://www.theguardian.com/technology/2021/mar/11/amazon-delivery-drivers-bathroom-breaks-unions>.

²³ Aimee Picchi, *Amazon apologizes for denying that its drivers pee in bottles*, CBS News, Apr. 5, 2021, <https://www.cbsnews.com/news/amazon-drivers-pee-in-bottles-union-vote-worker-complaints/>.

²⁴ Kate Taylor & Avery Hartsman, *Amazon drivers say they had to poop in bags and struggled to change menstrual pads in addition to peeing in bottles*, *Business Insider*, Mar. 26, 2021, <https://www.businessinsider.com/amazon-drivers-say-pooped-in-bags-changed-pads-pee-bottles-2021-3>.

²⁵ Esther Kaplan, *The Spy Who Fired Me*, *Harper's*, Mar. 2015, at 31, 33-34. See also Adler-Bell & Miller, *supra* note 6 ("The devices score workers against an ideal of productivity that relies on consistent external factors, while the reality is that many work days include varying disruptions. As a result, workers are penalized for external factors over which they have little control and are pushed to make up for them through invisible sacrifices—such as to their health and personal time.").

and low job control, poses to workers' health.²⁶ A large body of research has shown that job strain is strongly linked to depression and anxiety. One recent study even showed that job strain was strongly associated with serious suicidal thoughts in workers.²⁷ Unsurprisingly, this mental strain is associated with negative physical health consequences as well, with research indicating that high job strain increases the risk of ulcers, cardiovascular death, and other serious physical illnesses and conditions.²⁸

The implications of this research for the expanding use of bossware are alarming. Many forms of bossware produce exactly these risk factors for job strain, reducing workers' control over their work and increasing the physical and mental demands placed on them by ensuring that they are busy all the time.²⁹ These technologies allow employers to maximize productivity and eliminate even brief periods of worker downtime by continuously monitoring and enforcing a faster work pace. These practices exacerbate the job strain generated by other technology-driven employment decision systems, such as the use of scheduling algorithms that often produce erratic and precarious schedules that prevent workers from planning for other aspects of their lives.³⁰ The resulting work environment is a threat not merely to workers' privacy and autonomy, but to their health, safety, and well-being.

II. Current Legal Protections

There are no laws at the state or federal level directly regulating worker surveillance or technologies used to monitor or manage employees,³¹ nor are there any laws specifically

²⁶ An influential 1979 paper by Robert Karasek first defined job strain as the combination of high "psychosocial workload demands" and low "decision latitude" and identified its relationship with anxiety, depression, insomnia, and other negative health outcomes. See Robert A. Karasek, Jr., *Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign*, 24 *Admin. Sci. Qtrly* 285 (1979).

²⁷ See Bongkyoo Choi, *Job strain, long work hours, and suicidal ideation in US workers: a longitudinal study*, 91 *Int'l Archives of Occ. & Environ. Health* 865 (2018).

²⁸ Töres Theorell & Robert A. Karasek, Current issues relating to psychosocial job strain and cardiovascular disease research, available at <https://psycnet.apa.org/record/1996-04477-002> (1996); <https://www.jstor.org/stable/40967343?seq=1> (2005).

²⁹ See Nguyen, *supra* note 10, at 12 ("A multitude of data sources drive automated decision-making systems, and such systems are designed to take choices out of workers' hands.").

³⁰ See *id.* at 18.

³¹ The Electronic Communications Privacy Act (ECPA) does contain electronic eavesdropping and wiretapping prohibitions that are broad enough, in theory, to cover many of the employee monitoring technologies discussed above that capture workers' oral or electronic communications. See 18 U.S.C. § 2511(1)(a)-(b). But the ECPA contains a consent exception, 18 U.S.C. § 2511(2)(c), and that exception effectively swallows the rule in workplace settings. Employers can satisfy the ECPA consent exception simply by including provisions allowing monitoring in policies laid out in employee handbooks or other HR documentation and having employees agree to abide by those policies as a condition of employment. Consequently, the ECPA provides no practical limit on employers' ability to use bossware to monitor workers' pace and downtime.

regulating the pace of work that employers can enforce. But Congress has passed laws to protect workers from threats to their health and safety in the workplace. Two federal laws in particular provide most of the relevant legal framework for assessing the health and safety risks associated with the more exploitative uses and effects of bossware: the Occupational Safety and Health (OSH) Act and the Americans with Disabilities Act (ADA).

This section examines the degree to which the OSH Act and the ADA protect employees from three particular health and safety risks that often accompany bossware: the reduction or elimination of breaks; the implementation and enforcement of a fast and unrelenting pace of work; and the mental and psychological strain associated with raising job demands on workers while dramatically reducing their control over their work. It also notes that the Fair Labor Standards Act (FLSA) prohibits the practice of automatically docking the pay of workers who take short breaks during the workday, and describes other potential sources of protection for workers under existing federal and state laws.

Notably, the laws discussed below apply only to employees and not to independent contractors. Consequently, references to “workers” should be interpreted as being limited to those workers who are classified as employees under applicable legal standards.³²

A. The OSH Act and OSHA Standards

1. The protections of the OSH Act and OSHA standards

Employers’ duties under the OSH Act stem from two provisions in that statute. The first is the General Duty Clause, which requires employers to “furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees.”³³ The second statutory provision requires employers to comply with any specific safety and health standards that the Occupational Safety and Health Administration (OSHA) promulgates.³⁴ OSHA is also tasked with inspecting workplace conditions and enforcing the OSH Act. In practice, OSHA’s enforcement actions are overwhelmingly directed at violations of specific OSHA standards rather than the General Duty Clause.

³² That said, because a major component of the legal tests for determining worker classification is the degree to which a company has a right to control the timing and manner in which workers complete their tasks, the use of technology that continuously monitors and automatically manages workers may increase the risk that a worker will be classified as an employee rather than an independent contractor.

³³ 29 U.S.C. § 654(a)(1).

³⁴ 29 U.S.C. § 654(a)(2).

The OSH Act also created the federal government’s primary research center for occupational safety and health, the National Institute for Occupational Safety and Health (NIOSH), which is part of the Center for Disease Control and Prevention. While OSHA often affords considerable weight to NIOSH’s research and recommendations, any interested party can present proposed standards to OSHA. OSHA standards are often the subject of intense lobbying by companies in potentially affected industries, and a significant number of proposed OSHA standards never come to fruition due to industry opposition.³⁵

Although any worker can file an OSHA complaint, the OSH Act, unlike the ADA and most other federal employment laws, does not include a private right of action. Investigation and enforcement of OSHA standards is entirely dependent on OSHA itself – and OSHA’s enforcement authority is limited. OSHA largely relies on levying fines to deter employers from violating its standards and possesses only limited authority to obtain injunctions forcing employers to discontinue unsafe workplace practices.³⁶ Likewise, while the OSH Act prohibits retaliation against employees who report health and safety hazards, there is no private right of action for whistleblowers, who must depend on OSHA to investigate and attempt to enforce retaliation claims.³⁷ These enforcement mechanisms limit the deterrent effect of even well-formulated OSHA standards, but overhauling the OSH Act’s enforcement and remedy provisions is beyond the scope of this report.

2. The right to restroom breaks aside, OSHA standards offer limited protection for the health and safety risks associated with employers’ use of bossware

OSHA’s sanitation standard requires employers to allow workers to take restroom breaks when necessary. Unfortunately, the OSH Act and OSHA standards otherwise offer few clear protections to workers whose health and safety are threatened by employers’ use of bossware.

