

GAO

Report to the Ranking Minority
Member, Committee on Health,
Education, Labor, and Pensions,
U.S. Senate

January 2005

WORKPLACE SAFETY AND HEALTH

Safety in the Meat and Poultry Industry, while Improving, Could Be Further Strengthened



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Highlights

Highlights of [GAO-05-96](#), a report to the Ranking Minority Member, Committee on Health, Education, Labor and Pensions, U.S. Senate

Why GAO Did This Study

Because meatpacking is one of the most dangerous industries in the United States, we were asked to provide the Congress with information on the characteristics of workers in the meat and poultry industry and the conditions in which they work, the types of injuries and illnesses these workers incur, how injury and illness rates have changed over the past decade, and factors that may have affected these rates. We were also asked to determine what is known about the effectiveness of the Occupational Safety and Health Administration's (OSHA) efforts to improve safety and health in the meat and poultry industries.

What GAO Recommends

To strengthen its efforts to improve worker safety and health in meat and poultry plants, GAO recommends that OSHA, among other things, consider adjusting its criteria for selecting plants for inspection and audits to include those that have had large reductions in their injury and illness rates over time, and changing the way it collects data on plants in order to make it easier to measure the impact of its programs.

OSHA provided GAO with written comments on a draft of this report, emphasizing its commitment to addressing the health and safety hazards facing meat and poultry workers. It generally agreed with the report's findings and recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-05-96.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Bob Robertson at (202) 512-9889 or robertsonr@gao.gov.

WORKPLACE SAFETY AND HEALTH

Safety in the Meat and Poultry Industry, while Improving, Could Be Further Strengthened

What GAO Found

The largest proportions of workers in the meat and poultry industry, according to the Bureau of Labor Statistics (BLS), are young, male, and/or Hispanic. Although the majority of workers are citizens, an estimated 26 percent of them are foreign-born noncitizens. They work in hazardous conditions involving loud noise, sharp tools, and dangerous machinery. Many workers must stand for long periods of time wielding knives and hooks to slaughter or process meat on a production line that moves very quickly. Workers responsible for cleaning the plant must use strong chemicals and hot pressurized water.

While, according to BLS, injuries and illnesses have declined over the past decade, the meat and poultry industry still has one of the highest rates of injury and illness of any industry. The most common injuries are cuts, strains, cumulative trauma, and injuries sustained from falls, but more serious injuries, such as fractures and amputation, also occur. According to BLS, the injury and illness rate for the industry has declined from an estimated 29.5 injuries and illnesses per 100 full-time workers in 1992 to 14.7 in 2001. Injury and illness rates can be affected by many factors, such as the amount and quality of training, employee turnover rates, increased mechanization, and the speed of the production line.

Some evidence suggests that OSHA's efforts have had a positive impact on the injury and illness rates of workers in meat and poultry plants. However, while the criteria OSHA uses to select plants for inspection—which focus on plants with relatively high injury and illness rates—are reasonable, OSHA could improve its selection process by also considering trends in plants' injury and illness rates over time. In addition, it is difficult to assess the effectiveness of OSHA's efforts because the agency does not assign a unique identifier to each plant, making it hard to compare the data it collects on specific plants' injury and illness rates with the information the agency collects on the results of its plant inspections and other programs.

Production Line at a Meatpacking Plant



Source: Gail A. Eisnitz/ Humane Farming Association.

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Abbreviations

BLS	Bureau of Labor Statistics
CPS	Current Population Survey
HHS	U.S. Department of Health and Human Services
NIOSH	National Institute of Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
SST	site-specific targeting
USDA	U.S. Department of Agriculture

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United States Government Accountability Office
Washington, DC 20548

January 12, 2005

The Honorable Edward M. Kennedy
Ranking Minority Member
Committee on Health, Education,
Labor, and Pensions
United States Senate

Dear Senator Kennedy:

According to data collected by the U.S. Department of Labor's Bureau of Labor Statistics (BLS), in 2003, an estimated 527,000 workers were employed in the animal slaughtering and processing industry.¹ According to the U.S. Department of Agriculture (USDA), in 2004 there were about 5,700 meatpacking and processing plants in the United States. The modern meatpacking and processing plant is a complex and highly organized structure, developed for the streamlined slaughter and progressive disassembly of animals. The industry includes plants in which animals are slaughtered and cut into pieces, with some facilities also cooking and packaging the meat for consumption, as well as plants in which meat products, such as sausage and ham, are produced by adding ingredients to the meat. The meat processed includes red meat such as beef, veal, pork, and lamb, and poultry such as chicken and turkey.

