

POLICY BRIEF

Policy and practice brief on the 2019 New Swine Inspection System, line speeds, and workers



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Summary

The U.S. Department of Agriculture (USDA)’s Food Safety Inspection Service (FSIS) introduced the Modernization of Swine Slaughter Inspection Ruling and New Swine Inspection System in 2019 (USDA FSIS, 2019). This ruling eliminated the cap on the maximum swine-processing line speed, which had been regulated since 1981, instead allowing processing facilities to determine their own line speeds. Workers and worker advocacy groups immediately met the *New Swine Inspection System* with public criticism, citing concerns for worker safety under the new system. The *New Swine Inspection System* is currently being used in six time-limited trial facilities with an end date of May 2025, while data is collected to inform the future of the system (USDA, 2025). In this policy and practice brief, we discuss the effect of the *New Swine Inspection System’s* increased line speeds on workers in swine processing facilities, using a review of the literature. We found that there is strong evidence that line speed is associated with higher worker perceptions of injury risk, lower worker well-being, and higher risk of injuries from repetitive tasks. Additionally, line workers unanimously oppose increases to line speed and are advocating for reduced line speeds.

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Author Note

Kelsey Crawford’s master’s in public health (MPH) capstone project was the basis for this article.

Keywords

line speed, line worker, meatpacker, meatpacking, swine processing, swine production, worker safety, worker well-being, meatpacking injuries, *New Swine Inspection System*, Modernization of Swine Slaughter Inspection Ruling

Definitions

Line speed: The speed at which an animal is processed through a plant. This is regulated by the USDA. As of February 2025, the maximum line speed in most swine slaughter plants is capped at 1,106 heads per hour, although there is no maximum line speed limit in the six time-limited trial *New Swine Inspection System* facilities (USDA, 2019).

Line worker or meatpacker: The worker responsible for processing the animal as it moves along the automated moving “line,” which is a conveyor belt with a set speed. We are discussing in particular the workers who do tasks of processing, cutting, deboning, shaving, grinding, and packaging the pork along the line as it is moving.

Abbreviations

National Institute for Occupational Safety and Health	NIOSH
Occupational Safety and Health Administration	OSHA
The United Food and Commercial Workers International Union	UFCW
U.S. Department of Agriculture	USDA
USDA Food Safety Inspection Service	FSIS
U.S. Department of Health and Human Services.....	HHS

Modernization of Swine Slaughter Inspection Ruling: Policy Review

In 2019, the FSIS under the Trump Administration introduced the Modernization of Swine Slaughter Inspection Ruling, revoking maximum line speeds and replacing them with an optional *New Swine Inspection System* (USDA, 2019).

Overview of the New Swine Inspection System

The *New Swine Inspection System* allowed swine slaughter facilities to run their line speed as fast as desired to increase productivity, asserting that “this increase in line speed is synonymous with an increase in industrial efficiency” (USDA, 2019, p. 52335). This decision was unanimously praised by the swine industry and unanimously criticized by worker organizations; both perspectives are cited in the ruling, but the USDA explicitly states that the ruling does not consider worker safety or well-being (USDA, 2019).

After releasing the *New Swine Inspection System*, the USDA stated it does not have “authority to regulate issues related to establishment worker safety” (USDA, 2019, p. 52305). The Occupational Safety and Health Administration (OSHA), the body regulating worker safety for meatpackers, has documents recommending that processing facilities decrease their lines speeds to lower worker injury rates (OSHA, 1993). These publicly available documents were cited in the Modernization of Swine Slaughter Inspection Ruling, but OSHA was not involved in developing the *New Swine Inspection System* and does not have jurisdiction over issues of line speed; the USDA is the single regulatory agency covering line speeds. The FSIS declares that the *New Swine Inspection System* “remove[s] unnecessary regulatory obstacles to industry innovation by revoking maximum line speeds and allowing establishments flexibility to reconfigure evisceration lines” (USDA, 2019, p. 52300).