³⁵ “[F]ierce opposition to OSHA standards and intervention into business’s capitalist prerogative to decide how to conduct its operations and make a profit thwarted numerous standards. On the drawing board but never brought to life: a carcinogen policy, general industrial hygiene exposure monitoring programs, general medical surveillance programs (both recommended by NIOSH), motor vehicle safety, ergonomics, workplace indoor air quality, a safety and health program management standard, and updating hundreds of permissible exposure limits for hazardous substances that are decades out of date.” Dave Johnson, *OSHA – the good, the bad, the future*, Industrial Safety & Hygiene News, Oct. 1., 2019, <https://www.ishn.com/articles/111590-osh-the-good-the-bad-the-future> (accessed May 9, 2021).

³⁶ See generally Michael Silverstein, *Getting Home Safe and Sound: Occupational Safety and Health Administration at 38*, 98 Am. J. Pub. Health 416 (2008).

³⁷ 29 U.S.C. § 660(c).

Specifically, OSHA has no specific standards governing injuries due to repetitive motion or fatigue, nor for threats to workers' mental health.

OSHA requires employers to provide reasonable access to toilet facilities, which means employers cannot adopt policies that effectively penalize employees for using the bathroom

Under OSHA's standards, all workers have a right to reasonable access to toilet facilities. OSHA has explained that this requirement means employees must be "able to use toilet facilities promptly" when the need arises,³⁸ regardless of whether that need is tied to a disability or aligns with an employer's preferences for the timing and frequency of breaks. As OSHA has explained:

[I]t would be difficult to set a specific interval for breaks, because the need to use toilet facilities varies from person to person and even with respect to the same person. Some of the variables that can affect a worker's need to urinate are: diet, stress, pregnancy, prostate health, other medical conditions, medication use, weather temperature (working in a cold environment makes people need to urinate more frequently), and the amount and type of fluid consumed.³⁹

OSHA has also explained that "[r]estrictions on access" to toilet facilities "must be reasonable and cannot cause extended delays."⁴⁰ It follows that if restrictions on breaks or evaluation-based penalties are harsh enough that they stop employees from using the restroom when they need to – or if they make employees feel the need to relieve themselves in a place other than a restroom – that may violate OSHA's reasonableness and promptness requirements.

OSHA does not impose specific obligations relating to ergonomics, fatigue, or pace of work, though the General Duty Clause still applies

³⁸ OSHA Standard Interpretation Letter dated Mar. 10, 2014, available at <https://www.osha.gov/laws-regs/standardinterpretations/2014-03-10>.

³⁹ OSHA Standard Interpretation Letter dated Apr. 23, 2003, available at <https://www.osha.gov/laws-regs/standardinterpretations/2003-04-23>.

⁴⁰ OSHA Standard Interpretation Letter dated Mar. 10, 2014, *supra* note 37.

Overwork and the associated physical strain that comes with it present a direct threat to the health and safety of workers in many sectors. Unfortunately, there are no explicit federal OSHA standards governing repetitive motion injuries or ergonomics. Additionally, OSHA has not adopted specific standards requiring employers to take any particular steps to prevent injuries due to fatigue or overexertion.⁴¹

Any protection that employees enjoy for injuries due to ergonomics and fatigue thus stem from employers' obligation to maintain a safe and healthful workplace under the General Duty Clause. OSHA has traditionally hesitated to read specific obligations on employers into the General Duty Clause, but as aggressive implementation and automated enforcement of faster work paces increase the rate of workplace injuries, the threat to workers' health may become too significant for OSHA to ignore.

Indeed, a recent state-level enforcement action in Washington suggests that regulators in some circles are becoming attuned to this risk. On May 4, 2021, the Washington State Department of Labor and Industries issued a citation⁴² to Amazon for alleged violations of Washington's equivalent of the General Duty Clause⁴³ at Amazon's Dupont, Washington warehouse. The citation broke new ground by explicitly tying a workplace safety violation to an employer's use of technology to enforce a dangerously fast pace of work. Specifically, the citation states that Amazon threatened its workers' physical health by requiring them to perform repetitive physical tasks and "maintain a very high pace of work . . . without adequate recovery time to reduce the risk of" injury.⁴⁴ The citation alleged that there was "a direct connection between Amazon's employee monitoring and discipline systems" and the threat of injury that Amazon's warehouse workers face.⁴⁵ The citation gave Amazon 60 days to provide a written plan to correct these alleged threats to workers' health in Amazon's warehouse.⁴⁶

In the absence of specific OSHA standards or guidance, the OSH Act's protections in this space remain tenuous. But the Washington citation suggests that injuries stemming from a fast and

⁴¹ OSHA's website does have a series of documents relating to "Long Work Hour, Extended or Irregular Shifts, and Worker Fatigue" that recognize the hazards of worker fatigue and note that more frequent rest breaks may mitigate the associated health and safety risks. See OSHA, Safety and Health Topics: Long Work Hour, Extended or Irregular Shifts, and Worker Fatigue, <https://www.osha.gov/worker-fatigue/> (accessed May 24, 2021). But OSHA's guidance on the subject focuses on fatigue resulting from sleep deprivation and, in any event, the guidance documents do not have the binding effect of OSHA standards.

⁴² Wash. State Dep't of Labor & Indus., Citation and Notice of Assessment, Inspection 317961850, May 4, 2021, available at <https://assets.documentcloud.org/documents/20787752/amazon-dupont-citation-and-notice-may-2021.pdf> (accessed May 26, 2021) (hereinafter, "Wash./Amazon Citation").

⁴³ Rev. Code Wash. 49.17.060(1); Wash. Admin. Code 296-800-11005.

⁴⁴ Wash./Amazon Citation, *supra* note 41, at 2.

⁴⁵ *Id.*

⁴⁶ *Id.* at 4.

algorithmically-enforced pace of work are becoming more generally recognized in industry, which may set the stage for enforcement actions at the federal level and in other states going forward.

OSHA does not have standards relating to job strain or mental health

Although NIOSH has done considerable research into the effects of stress on workers,⁴⁷ no OSHA standards specifically address the health and safety effects of job strain. More generally, OSHA has largely avoided addressing concerns related to workers' mental health, and OSHA has not published any formal guidance – much less issued enforceable standards – regarding employers' responsibilities to protect workers from the effects of job strain or other work-related threats to their mental health. Moreover, the General Duty Clause does not extend to mental illnesses without physical manifestations.⁴⁸

OSHA's standards state that employers do not even need to keep records of injuries relating to workers' mental health because OSHA does not classify mental illnesses as work-related “unless the employee voluntarily provides the employer with an opinion from a physician or other licensed health care professional . . . stating that the employee has a mental illness that is work-related.”⁴⁹ Consequently, workers cannot rely on OSHA to protect them from the negative health effects associated with job strain or other psychiatric problems stemming from employers' use of bossware.

⁴⁷ Stress at Work, NIOSH, <https://www.cdc.gov/niosh/topics/stress/default.html> (accessed May 24, 2021).

⁴⁸ See 29 U.S.C. § 654 (a)(1) (“Each employer . . . shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious *physical* harm to his employees.”) (emphasis added).