Because meatpacking is one of the most dangerous industries in the United States, you asked us to (1) describe the characteristics of workers in meat and poultry slaughter and processing plants and the conditions in which they work; (2) identify the types of injuries and illnesses workers in meat and poultry slaughter and processing plants incur, how the injury and illness rates have changed over the past decade, and the factors that may affect these rates; and (3) determine what is known about the effectiveness of the Occupational Safety and Health Administration's

¹This estimate has a 95 percent confidence interval from 470,783 to 584,003. All demographic estimates for the meat and poultry industry in this report are based on the March 2004 or the March 1995 Current Population Survey (CPS) and refers to workers in the animal slaughtering and processing industry. Unless otherwise noted, CPS percentage estimates have 95 percent confidence intervals of plus or minus 8 percentage points of the estimate, and all other estimates have confidence intervals of within plus or minus 14 percent of the estimate itself. See appendix I for more information.

(OSHA) efforts to improve safety and health at meat and poultry slaughter and processing plants.

To respond to your request, we reviewed literature on the industry and interviewed officials from OSHA and other federal agencies, such as USDA and the Centers for Disease Control and Prevention’s National Institute for Occupational Safety and Health (NIOSH) within the Department of Health and Human Services (HHS), as well as individuals from contract cleaning and sanitation companies, unions, advocacy groups, and key trade associations. We obtained and analyzed

- data on worker demographics from BLS’s Current Population Survey (CPS),
- data on workplace injuries and illnesses from BLS’s Survey of Occupational Injuries and Illnesses,
- data on fatalities from BLS’s Census of Fatal Occupational Injuries,
- data from OSHA’s inspections database (the Integrated Management Information System),
- worksite-specific injury and illness data that OSHA uses to target specific worksites for inspection (the OSHA Data Initiative),
- data on the number and location of meat and poultry plants from USDA’s Performance Based Inspection System, and
- lists of plants that participate in OSHA’s cooperative programs.²

In addition, we visited six meat and poultry plants and two OSHA area offices and interviewed inspectors at four additional area offices, selected because the offices had performed the most inspections of meat and poultry plants. Finally, we conducted a survey of meat and poultry plants to obtain data on their workers, factors that affect their injury and illness

²We focused on the three-digit Standard Industrial Classification code 201—the meat products industry. When we refer to the “meat and poultry industry,” we are referring to companies in the meat products industry, code 201. When we refer to the meatpacking industry, we are referring to companies in the four-digit code 2011; when we refer to the sausages and other prepared meat products industry, we are referring to companies in code 2013; and when we refer to the poultry slaughtering and processing industry, we are referring to companies in code 2015.

rates, plants' efforts to improve safety and health, and plants' interactions with OSHA.³ See appendix I for detailed information on the scope and methodology for our work. We performed our work in accordance with generally accepted government auditing standards between January 2004 and September 2004.

Results in Brief

According to CPS data, in 2003, the largest proportions of workers in the meat and poultry industry tended to be young (43 percent under age 35), male (65 percent), and/or Hispanic (42 percent), with meat and poultry workers in general laboring in hazardous conditions involving loud noise, sharp tools, and dangerous machinery. Although the data show that the majority of workers were citizens, a large proportion, an estimated 26 percent, were foreign-born noncitizens. Generally, meat and poultry workers are employed in larger plants located in the South and Midwest and earn a median salary of about \$21,320 per year, much less than the typical pay for workers in all manufacturing industries of about \$33,500 per year. The type of work performed and the plant environment expose workers to many hazards. The work is physically demanding, repetitive, and often requires working in extreme temperatures—such as in refrigeration units that range from below zero to 40 degrees Fahrenheit—and plants often have high turnover rates. Workers often stand for long periods of time on production lines that move very quickly, wielding knives or other cutting instruments used to trim or remove portions of the carcasses. Conditions at the plant can also be loud, wet, dark, and slippery. Workers responsible for cleaning the plant must use strong chemicals and hot pressurized water to clean inside and around dangerous machinery, and may experience impaired visibility because of steam.