Timeline of the New Swine Inspection System

The United Food and Commercial Workers International Union (UFCW) filed a lawsuit immediately following the Modernization of Swine Slaughter Inspection Ruling in an effort to halt the increase in line speeds

(UFCW, 2021). Seven states' attorneys general filed briefs supporting this lawsuit (UFCW, 2021). In June 2021, the Federal Court ordered the FSIS to remove the portion of the *New Swine Inspection System* that eliminated maximum line speed caps (UFCW, 2021). All processing facilities were ordered to cap their line speeds at 1,106 heads per hour (USDA, 2019). Thirty days later, the FSIS granted participation in a time-limited trial of the *New Swine Inspection System* to six processing facilities located in Illinois, Michigan, Minnesota, Nebraska, and Pennsylvania. According to the U.S. Senate Committee on Agriculture, Nutrition, and Forestry (2023), these six swine processing facilities are high-volume, in states that are responsible for processing 30% of the U.S. pork supply, and 40% of hogs in the U.S. are located within 100 miles of these six plants.

This *New Swine Inspection System* time-limited trial has been extended four times, with a current expiration date of May 15, 2025 (USDA, 2025). The National Pork Producers Council has stated, "We appreciate USDA and FSIS for listening to the pork industry and taking another step toward making permanent these increased line speeds" (National Pork Producers Council, 2024, para. 2). Meanwhile, as they have been for decades, workers and worker-led organizations are publicly fighting and protesting the increase in line speed.

Consideration of Workers in the New Swine Inspection System

The FSIS did not indicate in the Modernization of Swine Slaughter Inspection Ruling that it conducted or solicited a comprehensive risk assessment or literature review prior to the Ruling. There are indications that there are already serious worker-safety issues in the facilities in the time-limited trial (Barrett, 2019; Norfolk Daily News, 2024; Polansek & Huffstutter, 2021). One participating facility is operated by Tyson Fresh Meats, Inc. According to the Federal Good Food Purchasing Coalition's (2023) report, "Impact Analysis, Measuring and Modeling Climate, Environmental, and Social Impacts of Federal Food Procurement," Tyson has the highest number of serious OSHA violations and is also one of the largest recipients of USDA procurement contracts. While USDA procurement contracts are intended to be guided by the agency's Agriculture Acquisition Regulation labor standards, in some cases these contracts are still being awarded to companies with many labor violations (Federal Good Food Purchasing Coalition, 2023). These government contracts are lucrative. For example, Tyson was paid over US\$248 million by the USDA for contracts in 2022 (Federal Good Food Purchasing Coalition, 2023). These high payouts are another motivation for meatpacking companies to increase line speeds and minimize injury reporting.

Context for the New Swine Inspection System

The *New Swine Inspection System* has an impact on workers that is influenced by other factors, including the work setting of the processing line, demographics of swine processing line workers, and evolution of line speed policies.

Work Setting of the Swine Processing Line

The swine-slaughter work environment is fast-paced and repetitive. After each hog is slaughtered and hung on the line, workers butcher, slice, and package the carcass based on various standards and cuts (Schweihofer, 2014). Each worker on the slaughter line is assigned to one task, which they do repeatedly at the speed of the line (Schweihofer, 2014). Cuts of the hog move along a conveyor belt, and the worker must perform their cut or packaging task quickly as the line is moving (Schweihofer, 2014). Based on the maximum line speed established by the USDA in 2019, the worker is completing this task within three seconds and repeating the same movement at least 8,848 times per day. This pace is increased limitlessly for the thousands of workers in the six time-limited trial *New Swine Inspection System* processing facilities that have unlimited line speeds.

In addition to these stressors, line workers are often stationed very close to one another in the slippery, cold environment using automated knives, saws, and other sharp tools (Culp et al., 2008; Ebner et al., 2016). According to workers in a 2015 Oxfam report, line workers are unable to take a break to use the restroom or hydrate since the line never stops moving. Of these workers, almost all reported being denied a restroom break, wearing diapers, or urinating on themselves while working (Oxfam, 2015). One line worker told

researchers, “I had to wear Pampers. Myself and many, many others had to wear Pampers. It made me feel ashamed” (Oxfam, 2015, “Pushed to the limit—and beyond,” para. 2).