⁴⁹ 29 C.F.R. § 1904.5(b)(2)(ix). Even if a worker with a job-related mental health impairment wanted to make the required disclosure, obtaining a diagnosis may prove challenging for reasons ranging from the affordability of adequate mental health care to discriminatory assumptions about symptoms reported by individuals from historically disadvantaged groups. See, e.g., Jenny Gold, *Affordable Mental Health Care? It's Getting Even Tougher to Access*, Kaiser Health News, Nov. 20, 2019, <https://khn.org/news/affordable-mental-health-care-its-getting-even-tougher-to-access/>. Aaron E. Carroll, *Doctors and Racial Bias: Still a Long Way to Go*, N.Y. Times, Feb. 25, 2019, <https://www.nytimes.com/2019/02/25/upshot/doctors-and-racial-bias-still-a-long-way-to-go.html>. Fay Schopen, *The healthcare gender bias: do men get better medical treatment?*, The Guardian, Nov. 20, 2017, <https://www.theguardian.com/lifeandstyle/2017/nov/20/healthcare-gender-bias-women-pain>.

OSHA does not enforce its standards in home offices

There is an additional gap in OSHA's enforcement regime that limits OSHA's ability to enforce both the General Duty Clause and specific OSHA standards for many workers: OSHA does not currently inspect home offices or cite employers for health and safety violations in such offices.

OSHA adopted its current policy for home offices after it issued an interpretive ruling in the late 1990s stating that "[t]he OSH Act applies to work performed by an employee in any workplace within the United States, including a workplace located in the employee's home" and that employers are therefore "responsible for complying with the OSH Act and with safety and health standards" even for employees who work in home offices.⁵⁰ That ruling triggered a political backlash led by employers and the Labor Department overruled OSHA less than 48 hours after the ruling became public.⁵¹

Today, an OSHA enforcement directive makes it clear that OSHA will *not* enforce its standards in home offices:

OSHA will not conduct inspections of employees' home offices.

OSHA will not hold employers liable for employees' home offices, and does not expect employers to inspect the home offices of their employees.

If OSHA receives a complaint about a home office, the complainant will be advised of OSHA's policy. If an employee makes a specific request, OSHA may informally let employers know of complaints about home office conditions, but will not follow-up with the employer or employee.⁵²

⁵⁰ OSHA Standard Interpretation Letter dated Nov. 15, 1999, available at <https://www.osha.gov/laws-regs/standardinterpretations/1999-11-15>.

⁵¹ Frank Swoboda, *OSHA Exempts Home Offices*, Wash. Post, Jan. 27, 2000, available at <https://www.washingtonpost.com/wp-srv/WPcap/2000-01/27/090r-012700-idx.html>.

⁵² Home-Based Worksites, OSHA Enforcement Directive No. CPL 2-0.125, eff. date Feb. 25, 2000, available at <https://www.osha.gov/enforcement/directives/cpl-02-00-125>. The policy does not speak to employer obligations if the employer *is*, in some sense, inspecting the employee's worksite – much less keeping it under continuous surveillance.

The same directive does state that employers are “responsible in home worksites for hazards caused by materials, equipment, or work processes which the employer provides or requires to be used in an employee's home.”⁵³ But because OSHA will not inspect home offices or formally respond to employee complaints regarding home office conditions, employers face little risk of actually being subjected to enforcement action and thus have little practical incentive under current law to eliminate threats to employees’ health and safety in home offices.

B. *The Americans with Disabilities Act (ADA)*

The ADA provides much more comprehensive protection for workers than the OSH Act, but these protections only apply to a subset of workers: those with a qualifying disability. Under the ADA, disabled workers enjoy a right both to reasonable accommodations and to an interactive process with the employer to identify effective accommodations. Because automated monitoring and management systems tend to disadvantage workers with disabilities, the ADA restricts employers from deploying such systems indiscriminately.

1. The protections of the ADA

Title I of the ADA prohibits employers from discriminating against workers on the basis of disability. The ADA defines *disability* broadly as any “physical or mental impairment that substantially limits one or more major life activities.”⁵⁴ “Major life activities” can include a variety of mental and physical tasks common in the workplace as well as basic functions of living, including “performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working,” as well as “the operation of a major bodily function, including but not limited to, functions of the immune system, normal cell growth, digestive, bowel, bladder, neurological, brain, respiratory, circulatory, endocrine, and reproductive functions.”⁵⁵ An impairment in any one major life activity, including the operation of any major bodily function, qualifies as a disability under the ADA, even if all other life activities are unaffected.⁵⁶

⁵³ *Id.*

⁵⁴ 42 U.S.C. § 12102(1). The definition also encompasses people who have “a record of such an impairment” or who are “regarded as having such an impairment.” *Id.*

⁵⁵ 42 U.S.C. § 12102(2).

⁵⁶ 42 U.S.C. § 12102(4)(C) (“An impairment that substantially limits one major life activity need not limit other major life activities in order to be considered a disability.”).

The ADA protects disabled workers primarily through two requirements. First, the statute prohibits employers from discriminating against “qualified individuals” with disabilities.⁵⁷ “Qualified” means that the individual can perform “the essential functions” of a given job “with or without *reasonable accommodation*.”⁵⁸ Second, the statute requires employers to make such “reasonable accommodations to the known physical or mental limitations of an otherwise qualified individual with a disability who is an applicant or employee, unless [the employer] can demonstrate that the accommodation would impose an undue hardship.”⁵⁹ If an employer becomes aware of a disabled employee’s need for accommodation, the employer generally must engage with the employee in an *interactive process* to determine “the precise limitations resulting from the disability and potential reasonable accommodations that could overcome those limitations.”⁶⁰ As the term implies, the interactive process requires the employer to engage with and seek input from the employee before deciding whether and how to accommodate a disability.

Taken together, these provisions require employers to (1) work with each disabled employee to determine what, if any, accommodations the employee requires; (2) provide reasonable accommodations sufficient to allow the employee to perform the job; and then (3) evaluate the employee on the basis of their ability to perform the essential functions of the job *with* the accommodations, without regard to whether or how well they could have performed the job in the absence of those accommodations.

The ADA also includes broad provisions to protect workers who seek to vindicate their rights under the statute by prohibiting discrimination against employees and applicants who request accommodation or retaliation against whistleblowers who report violations of the statute.⁶¹ The statute also provides a private right of action that allows prevailing plaintiffs to obtain damages, injunctive relief (including reinstatement and back pay), and reasonable attorney fees.⁶²

An example helps illustrate how employers’ ADA obligations work in practice. Say Jane is a cashier at a retail store who has a chronic illness that makes it painful for her to stand for more than 30 minutes at a time and that requires her to inject herself with medication every four

⁵⁷ 42 U.S.C. § 12112(a).

⁵⁸ 42 U.S.C. § 12111(8) (emphasis added).

⁵⁹ 42 U.S.C. § 12112(b)(5)(A).

⁶⁰ 29 C.F.R. § 1630.2(o)(3).

⁶¹ 42 U.S.C. § 12203; *Wright v. CompUSA, Inc.*, 352 F.3d 472, 478 (1st Cir. 2003) (“[R]equesting an accommodation is protected activity for the purposes of § 12203(a).”); *Solomon v. Vilsack*, 763 F.3d 1, 15 (D.C. Cir. 2014) (“[W]e join our sister circuits in holding that the act of requesting in good faith a reasonable accommodation is a protected activity under 42 U.S.C. § 12203.”).

⁶² See 42 U.S.C. § 12117(a) (incorporating Title VII enforcement provisions into ADA); 42 U.S.C. § 2000e-5(g), (k) (Title VII provision allowing prevailing plaintiffs to pursue civil cause of action and obtain injunctive relief and back pay).

hours. Jane could perform all essential functions of the position (taking payment, counting and providing change, and so forth) if she were given a stool to sit on during periods where she is not serving a customer and could take short breaks for her injections and occasional additional breaks to rest on busy days.