Meat and poultry workers sustain a range of injuries, including cuts, burns, and repetitive stress injuries, and while, according to BLS, injuries and illnesses in the meat and poultry industry declined from 29.5 injuries and illnesses per 100 full-time workers in 1992 to 14.7 in 2001, the rate was among the highest of any industry. Similarly, though not comparable with these data because of recent changes in OSHA's record-keeping requirements, statistics for 2002 indicate that injury and illness rates in the meat and poultry industry remain high in relation to those of other

³Our survey sample was designed so that we would be able to draw inferences from the study population. However, because we received an overall response rate to our survey of only 23 percent, we cannot generalize the responses we received to the entire population of meat and poultry producers. See appendix I for more detailed information on the survey.

industries. While the most common injuries are cuts, strains, cumulative trauma caused by repetitive cutting motions, and injuries sustained from falls, more serious injuries, such as fractures and amputation, also occur. For example, according to OSHA data, a worker died when he attempted to replace his knife in the scabbard hanging from his belt, missed the opening, and pushed the knife into his leg, severing his femoral artery. In addition, some workers become ill because of exposure to chemicals, blood, and fecal matter, which can be exacerbated by poor ventilation and extreme temperatures. Because of the many hazards inherent in meat and poultry plants and the type of work performed, the dramatic decline in the industry's injury and illness rates has raised a question about the validity of the data on which these rates are based. Several factors can affect the rates of injury and illness, such as an emphasis on safety by employers or employees, the amount and quality of training, employee turnover rates, and the speed of the production line. However, the degree to which these factors affect injury and illness rates is difficult to assess. Some experts believe, for example, that faster line speeds increase workers' risk of injury. OSHA officials told us that while they believed that slowing the speed of the production line could help reduce the number of injuries to workers, they do not have the data on the effect of line speed on worker safety needed to question, in general terms, the process of setting line speed or to assess the appropriate speed at which the lines should operate.

Though certain weaknesses complicate assessments of OSHA's efforts to improve safety and health at meat and poultry plants, some evidence suggests that the agency's efforts have had a positive impact on the injury and illness rates of workers in this industry. For example, in 2003, OSHA conducted inspections of almost 200 meat and poultry plants that, according to the agency and some plant officials we interviewed, resulted in many safety and health improvements. Similarly, some evidence suggests that OSHA's cooperative programs have had a positive impact on the safety and health of workers. For example, a program initiated by OSHA's Omaha Area Office, in which it partnered with several meatpacking plants in the state to share best safety practices, has, according to OSHA, improved worker safety and health in plants in Nebraska. The agency has not, however, implemented similar programs in other areas with large concentrations of meatpacking plants or extended the program to poultry plants. In addition, the criteria OSHA uses to select plants for inspection, while reasonable, may not trigger inspection of some at-risk plants. Currently, OSHA's selection criteria target worksites in industries with high rates of injury and illness. OSHA also selects a small number of worksites with low injury and illness rates for inspection in order to ensure that they are not underreporting injuries and illnesses, and