Swine Processing Workers

Meatpacking is one of the most dangerous industries for workers in the U.S., according to U.S. Bureau of Labor Statistics data (Smith, 2017). A study by Culp et al. (2008) found that there is at least a 33% chance of traumatic injury for swine processing line workers after just six months of employment, and data from OSHA show that each day, 27 U.S. line workers experience an amputation, loss of an eye, or injury requiring hospitalization (Rimmler-Cohen, 2023). In a survey conducted by Nebraska Appleseed in 2009, one anonymous meatpacking worker was quoted as saying, “They should recognize that we aren’t machines” (Nebraska Appleseed, 2009, “Workers Comments from the Survey,” para. 2).

A study conducted by Leibler and Perry (2017) found that line workers reported more than two times as many injuries to them than industry estimates show. A report by Human Rights Watch (2004) quoted a meatpacker who said, “They have us under threat all the time. They know most of us are undocumented—probably two-thirds. All they care about is getting bodies into the plant. My supervisor said they say they’ll call the INS [Immigration and Naturalization Service] if we make trouble” (Compa et al., 2004, “Immigrant Workers in the Meat and Poultry Industry,” para. 1). There are discrepancies in the meatpacking industry’s injury data for many reasons, including immigration and language barriers, lack of federal protections, and the historical destabilization of food-chain labor in the U.S.

An estimated half of meatpackers are foreign-born, and most researchers estimate that at least one quarter of all meatpackers are undocumented, although these numbers are difficult to estimate and are thought to be higher (Bauer & Ramírez, 2010; Compa et al., 2004; Passel, 2005). Workers claim this results in under-reporting due to fear of deportation if they were to interact with OSHA, and workers report experiencing threats to their immigration status from their employers if they do report injuries (Bauer & Ramírez, 2010; Compa et al., 2004; Constance et al., 2023; Passel, 2006). Line workers also report fearing retaliation from employers due to at-will employment laws and a lack of federal whistleblower protections (Fritzsche, 2013).

Line Speed

Line speeds have been regulated by the USDA in the swine industry since 1981 (Office of the Federal Register, 1981). Currently, the maximum line speeds in most swine slaughter plants are capped by the federal government at 1,106 heads per hour, meaning 18 per minute, or one per three seconds; there is currently no limit in the six time-limited trial *New Swine Inspection System* facilities (USDA, 2019). Line speeds have been continually increased over the years; some facilities have shown increased line speed by 50% within just a five-year window (Ken & León, 2022; McConnell, 2019). Facilities often increase line speed without increasing labor proportionately, forcing workers to repeat movements more often, more quickly, and under more strain (Ken & León, 2022; McConnell, 2019). Maximum line speed caps were established and upheld by the USDA to facilitate easier food safety inspections, and the USDA acknowledges that there has never been explicit consideration of worker well-being regarding line speed (USDA, 2019).

OSHA is responsible for the implementation of safety regulations and standards for this industry, but there are no specific OSHA regulations that protect workers from line speed, repetitive stress, or related musculoskeletal injuries, which are key risks faced by processing line workers, especially with increased line speed (U.S. Government Accountability Office [GAO], 2016). These issues fall under OSHA’s General Duty Clause, which is the catch-all statute requiring “a place of employment which are free from recognized hazards” (OSHA, 2021, Sec. 5 “Duties,” para. 1), and when OSHA does complete investigations, it rarely issues citations based on this clause (OSHA, 2024). According to OSHA itself in its 2021 COVID-19 Emergency Temporary Standard, the General Duty Clause “is not a good tool for requiring employers to adopt specific, overlapping, and complementary measures” (OSHA, 2021, p. 32418).

Review of the Literature

We reviewed available literature on the impacts of increased line speed on processing line worker injuries and well-being, and found that the associated increase in repetitive movements from increasing line speed will increase worker injuries, and that workers perceive unlimited line speed as a significant risk to their health and well-being.