In this example, Jane's illness is a qualifying disability because it substantially limits her ability to stand, which is a major life activity. Once the employer becomes aware of Jane's disability, it would be required to provide a stool for Jane to use during slow periods – or to engage in an interactive process with Jane to identify another reasonable accommodation – unless it can demonstrate that purchasing the stool, or allowing Jane to use it, would impose an undue hardship on the store. Likewise, the store would be required to permit her to take breaks for her injections unless it could demonstrate undue hardship. The store then must evaluate Jane based on her performance with those accommodations and would be prohibited from firing, disciplining, or otherwise discriminating against her on the basis of either her disability or need for accommodation.

2. The ADA requires employers to accommodate disabled workers when deploying bossware

The ADA prohibits employers from penalizing disabled workers for taking needed breaks

Employers are increasingly using bossware to penalize workers for taking breaks to rest or use the restroom – whether directly by explicitly limiting the number of breaks employees can take and penalizing employees who take more break time than allotted, or indirectly by establishing work pace requirements that are so intense that workers cannot satisfy them if they stop to take breaks. Such practices violate the ADA because many workers with disabilities require occasional (or more frequent) breaks to manage their conditions. Workers with gastrointestinal and urinary tract disorders may need to use the restroom more frequently or at unpredictable times. Likewise, many workers with physical disabilities, including those with musculoskeletal disorders, chronic pain, and heart conditions, may need to take rest breaks more often than other workers. Eliminating breaks may exacerbate the symptoms of anxiety disorders, depression, and other psychiatric and cognitive conditions, particularly if combined with intense pacing requirements. Employers must reasonably accommodate such workers' needs when establishing break requirements.

Employers may argue that it would be an undue hardship to allow disabled workers to take additional breaks. But the employer’s burden for demonstrating undue hardship is high. The employer must demonstrate that the specific accommodation requested would cause significant difficulty or expense in light of the nature and cost of the accommodation, the employer’s financial resources, and how the accommodation would impact the facility’s operations.⁶³ The mere desire to earn a higher profit or increase worker productivity is not sufficient.

Employers will find it difficult to meet this burden, given that federal enforcement agencies have recognized that short breaks are both common in industry and a widely accepted form of accommodation.⁶⁴ Moreover, bossware is most appealing and cost-effective for large employers that have many employees performing very similar tasks. Such employers will have a particularly difficult time demonstrating that allowing disabled workers to take short breaks without penalty would impose an undue hardship if there are other workers present who could cover for the disabled worker during any breaks or downtime. Consequently, an employer that leverages bossware to automatically penalize disabled workers for taking breaks would likely violate the ADA unless it offers an alternative form of accommodation that would allow the employee to effectively manage their condition.

Disabled workers may be entitled to pace-related accommodations under the ADA

Just as with eliminating breaks, increasing the pace of work could exacerbate the symptoms of workers with many types of disabilities, including those with physical impairments such as arthritis, chronic pain, and musculoskeletal injuries; those with mental health conditions such as anxiety disorders; or those with cognitive impairments. Increasingly, employers are setting the pace of work based on the pace of all workers, an approach that will tend to disadvantage

⁶³ U.S. Equal Employment Opportunity Commission, Enforcement Guidance on Reasonable Accommodation and Undue Hardship under the ADA, issued Oct. 17, 2002, *available at* <https://www.eeoc.gov/laws/guidance/enforcement-guidance-reasonable-accommodation-and-undue-hardship-under-ada#undue>.

⁶⁴ *See id.*; 29 C.F.R. § 785.18; U.S. Dep’t of Labor, Office of Disability Employment Policy, *Accommodations for Employees with Psychiatric Disabilities*, *available at* <https://www.dol.gov/agencies/odep/program-areas/mental-health/maximizing-productivity-accommodations-for-employees-with-psychiatric-disabilities> (“Breaks according to individual needs rather than a fixed schedule, more frequent breaks and/or greater flexibility in scheduling breaks, provision of backup coverage during breaks, and telephone breaks during work hours to call professionals and others needed for support.”).

disabled workers unless proper accommodations are provided.⁶⁵ If an employer adopts a faster pace-of-work standard and enforces it rigidly, it could run afoul of the ADA's prohibition against "standards, criteria, or methods of administration . . . that have the effect of discrimination on the basis of disability."⁶⁶

As with requests for additional breaks, some employers may argue that they would suffer undue hardship if they were compelled to grant disabled employees' requests for accommodation with respect to bossware-enforced quotas and similar standards relating to pace of work. But here too, employers will likely struggle to make the necessary showing that the chosen work pace (or the manner of measuring it) is truly essential or that it would cause undue hardship to provide a disabled worker with a pace-related accommodation such as modified job duties or additional downtime. Courts have recently rejected employers' efforts to argue that granting pacing-related accommodations to disabled workers would impose undue hardship on the employer, including a 2020 case where a millwright requested pace accommodations to help manage a repetitive motion injury to his hand,⁶⁷ and a 2017 case involving a worker with diabetes who needed occasional breaks from his physically demanding and tightly scheduled electrical apprentice job.⁶⁸ In any event, the fact that companies operated without bossware until quite recently undercuts the argument that employers require such technologies or the faster pace that they make possible.

The effects of job strain and psychological stress

As with other health risks associated with bossware, workers with disabling mental health impairments have the right under the ADA to request accommodation if the effects of job strain will exacerbate their condition. The ADA explicitly covers mental health impairments to the

⁶⁵ See Nguyen, *supra* note 10, at 27 ("An individual's pace of work might be the basis for disciplinary action, but the pace is increasingly being determined by the pace of all workers in the shop or even across multiple locations.").

⁶⁶ 42 U.S.C. § 12112(b)(3)(A).

⁶⁷ See Carmichael v. Verso Paper, LLC, 679 F. Supp. 2d 109, 22 Am. Disabilities Cas. (BNA) 1307, 2010 U.S. Dist. LEXIS 934 (D. Me. 2010) (employer was not entitled to summary judgment as to employee's claim that employer did not provide employee reasonable accommodation because (1) employee arguably could have performed essential functions of employee's position with employee's proposed restrictions, (2) "pacing" accommodation was at least facially feasible, (3) employee consistently asked to be allowed to work within restrictions, and (4) employer produced no evidence to support employer's argument that pacing restrictions were "undue" hardship.).

⁶⁸ Harris v. M.C. Dean, Inc., No. 6:16-cv-1610-Orl-41KRS, 2017 U.S. Dist. LEXIS 223896, at *13 (M.D. Fla. Dec. 28, 2017) (rejecting employer's argument that periodic breaks were not a reasonable accommodation because employee's "project was on a very tight schedule, so making a certain amount of progress on a daily basis was an essential function of [employee's] job").

same extent as physical impairments.⁶⁹ Consequently, if bossware or related work policies and standards will exacerbate the symptoms of an employee with an anxiety disorder, a panic disorder, or any other psychiatric or mental health condition that substantially limits their daily life activities, that worker has the right to reasonable accommodation unless the employer can establish undue hardship.