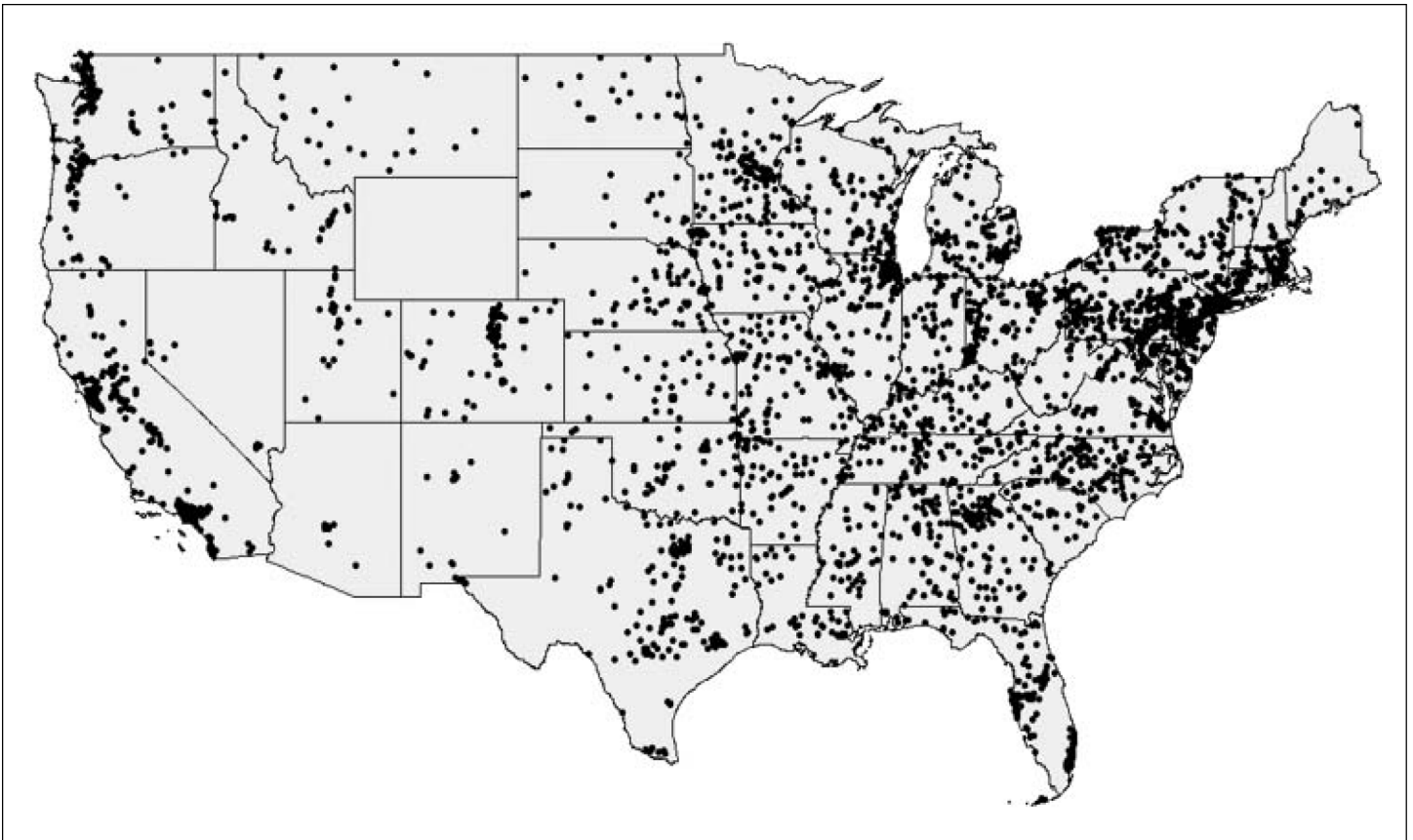
randomly selects worksites from high-hazard industries for audits that verify their injury and illness rates. However, because OSHA's selection criteria do not require the agency to examine trends in plants' injury and illness rates over time—and the agency does not attempt to examine these trends—OSHA may not detect dramatic decreases in these rates that could raise questions as to the accuracy of the figures. Furthermore, the injury and illness data on which OSHA bases its selection of plants for inspection are incomplete, because they do not include injuries and illnesses incurred by cleaning and sanitation workers not employed directly by the plants. These workers are not classified by BLS as working in the meat and poultry industry, although they labor in the same plants and under working conditions that can be even more hazardous than those of production workers. Finally, because OSHA does not assign a unique identifier to each plant for which data are collected, it is difficult to assess the success of its efforts by comparing information about specific plants across its databases.

This report contains recommendations for strengthening OSHA's efforts to improve the safety and health of workers at meat and poultry slaughter and processing plants by, among other things, adjusting its criteria for selecting plants for inspection and audits to include those that have had large reductions in their injury and illness rates over time, and changing the way it collects data on plants in order to make it easier to measure the impact of its programs. The report also makes a recommendation jointly to OSHA and USDA and another to HHS. In their written comments on our report, OSHA, USDA, and HHS generally agreed with the report's findings, conclusions, and recommendations. BLS also provided us with written comments, suggesting several technical corrections that were incorporated throughout the report, as appropriate.

Background

According to USDA, there were about 5,700 total meat and poultry plants in the United States as of September 2004.⁴ Most of these—about 4,400—had fewer than 40 employees, and about half of them are even smaller, with fewer than 10 employees. Figure 1 shows the location of all meat and poultry plants, regardless of size, in the United States as of September 1, 2004.

Figure 1: Location of U.S. Meat and Poultry Plants, September 2004



Source: GAO analysis of USDA data.

⁴USDA's primary responsibility in meat and poultry plants is to administer a comprehensive system of inspection laws designed to ensure that meat and poultry products moving in interstate and foreign commerce for use as human food are safe, wholesome, and accurately labeled.