Line Speed and Worker Injuries

There is evidence that line speed is positively correlated with line worker injury based on worker self-reports of perceptions of line speed and perceptions of injury rates. In a study of processing line workers in Arkansas, Choi and Constance (2019) found that all 198 participants reported increased difficulties at work when the line speed increased, and half reported feeling unsafe doing their job at the current line speed. Every worker who spoke with Human Rights Watch in a 2019 report cited speed of work as a major risk of injury and illness. In multiple studies, line workers have reported that supervisors control the line speed in their facilities and the workers feel that supervisors do not care about worker safety or safety procedures, leaving them without proper injury reporting channels (Choi & Constance, 2019; GAO, 2016; Lander et al., 2012).

The National Institute for Occupational Safety and Health (NIOSH) conducts Health Hazard Evaluations of workplaces, including meat-processing plants, in response to specific requests, but only in select cases where there is “reasonable cause to justify conducting an investigation” (HHS, Centers for Disease Control and Prevention, & National Institute for Occupational Safety and Health [NIOSH], 2009, Sec. 85.4 “Acting on requests,” para. 1), and NIOSH states they may not have authority to conduct an investigation without the cooperation of the employer (HHS, 2009, Sec. 85.4). Notably, in one 2014 evaluation of a Maryland poultry plant, NIOSH researchers found that 81% of the jobs had hand activity levels above the American Conference of Governmental Industrial Hygienists’ action limit, which is defined by the level at which there is moderate risk for musculoskeletal disorders (Ramsey et al., 2015). This same report concluded that 76% of participants tested abnormal on a nerve conduction test of one or more hands (Ramsey et al., 2015).

The literature shows that meat processing workers experience high rates of repetitive stress injuries, carpal tunnel syndrome, and nerve issues in the hand and arm, and these repetitive movement injuries are the most common injuries for line workers (Arcury et al., 2015; Choi & Constance, 2019; GAO, 2016; Lander et al., 2012; Ramsey et al., 2015). As line speed increases, repetitive movements for workers increase. A study by Rosenbaum et al. (2015) found distinct levels of risk based on the type of job being performed by the line worker (such as deboning versus cutting) raising considerations of differential risk for types of workers.

HHS and NIOSH have reportedly conducted minimal research on line speed, and these studies have often provided inconclusive results due to lapsed time (GAO, 2016). Even so, in a 2016 GAO report on workplace safety and health, NIOSH reported that line speed, in conjunction with other factors, “affects the risk of both musculoskeletal disorders and injuries among workers” (p. 30). NIOSH and OSHA have studied ergonomic risks and recommended that employers protect workers “by reducing the amount of time the employee performs repetitive motions, by reducing the speed at which the employee performs the tasks, or by eliminating certain repetitive tasks during recovery” (as quoted in Fritzsche, 2013, “Processing Line Speeds Blamed,” para. 6). The literature recommends that future studies gather primary data to quantitatively determine the relationship between line speed and worker injury rates, but there are many barriers to conducting this research (GAO, 2016).

Line Speed and Worker Well-Being

The literature shows that line speed is negatively correlated with line worker well-being. The Southern Poverty Law Center (Fritzsche, 2013) reported that workers overwhelmingly report being unable to influence line speed and feeling desperate to slow down the line. Workers report struggling to keep up with the line speed and being threatened by supervisors when they were unable to perform at the speed, requested restroom or water breaks, experienced injury, or complained of pain (Ebner et al., 2016; McConnell, 2019).