For example, take an archetypal case where an employer uses bossware to enforce a strict and continuous work pace. If a worker suffers significant mental health impairments from the associated job strain, a reasonable accommodation might involve converting the enforced pace into a daily or weekly productivity quota, and giving the worker flexibility to take additional breaks or work additional hours to satisfy the daily or weekly quota. That additional level of control over the timing and pace of work might alleviate job strain without substantially affecting the worker's output or imposing significant additional expense on the employer. If so, the employer would be required to either provide that accommodation, or else provide the worker with an alternative accommodation after engaging in the interactive process.

C. Other federal and state laws

Federal statutes aside from the ADA and the OSH Act may also restrict certain uses of bossware to manage the productivity and work pace of employees or may grant employees protection from some of the associated health and safety risks. Some state laws also provide protections beyond those that their federal counterparts provide. Consequently, the absence of specific federal regulations or guidelines does not necessarily mean that a particular workplace practice complies with all applicable laws.

1. Federal law prohibits automated pay docking for breaks or downtime and may provide additional protection to certain workers

One harmful use of bossware is likely *per se* illegal under the Fair Labor Standards Act (FLSA), the main federal wage and hour statute. The FLSA prohibits employers from requiring employees to clock out or docking their pay if they take brief breaks during the workday, briefly engage in non-work-related activities, or have short periods where they are not at their assigned workstation. The Department of Labor's (DOL's) FLSA regulations state: "Rest periods of short duration, running from 5 minutes to about 20 minutes . . . must be counted as hours

⁶⁹ 42 U.S.C. § 12103(1)(A) (defining "disability," in pertinent part, as "a physical or mental impairment that substantially limits one or more major life activities").

worked.”⁷⁰ The DOL has consistently held that this rule extends to work breaks taken “for a myriad of non-work purposes – a visit to the bathroom, a drink of coffee, a call to check the children, attending to a medical necessity, a cigarette break, etc . . . without regard to the relative merits of an employee’s activities.”⁷¹ While the FLSA does not require employers to allow employees to take rest or bathroom breaks and generally allows employers to discipline employees for taking unpermitted or excessive breaks, the employee must still be paid for any brief breaks taken during the workday, regardless of whether those breaks are required by law or permitted by company policy.

A 2017 federal appellate court decision confirms this rule. In *Sec. of Labor v. American Future Systems*, an employer adopted a policy under which sales representatives had to log off of their computers if they needed to take any breaks during the workday.⁷² If the time logged off was greater than 90 seconds, the employer would not pay the employee for the period the employee was logged off. The Third Circuit Court of Appeals held that this policy blatantly violated the FLSA:

*[The employer’s policy] forces employees to choose between such basic necessities as going to the bathroom or getting paid unless the employee can sprint from computer to bathroom, relieve him or herself while there, and then sprint back to his or her computer in less than ninety seconds. If the employee can somehow manage to do that, he or she will be paid for the intervening period. If the employee requires more than ninety seconds to get to the bathroom and back, the employee will not be paid for the period logged off of, and away from, the employee’s computer. That result is absolutely contrary to the FLSA.*⁷³

Employers cannot, therefore, deploy systems that automatically clock employees out or withhold their wages if they deactivate a camera, delete a screenshot, leave their assigned workstation, or perform some other act tied to periods of downtime during the workday.

Workers might also have a right to take breaks pursuant to other federal laws. The Family and Medical Leave Act (FMLA) gives qualifying workers with serious medical conditions the right to

⁷⁰ 29 C.F.R. § 785.18.

⁷¹ U.S. Dep’t of Labor, Wage & Hour Div., Opinion Letter Fair Labor Standards Act (FLSA), 1996 DOLWH LEXIS 39, 1996 WL 1005233, at *1 (Dec. 2, 1996).

⁷² Sec’y United States DOL v. Am. Future Sys., 873 F.3d 420, 426 (3d Cir. 2017).

⁷³ *Id.* at 426.

intermittent leave, which can include mid-workday breaks if they are medically necessary – although, unlike ordinary rest breaks, breaks taken under FMLA are unpaid.⁷⁴ And unionized workers who have collective bargaining agreements governed by federal labor laws, such as the National Labor Relations Act or Railway Labor Act, may have additional rights or protections relating to breaks, the use of surveillance technology, productivity standards, or workplace health and safety. Those rights, however, depend on the terms of the collective bargaining agreement, as federal law provides no specific break rights to unionized workers.

2. State laws, including workers’ compensation laws, may provide protection or compensation for workers whose health is harmed or threatened

While this report focuses primarily on federal law, workers may also enjoy greater health, safety, and disability protections under the laws of some states. For example, California’s state-level OSHA has issued both a general standard for repetitive motion injuries⁷⁵ as well as a standard for injuries to hotel housekeepers that specifically cites repetitive motion injuries, excessive work rate, and inadequate recovery time between tasks as potential risk factors for injury.⁷⁶ Other state OSH offices are likely to adopt similar standards as rising injury rates strain their workers’ compensation systems. States may also interpret their equivalents of the General Duty Clause more expansively than does the federal OSHA.

A worker who actually experiences an injury due to fatigue, overexertion, or repetitive motion may file a worker’s compensation claim, although whether and to what extent this protects the injured worker’s rights varies dramatically by state. Some states protect injured workers from discrimination and even give them a right to reinstatement or hiring preference after they recover,⁷⁷ but others do not provide significant rights to injured workers other than their right to collect workers’ compensation payments.⁷⁸

⁷⁴ U.S. Dep’t of Lab., Wage and Hour Division, Op. Letter FLSA2018-19 (Apr. 12, 2018), *available at* https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/2018_04_12_02_FLSA.pdf.

⁷⁵ Cal. Code Regs. tit. 8 § 5110. That said, California’s ergonomics standard applies only *after* at least one repetitive motion injury has occurred, and the standard then applies only to employees “performing a job, process, or operation of identical work activity.” *See id.* § 5110(a).

⁷⁶ *See* Cal. Code Regs. tit. 8 § 3345(c)(4)(E).

⁷⁷ *See, e.g.*, Mass. Gen. L. ch. 152, §§ 75A (Massachusetts statute granting injured workers hiring preference) and 75B(2) (prohibiting retaliation against workers who file a workers’ compensation claim); Or. Rev. Stat. §§ 659A.040 (Oregon law prohibiting retaliation against workers who file a workers’ compensation claim) and .043 (granting injured workers a conditional right to reinstatement).

⁷⁸ Georgia, for instance, permits employers to fire workers in retaliation for filing workers compensation claims. *See Evans v. Bibb Company*, 178 Ga. App. 139, 140-41 (1986) (declining to recognize wrongful discharge claim or exception to at-will employment doctrine for workers’ compensation retaliation).

III. Protecting the Workforce: Recommendations for Policymakers and Enforcement Agencies

While current law provides workers, particularly those with disabilities, with some avenues to protect themselves from threats to their health and safety, the rise of bossware is exposing the shortcomings of current law in protecting workers from the more insidious risks posed by 21st century technologies. Consequently, additional action by policymakers is needed to ensure that productivity gains are not won at the expense of workers' physical and mental well-being.

A. *Extending OSHA's standards to cover the foreseeable consequences of bossware*

OSHA's broad mandate to protect workers' physical and mental well-being means that OSHA can and should issue standards and guidance as necessary to cover the health and safety implications of emerging workplace technologies. At present, there are at least three significant gaps in OSHA's standards that threaten to relieve employers of the obligation to protect their employees from some of the most significant health and safety threats that bossware will generate. Specifically, OSHA's standards:

- do not cover fatigue-related injuries or repetitive motion injuries;
- do not cover job strain or other mental health hazards; and
- do not apply at all to home offices or other remote workspaces.