Over the past 25 years, the meat and poultry industry has consolidated, as today's leading firms built very large plants and some independent firms disappeared or were bought by larger firms. While many small plants remain, a few large companies have gained control of the lion's share of the market. Today, the top four meatpacking companies slaughter, process, and package about 80 percent of the beef cattle in the United States, and the top four pork producers control nearly 70 percent of the market. The poultry industry is nearly as concentrated, with the top five companies maintaining a market share in excess of 50 percent. Consolidation of the various meat industries occurred, in large part, because of innovations in technology and the relocation of plants near the source of livestock.

Industry consolidation has been accompanied by significant changes in the relations between organized labor and the management of meat and poultry plants. According to a report by USDA's Economic Research Service, in 1980, 46 percent of workers in the meat products industry were union members, a figure that had remained stable since the 1970s.⁵ However, by the end of the 1980s, union membership had fallen to 21 percent. Declining rates of unionization coincided with increases in the use of immigrant workers, higher worker turnover, and reductions in wages. Immigrants make up large and growing shares of the workforces at many plants. Labor turnover in meat and poultry plants is quite high, and in some worksites can exceed 100 percent in a year as workers move to other employers or return to their native countries. The frequent movement of immigrant workers among plants and communities limits the opportunities of unions to organize meat and poultry workers.

Most of today's facilities are designed for an orderly flow from point of entry of the living animal into the plant to the finished food product. The animal enters the production facility and proceeds directly to the kill floor area, where slaughter occurs. The carcass is beheaded, eviscerated, and chilled for several hours. It is then taken to the cutting floor, where it is cut into smaller cuts of meat. The new processing methods—breaking down carcasses into small, vacuum-packed portions of meat that can be shipped directly to supermarkets—have transformed the work into an

⁵*Consolidation in U.S. Meatpacking*, by James M. MacDonald, Michael E. Ollinger, Kenneth E. Nelson, and Charles R. Handy. Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture. Agricultural Economic Report No. 785, Washington, D.C.: February 2000.

assembly line operation requiring workers to perform an increased number of repetitive motions.

While slaughterhouses have come to rely on greater mechanization over the last several decades, much of the work is still done by hand, particularly when animals vary in size, shape, and weight. The main slaughtering steps of evisceration and cutting are generally done by hand, using knives. Figure 2 shows a typical assembly line operation at a poultry plant.

Figure 2: Production Line at a Poultry Plant



Source: Photo used with permission.

OSHA, established after the passage of the Occupational Safety and Health Act in 1970, is the federal agency within the Department of Labor responsible for protecting the safety and health of workers in meat and

poultry plants.⁶ OSHA performs a number of functions, including establishing safety and health standards, conducting routine inspections, and conducting investigations in response to complaints from workers and incidents such as fatalities.

Regional administrators in each of OSHA's 10 regional offices oversee the enforcement of federal policies within their own regions. Each region is composed of area offices—of which there are 80 in total—overseen by area directors. The area directors oversee compliance officers, who are responsible for conducting inspections and following up on complaints, and compliance assistance specialists, who provide assistance to organizations and employers that participate in OSHA's cooperative programs. Compliance assistance specialists also help employers correct hazards identified during inspections.

To determine which plants to inspect, OSHA relies on BLS data on injuries, illnesses, and fatalities by industry. BLS surveys a sample of employers annually (182,800 worksites were surveyed for 2002) and asks them to report information on the number of work-related injuries and illnesses that occur at their worksites. This information comes from injury and illness records that most private industry employers with more than 10 employees are required by OSHA to maintain. From this information, BLS calculates industry-level injury and illness rates. BLS also identifies fatalities from an annual census of all 50 states, the District of Columbia, and New York City, which report on all work-related fatalities within their jurisdictions. BLS requires the reporting entities to corroborate reports of fatalities from multiple sources, such as death certificates, medical examiners' reports, media reports, and workers' compensation claims. BLS makes injury, illness, and fatality data available at the national, as well as at the state, level.

OSHA uses two approaches to ensure general employer compliance with federal safety and health laws and regulations—enforcement and cooperative programs. Enforcement, which represents the preponderance of agency activity, is carried out primarily by using compliance officers to

⁶Under the terms of the act, states may assume responsibility for occupational safety and health enforcement through the mechanism of an OSHA-approved state plan. Twenty-one "state-plan states" operate such programs with responsibility for most private sector OSHA enforcement in their states. State plans operate under authority of state law, adopt and enforce their own standards (which must be "at least as effective" as federal OSHA's), and set their own goals and priorities for enforcement and compliance assistance.

inspect employer worksites. Worksites and employers that fail to meet federal safety and health standards face sanctions, such as paying penalties for violations of health and safety standards. OSHA's cooperative approach invites employers to collaborate with the agency through a number of different programs and uses a variety of incentives to encourage employers to reduce hazards and institute practices that foster safer and healthier working conditions.