Workers report that line speed is not the only threat to their well-being, but it is a major source of stress and worry (Choi & Constance, 2019; GAO, 2016; Lander et al., 2012). In a 2021 study, Ramos et al. found that line workers were aware of behaviors that may reduce their risk of injury, such as sharpening their knives or adjusting their posture,, but felt they were unable to engage in these behaviors due to the speed of work. A worker was quoted in this study saying,

We don't speak English. We don't have another option. We don't have another form of work. Because that is where they pay us the best and we want to get ahead, but that way we are also killing ourselves because every day the line is faster. (Ramos et al., 2021, "Workers conform because they feel powerless," para. 2)

Limitations

There are limitations to the results of this review of the literature. Most of the primary data regarding line speed and worker injury or well-being is collected from the perspective of the worker, rather than using quantitative measures. While worker perspectives are valuable data, this limitation creates barriers to addressing the question of what an appropriate line-speed cap is and how much line speed must be reduced to decrease worker-injury rates. Line speed does not harm workers in a vacuum; rather, it is interacting with the many other dangerous factors that affect swine-processing line workers, making this a complicated issue to quantify. Other factors in this relationship include variable facility structures, work types, labor-to-livestock ratios, and workforce demographics.

Conclusion

There is sufficient evidence of the negative impacts of increased line speed on worker safety and well-being to end the current time-limited trial of the New Swine Inspection System in the six major pork producing facilities. Research is conclusive that the associated increase in repetitive movements from increasing line speed will increase worker injuries, and that workers perceive unlimited line speed as a significant risk to their health and well-being. Bills like the Protecting America's Meatpacking Workers Act are a means to limit line speed and halt the *New Swine Inspection System* time-limited trial until objective safety assessments can be conducted, and these provisions could also be incorporated into the next farm bill. We found gaps in the literature regarding the appropriate line speed, processes to limit work injuries and bolster well-being, the extent of unreported labor violations in the meatpacking industry, and how line speed interacts with other factors to influence workers. Line workers are sounding the alarm about the dangers of increased line speed under the *New Swine Inspection System* and its impact on their safety and well-being. As one line worker said to Nebraska Appleseed in 2009—15 years ago: "they fixed some things, but the line speed kills you" (Nebraska Appleseed, 2009, "Workers Comments from the Survey," para. 2). 

References

- Arcury, T. A., Mora, D. C., & Quandt, S. A. (2015). "...you earn money by suffering pain": Beliefs about carpal tunnel syndrome among Latino poultry processing workers. *Journal of Immigrant and Minority Health, 17*, 791–801. <https://doi.org/10.1007/s10903-013-9967-5>
- Barrett, M. (2019, February 18). 'Egregious inhumane' treatment of hogs found at facility courted by the state. *Michigan Live*. <https://www.mlive.com/news/kalamazoo/2019/02/egregious-inhumane-treatment-of-hogs-found-at-facility-courted-by-the-state.html>
- Bauer, M., & Ramirez, M. (2010). *Injustice on our plates*. Southern Poverty Law Institute. <https://www.splcenter.org/20101107/injustice-our-plates>
- Choi, J. Y., & Constance, D. H. (2019). Marshallese migrants and poultry processing. *Journal of Rural Social Sciences, 34*(1), Article 6. <https://egrove.olemiss.edu/jrss/vol34/iss1/6/>