Each of these gaps exists because of long-held assumptions and beliefs that bossware severely undercuts. Filling those gaps will be key to ensuring that workers' health and safety remain protected as worker monitoring technologies and techniques become increasingly sophisticated. To that end, and as explained further below:

1. OSHA should issue guidance and binding standards (with additional Congressional authorization where needed) relating to repetitive motion injuries, ergonomics, and fatigue-related injuries, including appropriate limits on employers' use of bossware to enforce productivity and work pace.
2. OSHA should issue standards protecting workers from the effects of job strain and any technologies, such as bossware, that are likely to cause or exacerbate job strain.

3. OSHA should enforce its standards in home offices and other remote workplaces where employers use bossware to monitor and control workers' activities.

To guide OSHA's standards and enforcement, NIOSH should conduct and publish research as necessary to determine the impact that bossware has on repetitive motion injuries, job strain, and other threats to workers' physical and mental health.

1. Covering the effects of fatigue and repetitive motion injuries

The reduced downtime and faster pace of work that bossware makes possible are likely to increase the incidence of acute fatigue-related injuries and illnesses, as well as repetitive motion injuries and other chronic conditions. The rapidly rising injury rates in fulfillment centers⁷⁹ suggest that regulatory action is needed for these closely related categories of health and safety risks.

Informally, OSHA's website acknowledges that "fatigue increases the risk for illnesses and injuries" and "is the body's signal that a rest period is needed."⁸⁰ NIOSH has a Center for Work and Fatigue,⁸¹ and NIOSH-backed studies have indicated that rest breaks can reduce the risk of certain types of injuries and improve workers' well-being, often without negatively impacting productivity.⁸² Nevertheless, OSHA has not issued standards requiring employers to provide workers with adequate opportunities to rest or take other fatigue-prevention measures during work shifts, despite having the authority to do so.⁸³

Unfortunately, OSHA is more constrained in its ability to issue standards regarding ergonomics and repetitive motion injuries. OSHA issued an ergonomics standard in 2000, but Congress passed Senate Joint Resolution (S.J.R.) 6 disapproving of the standard early the following year.

⁷⁹ See Evans, *supra* note 21.

⁸⁰ OSHA: Long Work Hours, Extended or Irregular Shifts, and Worker Fatigue, <https://www.osha.gov/worker-fatigue/hazards> (accessed June 1, 2021).

⁸¹ Center for Disease Control and Prevention: The National Institute for Occupational Safety and Health (NIOSH), <https://www.cdc.gov/niosh/topics/fatigue/center.html> (accessed June 1, 2021).

⁸² See, e.g., Anna Arlinghaus, et al., *The effect of rest breaks on time to injury – a study on work-related ladder-fall injuries in the United States*, 38 *Scand. J. Work. Environ. Health* 560 (2012); Awwad J. Dababneh, et al., *Impact of added rest breaks on the productivity and well being of workers*, 44 *Ergonomics* 164 (2001); Traci L. Galinsky, et al., *A field study of supplementary rest breaks for data-entry operators*, 43 *Ergonomics* 622 (2000).

⁸³ The only standard interpretation letter OSHA published on the subject, in 1986, indicated that "it has neither researched nor issued standards requiring that workers be permitted lunch and rest breaks in the course of their workday," but did not question its authority to do so. OSHA Standard Interpretation Letter dated Jan. 24, 1986, available at <https://www.osha.gov/laws-regs/standardinterpretations/1986-01-24>. Instead, the letter attributed OSHA's inaction to "the fact that such breaks are generally handled as labor-management negotiating issues and do not necessarily impact safety and health on many types of jobs." *Id.*

Under the Congressional Review Act, S.J.R. 6 voided the ergonomics standard and prohibited OSHA from adopting a substantially similar rule again.⁸⁴

Because there is no OSHA ergonomics standard, a worker with a repetitive motion injury today must wait until their injury reaches a point where they become disabled (thus triggering ADA protections) before their employer has a specific obligation to eliminate the drivers of that injury. By that point, of course, the worker's injury may have progressed to the point where they are unable to continue working in their former position at all. This absurd result effectively renders OSHA toothless against practices that give rise to repetitive motion injuries. The rise of bossware threatens to create an environment where these injuries occur far more frequently, as employees are forced to maintain a faster work pace while being deprived of the opportunity to take even brief breaks to recuperate from repetitive physical tasks.

To stop this accelerating threat to workers' health, Congress should repeal S.J.R. 6 and permit OSHA to issue binding standards relating to ergonomics and repetitive motion injuries. To guide those standards, NIOSH should intensively study how bossware and accelerated work pace impact workers' physical health. The research should examine not only the effect of algorithmically-enforced pace-of-work, but also the effect of employers using bossware to eliminate downtime, including both brief periods of rest and longer scheduled rest breaks.

Even if Congress fails to repeal S.J.R. 6, this additional NIOSH research, together with the considerable research that NIOSH has done on fatigue and ergonomics more generally, could help OSHA establish and refine standards on rest breaks and fatigue-related injuries. It would also help guide OSHA's enforcement of the General Duty Clause and allow it to publish clearer guidance indicating when it will consider an increase in the number or severity of repetitive motion injuries sufficient to constitute a violation of the General Duty Clause. In the interim, states with their own occupational safety agencies should also follow California and adopt standards that specifically require employers to protect their employees from repetitive motion injuries.

2. Creating OSHA standards regarding job strain and mental health

OSHA's current standards do not specifically address the effects of job strain or other threats to workers' mental health and the General Duty Clause does not extend to mental health. Under

⁸⁴ Until 2017, this was actually the *only* time that Congress successfully passed a joint resolution disapproving of a regulation under the Congressional Review Act. Nicholas Grabar & Sandra L. Flow, *Congress Rolls Back SEC Resource Extraction Payments Rule*, Harv. L. Sch. F. on Corp. Governance, Feb. 16., 2017, <https://corpgov.law.harvard.edu/2017/02/16/congress-rolls-back-sec-resource-extraction-payments-rule/>.

the ADA, employees may request reasonable accommodation if they have a disabling mental health condition – or if they develop such a condition during the course of employment – but OSHA’s standards provide no meaningful protection. And, unlike OSHA’s failed effort to issue ergonomics standards, OSHA has never made a serious effort to create standards that require employers to eliminate hazards to employees’ mental health.

The lack of safeguards to protect workers from known threats to their mental health is becoming increasingly indefensible with the advent of bossware and the decades-long body of research on the dangers of job strain. Enforcing worker productivity through the use of automated monitoring and management is uniquely likely to generate or exacerbate job strain due to the inherent reduction of worker control and the higher workload demands that invariably result from bossware adoption.

NIOSH should conduct research to confirm the impact of bossware on job strain and, by extension, on the various health harms (both mental and physical) associated with job strain. OSHA should issue standards requiring employers to adopt policies and practices sufficient to ensure that the use of bossware, and the enforcement of policies made possible by bossware, do not exacerbate job strain or otherwise pose a hazard to workers’ mental health. Workers should not have to wait until the mental strain rises to the level of disability or leads to physical harm before the law obliges employers to account for the mental health impact of bossware and related policies and practices.