OSHA's Enforcement Efforts

OSHA selects worksites in selected industries for inspection through its site-specific targeting (SST) program and through national and local programs that focus on specific hazards. The SST program focuses on employers with more than 40 employees, who are required to record all injuries and illnesses on a log and make this information available to OSHA.⁷ Of the almost 40,000 inspections OSHA conducted in 2003, about 2,000 were SST inspections, and about 25,000 were conducted through national and local emphasis programs.⁸ The agency also conducts inspections when fatalities or serious injuries occur and when workers file complaints about serious safety and health hazards. These inspections constitute nearly half of the total inspections OSHA conducts annually.

For its SST program, OSHA obtains specific information—such as employer names and addresses—for all worksites with 40 or more employees, approximately 140,000 worksites each year. OSHA then selects a portion of these worksites (approximately 80,000) in the industries with the highest injury and illness rates,⁹ and sends them a survey form that requires them to report (1) the average number of employees who worked for them during the previous calendar year, (2) the total hours the employees worked during the previous year, and (3) summary injury and illness data from their OSHA logs. From this information, OSHA computes the worksites' injury and illness rates and sends those with relatively high rates a letter informing them that they may be inspected. Finally, OSHA

⁷The SST program also focuses on industries outside of manufacturing, with lost workday case rates above a certain level (5.0 or greater for its 2004 SST program), as reported by BLS. The nonmanufacturing industries included in the survey for OSHA's 2004 SST program were within the major industry categories of Agriculture, Transportation, Wholesale and Retail Trade, and Health Services.

⁸Worksites in the construction industry are not selected for inspection under OSHA's SST program. However, through its other inspection initiatives, 22,724 of OSHA's 39,720 total inspections were of construction worksites in 2003.

⁹All manufacturing industries are considered as having high injury and illness rates.

compiles SST inspection targeting lists containing the names of worksites with relatively high injury and illness rates for inspection.¹⁰

OSHA also has special emphasis programs that focus on a particular safety or health hazard or the hazards of a specific industry, selected by the agency's headquarters office for attention. While OSHA's headquarters provides direction to its area offices in implementing these national emphasis programs, the area offices have considerable flexibility in selecting actual worksites for attention. In addition, regional and area offices use regional and local emphasis programs to highlight industries or hazards within their jurisdictions that they believe are especially hazardous.

Because musculoskeletal disorders are prevalent in several industries—including the meat and poultry industry—but there is no specific standard that allows OSHA to cite employers for hazards relating to these injuries, the agency designed a four-pronged approach to address these injuries that focuses on industries and employers with known high injury and illness rates.¹¹ The approach includes (1) developing industry or task-specific guidelines for a number of industries based on current incidence rates and available information about effective and feasible solutions; (2) conducting inspections for ergonomic hazards, issuing citations under the general duty clause of the Occupational Safety and Health Act,¹² and issuing ergonomic hazard alert letters where appropriate; (3) providing assistance to businesses, particularly small businesses, and helping them

¹⁰OSHA sends primary and secondary lists to its area offices in federal OSHA states. These offices are expected to visit all worksites identified on the primary list and inspect worksites on the secondary list as resources allow. OSHA sends information on additional worksites in state-plan states to the appropriate state agencies, which are expected to have an effective high hazard inspection targeting system. All but 4 of the 21 state-plan states participate in the data gathering program that would make establishment-level SST-type data available to them for efforts such as targeting and program evaluation.

¹¹Musculoskeletal disorders include conditions such as tendonitis, carpal tunnel syndrome, and lower back injuries. Symptoms of these disorders can include swelling in the joints, limited range of motion, numbness or tingling sensations, and loss of strength. Events or exposures that can lead to the injury or illness are bodily reaction/bending, climbing, crawling, reaching, twisting, overexertion, and repetition.