- Compa, L., Fellner, J., Parker, A., & Pier, C. (2004). *Blood, sweat, and fear: Workers' rights in U.S. meat and poultry plants*. Human Rights Watch.
<https://www.hrw.org/report/2005/01/25/blood-sweat-and-fear/workers-rights-us-meat-and-poultry-plants>
- Constance, D. H., Choi, J. Y., & Hendrickson, M. K. (2023). The Southern Model revisited: The intersection of race, ethnicity, immigration, and health and safety in poultry processing. *Sustainability*, 15(18), Article 13945.
<https://doi.org/10.3390/su151813945>
- Culp, K., Brooks, M., Rupe, K., & Zwerling, C. (2008). Traumatic injury rates in meatpacking plant workers. *Journal of Agromedicine*, 13(1), 7–16. <https://doi.org/10.1080/10599240801985373>
- Ebner, N., Halpern-Finnerty, J., Jayaraman, S., Cain, M., Moulton, A., & Benner, C. (2016). *Wages and working conditions in Arkansas poultry plants*. The Northwest Arkansas Workers' Justice Center.
https://www.uusc.org/sites/default/files/wages_and_working_conditions_in_arkansas_poultry_plants.pdf
- Federal Good Food Purchasing Coalition. (2023). *Measuring and modeling climate, environmental, and social impacts of federal food procurement*.
<https://my.visme.co/utills/goto/1498813178?url=http%3A%2F%2Fwww.fedgoodfoodpurchasing.org%2Fresources%2Fimpact-analysis-full-report>
- Fritzsche, T. (2013). *Unsafe at these speeds*. Southern Poverty Law Center. <https://www.splcenter.org/20130228/unsafe-these-speeds>
- Human Rights Watch. (2004). *Blood, sweat, and fear: Workers' rights in U.S. meat and poultry plants*.
<https://www.hrw.org/report/2005/01/25/blood-sweat-and-fear/workers-rights-us-meat-and-poultry-plants>
- Human Rights Watch. (2019). "When we're dead and buried, our bones will keep hurting": Workers' rights under threat in US meat and poultry plants. https://www.hrw.org/report/2019/09/04/when-were-dead-and-buried-our-bones-will-keep-hurting/workers-rights-under-threat#_ftn133
- Ken, I., & León, K. S. (2022). Regulatory theater in the pork industry: How the capitalist state harms workers, farmers, and unions. *Journal of Crime, Law and Social Change*, 78, 599–619. <https://doi.org/10.1007/s10611-022-10019-0>
- Lander, L., Sorock, G., Stentz, T. L., Smith, L. M., Mittleman, M., & Perry, M. J. (2012). A case-crossover study of laceration injuries in pork processing. *Occupational & Environmental Medicine*, 69(6), 410–416.
<https://doi.org/10.1136/oemed-2011-100339>
- Leibler, J. H., & Perry, M. J. (2017). Self-reported occupational injuries among industrial beef slaughterhouse workers in the Midwestern United States. *Journal of Occupational and Environmental Hygiene*, 14(1), 23–30.
<https://doi.org/10.1080/15459624.2016.1211283>
- McConnell, M. (2019). "When we're dead and buried, our bones will keep hurting": Workers' rights under threat in US meat and poultry plants. Human Rights Watch. <https://www.hrw.org/report/2019/09/04/when-were-dead-and-buried-our-bones-will-keep-hurting/workers-rights-under-threat>
- Nebraska Appleseed. (2009). "The speed kills you": The voice of Nebraska's meatpacking workers.
https://neappleseed.org/wp-content/uploads/downloads/2013/01/the_speed_kills_you_100410.pdf
- National Pork Producers Council. (2024, February 28). *NPPC commends NSIS line speed expansion* [Press release].
<https://nppc.org/news/nppc-commends-nsis-line-speed-expansion/>
- Norfolk Daily News. (2024, January 17). *USDA fails to visit Madison pork plant*.
https://norfolkdailynews.com/news/usda-fails-to-visit-madison-pork-plant/article_c4bfa072-b54f-11ee-afb1-d3e793ed8f2b.html
- Office of the Federal Register. (1981, August 28). *Federal Register*, 46(167). National Archives and Records Service, General Services Administration.
<https://tile.loc.gov/storage-services/service/ll/fedreg/fr046/fr046167/fr046167.pdf>
- Occupational Safety and Health Administration [OSHA]. (1993). *Ergonomics program management guidelines for meatpacking plants*. <https://www.osha.gov/publications/OSHA3123>
- OSHA. (2024). *OSH Act of 1970: General Duty Clause*. <https://www.osha.gov/laws-regs/oshact/section5-duties>