3. Enforcing OSHA standards in home offices and other remote workspaces

Finally, OSHA should promulgate rules stating that if employers use technology that monitors workers’ activities in home offices and other remote workspaces, then OSHA’s standards apply to that remote workspace. The Labor Department’s decision to overrule OSHA in 2000 was premised on the belief that remote workers did not need OSHA protection because they enjoyed the privacy protection that working from home inherently offered at the time; the Assistant Secretary of Labor who oversaw OSHA in 2000 explained that “OSHA will respect the privacy of the home and expects that employers will as well.”⁸⁵ The logic was apparently that employees did not need protection from exploitative bosses because the privacy of the home meant that they were their own bosses.⁸⁶

⁸⁵ Swoboda, *supra* note 50.

⁸⁶ See Melissa A. Bailey, et al., Occupational Safety and Health Law Handbook 6-7 (“What OSHA had failed to realize was these new workers were not someone’s employees needing protection from exploitative bosses. They were

Companies obliterate those expectations and assumptions when they use bossware. If an employer uses technology to continuously supervise an employee in their home or penalizes the employee for leaving their remote workstation during the workday, then the employer is exercising control over the employee's workspace no less than it does in a traditional workplace. Under those circumstances, the employer should be subject to the same obligations to ensure that the workplace is safe and that it is not encouraging or permitting activities or practices that would harm the employee's health.

OSHA should therefore enforce OSHA's health and safety standards in remote workplaces if an employer (1) requires employees to install software that continuously monitors their activities on remote devices, or (2) requires employees to turn on webcams or otherwise collects information about the remote workspace or employees' physical movements in that workspace. At the very least, OSHA should issue guidance making it clear that if employers are going to install bossware, they cannot use it to impose restrictions on employees' physical activity that would constitute an OSHA violation if the same instruction were given in a traditional workplace. If an employer effectively prohibits an employee from leaving their workstation to use the bathroom during the workday, or penalizes them for doing so, that should be an OSHA violation regardless of where that workstation is located.

B. Confirming and enforcing employers' ADA obligations

The ADA is broad enough to give disabled workers an adequate remedy for adverse actions stemming from employers' use of bossware. The ADA prohibits employers from adopting new technologies, standards, or policies without first accounting for the possibility that adoption of those standards would disadvantage disabled workers, as well as those workers' right to reasonable accommodation. Delegating employment decisions to automated systems – or replacing human supervisors with bossware to the point where humans will hesitate to override the recommendations of such systems⁸⁷ – could also violate the requirement that employers engage in an interactive process with disabled workers to identify reasonable accommodations.⁸⁸

their own bosses, or they certainly saw themselves as such. And they saw OSHA intervention not as protective but intrusive.”).

⁸⁷ Cf. Kaplan, *supra* note 25, at 32 (“The Teamsters, the union that represents UPS employees, won contract language that says drivers can’t be fired based solely on the numbers in their telematics reports, but supervisors have found workarounds, and telematics-related firings have become routine.”).

⁸⁸ See Nguyen, *supra* note 10, at 27 (“Human managers are being replaced by algorithmic managers, but unlike working with a human, it is nearly impossible to argue with an algorithm.”).

The EEOC, which is responsible for enforcing Title I of the ADA, should issue formal guidance acknowledging these realities and clarifying that employers cannot use bossware to establish or enforce standards that inherently disadvantage disabled workers. Such guidance would both provide signposts for courts deciding disability discrimination cases and put pressure on employers to proactively account for the needs of disabled workers when deciding whether and how to use these emerging technologies and techniques.

C. Regulating technology and exploitative practices directly

There are other potential paths towards thwarting the health and safety threats associated with bossware. One would be federal or state-level legislation regulating the technologies and data collection practices that underpin bossware. Strong data privacy legislation could restrict employers' ability to collect or use data on workers. Section 204 of the proposed Massachusetts Information Privacy Act, which is currently pending before the Massachusetts Senate, would limit the purposes for which employers could monitor workers.⁸⁹ It would also require the employer to narrowly tailor any monitoring so that it collects no more information than is necessary to serve an allowed purpose.⁹⁰

California passed comprehensive consumer privacy legislation in 2018 that was expanded by a 2020 ballot proposition. The law gives individuals the right to know what personal data has been collected about them and requires companies to delete, correct, or limit the use of personal data at the request of the individual. The law's provisions currently exempt most data that an employer collects on its employees until 2023.⁹¹ If California's legislature passes worker privacy legislation before then – or if it simply allows the employee data exemption to sunset – California workers could be protected from some of the more intrusive forms of monitoring and data collection.

Another approach would be to regulate the exploitative employment practices that employers rely on bossware to implement or enforce. California's Assembly is considering AB 701, a bill relating to work pace that would apply to employers operating warehouses and distribution centers.⁹² The bill would require greater transparency regarding the quotas imposed on warehouse and distribution center workers.⁹³ It would also prohibit covered employers from

⁸⁹ S.B. 46, 192nd Gen. Ct., § 4(b)(1) (Mass. 2021), available at <https://malegislature.gov/Bills/192/S46.pdf> (accessed May 26, 2021).

⁹⁰ *Id.* § 4(b)(2).

⁹¹ Cal. Civ. Code § 1798.145(m)(1)(A) & (m)(4) (2021).

⁹² Assem. B. 701, 2021-22 Reg. Sess., as amended May 17, 2021 (Cal. 2021), available at https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=202120220AB701 (accessed May 26, 2021).

⁹³ *Id.* § 2.

adopting quotas that would prevent compliance with either health and safety laws or California’s meal and rest break laws, and require such employers to count time that employees take to comply with health and safety laws as productive time.⁹⁴ Such protections could be made still stronger if paired with something like the proposed Illinois Employee Security Act, which would limit the reasons for which employers could fire employees and require employers to engage in progressive discipline before terminating an employee.⁹⁵

Such legislation targeting either the means or ends of bossware would effectively manage the health and safety risks associated with these technologies and practices while also providing broader protections for workers’ privacy, autonomy, and dignity. Ideally, advocates should make a long-term push for legislation on worker privacy and productivity management, while simultaneously advocating for more immediate and aggressive enforcement and expansion of existing workplace health and safety protections.

IV. Recommendations for Workers and Advocates

Workers have some strong legal remedies under existing law, but many may not know their rights or feel empowered to exercise them. As a result, advocates, unions, and workers should focus on educating workers and employers about existing obligations, as well as the need for future policy change. To help exercise their rights:

- Disabled workers should inform their employers of any limitations that require them to take breaks, have a less onerous pace-of-work, or be provided with another form of reasonable accommodation.
- Workers should consult with an attorney or contact OSHA (and, where applicable, state occupational safety and health authorities)⁹⁶ whenever employers’ algorithmically tracked pace-of-work requirements deprive workers of a reasonable opportunity to use restroom facilities whenever they need to do so.
- Workers who experience injury or illness as a result of increased work pace requirements, or other effects of new workplace technologies and practices, should promptly file a worker’s compensation claim and note any limitations on physical activity upon their return.

⁹⁴ *Id.*

⁹⁵ H.B. 3530, 100th Sess., § 10 (Ill. 2021), available at <https://www.ilga.gov/legislation/fulltext.asp?DocName=&SessionId=110&GA=102&DocTypeId=HB&DocNum=3530&GAID=16>.

⁹⁶ In this section, references to OSHA offices should be interpreted as referring both to the regional OSHA office covering a worker’s geographic location and, where applicable, to state occupational safety and health authorities.

Additionally, even in areas where further legislative or regulatory action is needed to fully protect workers' rights, workers and their advocates should still document and report any negative health and safety consequences stemming from employers' use of bossware. The documentation should include:

- The names of any programs or equipment used to track them,
- Descriptions of what the technology does and what the technology requires workers to do,
- What accommodations employees have requested, and
- How the technology was used to enforce workplace standards and/or how it led to an adverse employment action.