¹²29 U.S.C. § 654(a)(1). This clause is used to cite serious hazards where no specific OSHA standard exists to address the hazard, as is the case with ergonomic stressors. According to OSHA, when it uses this clause to cite an employer, the agency must demonstrate that (1) the employer failed to keep the workplace free of a hazard to which employees were exposed, (2) the hazard was causing or likely to cause death or serious physical harm, (3) the hazard was recognized, and (4) a feasible means of abatement for the hazard exists.

to proactively address ergonomic issues in the workplace; and (4) chartering an advisory committee authorized to, among other things, identify gaps in research about the application of ergonomics and ergonomic principles in the workplace.

OSHA's Cooperative Programs

OSHA's cooperative programs provide incentives to employers, such as free consultations, deferrals from SST inspections, and recognition for exemplary safety and health management systems, for making improvements to their safety and health management systems. OSHA has implemented these programs incrementally to reach different employers and worksites in various ways. OSHA has four primary programs: (1) the On-Site Consultation Program, (2) the Voluntary Protection Programs, (3) the Strategic Partnership Program, and (4) the Alliance Program.

The On-Site Consultation Program is a broad network of occupational safety and health services primarily funded by federal OSHA, but is delivered by the states. The service, which originated in 1974, focuses on helping small employers comply with OSHA and state occupational safety and health standards. The program assigns priority to companies in high-hazard industries and is offered free of charge to eligible employers.¹³ States provide consultation visits at employers' requests in order to identify safety and health hazards and discuss techniques for their abatement. Small employers receiving consultation services may qualify for recognition in the Safety and Health Achievement Recognition Program—part of the On-Site Consultation Program—which exempts them from SST inspections during the period that their certification is valid, either 1 or 2 years. Participants in this program, who are considered models for good safety and health practices in their field, must have, at a minimum, safety and health management systems in place to prevent and control occupational hazards, as well as illness and injury rates below the national average for their industry.

The Voluntary Protection Programs, established in 1982, recognize single worksites with exemplary safety and health management systems. In calendar year 2003, the average participating worksite had approximately 250 employees, and about 50 percent of the participating sites had 200

¹³The On-Site Consultation Program defines a small business as one with fewer than 250 workers at the workplace where the consultation is conducted and no more than 500 workers companywide.

employees or less. To participate in this program, employers must have worksites that exceed OSHA standards and must commit to a process of continual improvement. After receipt of a site's application, OSHA conducts an onsite review of the site to verify the effectiveness of its safety and health management system.

The Strategic Partnership Program, established in 1998, was designed to address specific safety and health management systems in high-hazard workplaces by promoting collaboration between employers, employees, other affected organizations, and OSHA.¹⁴ Each partnership has a written agreement that outlines goals (such as the reduction of injuries), strategies, and measures, and identifies how the partners will work together to achieve their desired results. Partnerships may focus on specific hazards or industry issues, or may aim for broader impact through focus on safety and health management systems. OSHA verifies partner commitment and success in achieving goals, and while the program does not offer employers exemption from inspection, it offers other incentives, such as limiting SST inspections to only the most serious prevailing hazards and reducing penalties for hazards cited during inspections.

OSHA's Alliance Program targets trade, professional, and other types of organizations to work collaboratively with OSHA to promote workplace safety and health issues. In contrast to OSHA's other three cooperative programs, which typically include safety and health management systems at specific employer worksites, alliance agreements focus on goals such as training, outreach, and increasing awareness of workplace safety and health issues. Alliance participants and their members are not exempt from OSHA inspections and do not receive any enforcement-related incentives for being part of an organization participating in an alliance. Instead, OSHA officials informed us that trade and professional associations have used the program to address existing and emerging workplace safety and health issues, such as ergonomics.

In addition to these formal programs, OSHA conducts other compliance assistance activities, such as outreach and training activities, to aid employers in complying with OSHA standards and to educate employers on what constitutes a safe and healthy work environment.

¹⁴While OSHA had partnership agreements prior to 1998, the Strategic Partnership Program was not formalized until that year.

Meat and Poultry Workers Tend to Be Young, Male, and/or Hispanic, and Face Hazardous Working Conditions

The meat and poultry workforce tends to be young (43 percent under age 35), male (65 percent), and/or Hispanic (42 percent). These characteristics are more pronounced in the meat and poultry industry than in the U.S. manufacturing sector overall. Meat and poultry workers typically earn substantially less than workers in the U.S. manufacturing sector as a whole. Most large plants are located in the Midwest and South, and workers in the industry often work in difficult and dangerous conditions.