- Office of the Federal Register, National Archives and Records Administration. (2021, June 20). *86 FR 32376 - Occupational Exposure to COVID-19; Emergency Temporary Standard* [Government]. <https://www.govinfo.gov/app/details/FR-2021-06-21/2021-12428>
- Oxfam America. (2015). *Lives on the line*. <https://www.oxfamamerica.org/livesontheline/>
- Passel, J. S. (2006). *Size and characteristics of the unauthorized migrant population in the U.S.: II. Unauthorized migrants: The numbers*. Pew Research Center. <https://www.pewresearch.org/race-and-ethnicity/2006/03/07/ii-unauthorized-migrants-the-numbers/>
- Polansek, T. & Huffstutter, P. J. (2021, February 19). Insight: As U.S. pork plant speeds up slaughtering, workers report more injuries. *Reuters*. <https://www.reuters.com/world/us/us-pork-plant-speeds-up-slaughtering-workers-report-more-injuries-2021-02-19/>
- Ramos, A. K., Carvajal-Suarez, M., Trinidad, N., Quintero, S., Molina, D., & Rowland, S. A. (2021). “No somos máquinas” (We are not machines): Worker perspectives of safety culture in meatpacking plants in the Midwest. *American Journal of Industrial Medicine*, 64(2), 84–96. <https://onlinelibrary.wiley.com/doi/10.1002/ajim.23206>
- Ramsey, J. G., Musolin, K., & Mueller, C. (2015). *Evaluation of carpal tunnel syndrome and other musculoskeletal disorders among employees at a poultry processing plant* (HHE Report No. 2014-0040-3232). National Institute for Occupational Safety and Health, U.S. Department of Health and Human Services. <https://www.cdc.gov/niosh/hhe/reports/pdfs/2014-0040-3232.pdf>
- Rimmler-Cohen, A. (2023, October 19). *Tyson workers call for an end to child labor & dangerous conditions in U.S. meat plants*. Farm Sanctuary. <https://www.farmsanctuary.org/news-stories/child-labor-in-meat-industry/>
- Rosenbaum, D. A., Mora, D. C., Arcury, T. A., Chen, H., & Quandt, S. A. (2014). Employer differences in upper-body musculoskeletal disorders and pain among immigrant Latino poultry processing workers. *Journal of Agromedicine*, 19(4), 384–394. <https://doi.org/10.1080/1059924X.2014.945710>
- Schweihofer, J. (2014, January 23). *An inside look at pork processing*. Michigan State University Extension. https://www.canr.msu.edu/news/an_inside_look_at_pork_processing
- Smith, S. M. (2017). *How safe are the workers who process our food?* Monthly Labor Review, U.S. Bureau of Labor Statistics. <https://doi.org/10.21916/mlr.2017.19>
- United Food and Commercial Workers International Union, The [UFCW]. (2021, March 31 | Updated 2021, April 1). *Federal court throws out dangerous Trump USDA pork line speed rule in major victory for essential meatpacking workers*. <https://www.ufcw.org/press-releases/ufcw-federal-court-throws-out-dangerous-trump-usda-pork-line-speed-rule-in-major-victory-for-essential-meatpacking-workers/>
- U.S. Department of Agriculture. (2025, January 10). *FSIS releases reports on swine and poultry line speed studies* [Constituent update]. <https://www.fsis.usda.gov/news-events/news-press-releases/constituent-update-january-10-2025>
- USDA Food Safety Inspection Service [FSIS]. (2019). *Modernization of swine slaughter inspection* [Docket No. FSIS–2016–0017; Final Rule]. <https://www.fsis.usda.gov/federal-register/rules/modernization-swine-slaughter-inspection>
- U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, & National Institute for Occupational Safety and Health [NIOSH]. (2009). *Health Hazard Evaluation Program*. <https://www.cdc.gov/niosh/docs/2009-167/pdfs/2009-167.pdf>
- U.S. Government Accountability Office [GAO]. (2016). *Workplace safety and health: Additional data needed to address continued hazards in the meat and poultry industry* (Report No. GAO-16-337). <https://www.gao.gov/assets/gao-16-337.pdf>
- U.S. Senate Committee on Agriculture, Nutrition, and Forestry. (2023, November 17). *USDA inaction on New Swine Inspection System fails U.S. farmers and pork processors* [Minority blog press release]. <https://www.agriculture.senate.gov/newsroom/minority-blog/usda-inaction-on-new-swine-inspection-system-fails-us-farmers-and-pork-processors>