An employee can report hazards either internally to management personnel, externally by filing an OSHA complaint, or both:

- Workers who suffer repetitive motion injuries should report the injury and note any work pace standards, as well as any technological aids that the employer used to enforce such standards, that were in place during the period preceding the injury.
- Remote workers who are injured as a result of employer-provided or employer-mandated equipment should report the injury and note any equipment whose use contributed to the injury.

Both internal reports of physical injuries and illnesses to management and external complaints to OSHA or state enforcement agencies are protected activity under the OSH Act,⁹⁷ and OSHA complaints can be filed confidentially. While OSHA and its state-level counterparts will not follow up on every complaint, filing them will both highlight potential threats to their health and safety that OSHA might enforce under the General Duty Clause and help accumulate evidence of such threats that can serve as a basis for future regulations or legislation.

Workers' options for reporting threats or harm to their *mental* health are more limited. Because the General Duty Clause focuses only on physical harm and OSHA has no standards addressing mental health hazards, OSHA's complaint form specifically states that it is to be used solely to

⁹⁷ Investigator's Desk Aid to the Occupational Safety and Health Act (OSH Act) Whistleblower Protection Provision, OSHA, Jan. 9, 2019, at 5, available at <https://www.osha.gov/sites/default/files/11cDeskAid.pdf> ("Filing oral or written complaints about occupational safety or health with the employee's supervisor or other management personnel is also a protected activity. Expressing occupational safety and health concerns with management is a protected activity even when the complainant is a manager or other employee with occupational safety or health responsibilities as part of his or her duties.").

report threats of physical harm.⁹⁸ And while the best reading of the OSH Act’s whistleblower provisions is that they protect all good-faith reports of health and safety concerns, the absence of on-point statutory or regulatory standards relating to mental health may make workers who make such complaints more vulnerable to retaliation. Consequently, workers who develop anxiety, depression, or other mental illnesses or psychiatric impairments as a result of an employer’s use of intrusive monitoring and management technologies should document both their symptoms, diagnoses, and any technologies and policies that contributed to it. They should then consult with a local workers’ rights organization or an attorney to explore options for reporting their concerns to the employer or to federal, state, or local enforcement agencies.

Organizations that advocate for workers’ rights should also establish a system where workers who experience health or safety threats stemming from an employers’ use of bossware can confidentially report their concerns and provide related documentation of the potential threats and the technology and employer practices that generated them. Such a system would both allow for workers’ rights organizations to inform employers of potential hazards without exposing individual workers to retaliation and serve as a repository of information that can be used to advocate for stronger legislative or regulatory action to protect workers.

Lastly, workers’ advocates should push for legislation and regulation targeting the exploitative practices that bossware enables, such as mandating a dangerously fast pace of work and punishing workers for breaks and downtime. One recent example of such an effort is an open letter that a large number of civil rights and worker advocacy organizations published on Amazon’s “Prime Day” this year, calling for “lawmakers and regulators [to] do everything in their power to end” to end Amazon’s automatically enforced “rate” and “time off task” standards before they “become the standard for the entire economy.”⁹⁹ Similar public-facing advocacy campaigns will be needed as more employers leverage technology to implement policies and practices that threaten workers’ well-being.

V. Recommendations for Employers

A growing number of employers are being lured by the promise of using bossware to accelerate the pace of work by eliminating breaks and even brief moments of employee downtime, all under the guise of increasing productivity. Employers must be wary of using technological systems that promise short-term productivity gains at the risk of workers’ physical and mental health.

⁹⁸ U.S. Dep’t of Lab. Form OSHA-7 (Notice of Alleged Safety or Health Hazards), <https://www.osha.gov/sites/default/files/publications/osha7.pdf>.

⁹⁹ Open Letter from Athena Coalition, *supra* note 21.

Given the ethical and legal risks of aggressive implementation of bossware, employers should avoid using bossware to continuously monitor workers or perform managerial functions. Employers who do deploy bossware must ensure that they are complying with applicable laws protecting workers health and safety before using new technologies that may increase productivity at the expense of workers' well-being:

- Employers must avoid deploying systems that dock workers' pay based on algorithmically-monitored downtime or time spent off-task.
- Employers cannot deploy or use monitoring or surveillance technologies in a manner that discourages or prevents workers from using the restroom when they need to.
- Implementing algorithmic management systems does not relieve employers of the obligation to engage in an interactive process with disabled workers to determine what accommodations they may need to perform the essential functions of a job.
- Employers cannot implement systems that will directly or indirectly penalize disabled workers for needing reasonable accommodation to perform essential job functions, or for needing additional time or other accommodations to complete their assigned tasks.

Even leaving legal considerations aside, employers should bear in mind that:

- Injured workers impose costs on employers in the short term due to the effects of absenteeism and turnover, and in the longer term due to higher medical costs and workers' compensation premiums.
- Workers who experience job strain are more likely to experience anxiety, depression, and other mental health disorders, which may have a negative impact on productivity and employer costs.¹⁰⁰

Implementing automated surveillance and management systems to increase productivity demands and tighten control over workers thus may have the opposite of the intended effect.

Conclusion

Employers' increasing use of bossware to monitor and manage their workers continues a disturbing trend where companies use data collection and algorithmic systems as a force-multiplier for the control they have over their workers, to the increasing detriment of

¹⁰⁰ See generally Wayne N. Burton, et al., *The association of worker productivity and mental health: a review of the literature*, 1 Int'l J. Workplace Mgmt. 78 (2002).

workers' rights and well-being.¹⁰¹ The threats to workers' privacy and autonomy are disturbing, but current privacy laws do little to deter employers wishing to use emerging technologies to increase control over their workers.

Civil society organizations and policymakers have proposed legislation that would strengthen worker privacy protections¹⁰² and target exploitative workplace practices and technologies directly.¹⁰³ Working toward passage of such legislation is essential, and may ultimately prove the most comprehensive and effective means to protect workers from the full scope of harms that bossware poses to workers' autonomy and dignity. In the meantime, stronger enforcement and implementation of existing laws protecting workers' health and safety, as urged in this report, provide a route to hold employers accountable for exploitative uses of bossware without the need for sweeping new legislation.

Employers who deploy automated systems and use them to enforce rigid productivity quotas will run afoul of employers' obligation to reasonably accommodate disabled workers and avoid practices that disadvantage them. The use of bossware to enforce an unrelenting work pace will raise the risk to all workers of physical and mental health harm, particularly those relating to ergonomic factors and job strain. Here, additional policy action is needed. The purpose of the OSH Act is to ensure workers are protected from injuries and illnesses *before* they occur. The system Congress constructed is failing, not succeeding, if workers must wait until they are injured or disabled before they have a legal remedy for the foreseeable health and safety consequences of employers' practices. Workers and their advocates thus should work for the expansion of workers' health and safety protections while vindicating workers' existing rights.

¹⁰¹ Adler-Bell & Miller, *supra* note 6.

¹⁰² See, e.g., Worker Privacy Act (Discussion Draft), Georgetown Law Center on Privacy & Technology (2019), <https://medium.com/center-on-privacy-technology/a-solution-to-extensive-workplace-surveillance-8f5ab4e28b4d>. See also *supra* notes 89-95, and accompanying text.

¹⁰³ See *supra* notes 89-95 and 98, and accompanying text.