Meat and Poultry Workers Are Predominantly Young, Male, and/or Hispanic, and Most Large Plants Are Located in the Midwest and South

Workers in the meat and poultry industry tended to be younger than workers in the manufacturing sector as a whole, and almost all of the workers are employed on a full-time basis. According to CPS data, in 2003, the median age of workers in the meat and poultry industry was 37 years.¹⁵ About 43 percent of all meat and poultry workers were under age 35, compared with about 29 percent of all U.S. manufacturing workers.¹⁶ These workers also tend to be male. In 2003, men made up 65 percent of the workforce in the meat and poultry industry. In 2003, in this industry and in U.S. manufacturing overall, about 95 percent of the employees worked full-time.¹⁷

The racial composition of the meat and poultry workforce is disproportionately Hispanic. As shown in figure 3, according to the CPS, in 2003, about 42 percent of meat and poultry workers were Hispanic or Latino, 32 percent were white, and 20 percent were black.¹⁸ These figures compare with those for U.S. manufacturing as a whole, in 2003, where about 14 percent of the workforce was Hispanic, about 70 percent was white, and about 9 percent was black. Further, the percentage of Hispanic or Latino meat and poultry workers in 2003 reflects a 17 percent increase

¹⁵The 95 percent confidence interval for this median age is from 35 to 39 years old.

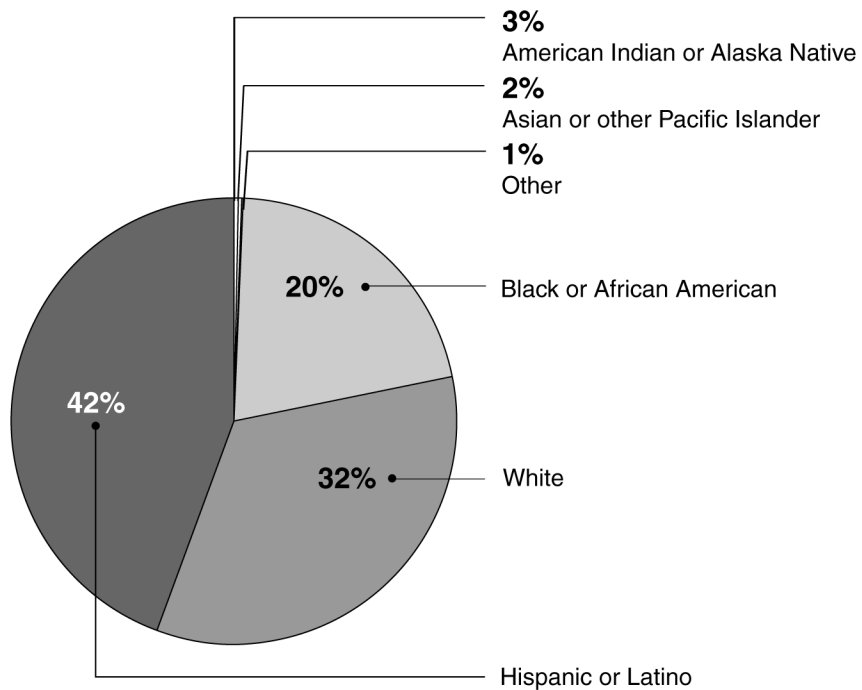
¹⁶All percentage estimates describing the workforce in this section are CPS estimates, and have a 95 percent confidence interval of within plus or minus 8 percentage points of the estimate itself.

¹⁷The percentage estimates for this industry and U.S. manufacturing are 96 and 95 percent, respectively. These percentages are not significantly different at the 95 percent confidence level.

¹⁸In addition, about 2 percent were Asian or other Pacific Islander and 3 percent were American Indian or Alaska native. The CPS is a joint product of the U.S. Census Bureau and BLS.

from 1994, when about 25 percent of meat and poultry workers were Hispanic or Latino. In addition, in 1994, a larger percentage of the meat and poultry workforce—46 percent—was white, and 25 percent was black.

Figure 3: Workers in the Meat and Poultry Industry, by Race, 2003



Source: GAO analysis of March 2004 CPS data.

Foreign-born noncitizens are more highly represented within the meat and poultry workforce than in manufacturing as a whole. A significant proportion—about 26 percent—of all workers in this industry are foreign-born noncitizens, compared with only about 10 percent of all manufacturing workers in the United States. An even larger percentage of the production and sanitation workers in the meat and poultry industry—38 percent—are foreign-born noncitizens.¹⁹ In 1994, 28 percent of production and sanitation workers were foreign-born noncitizens.

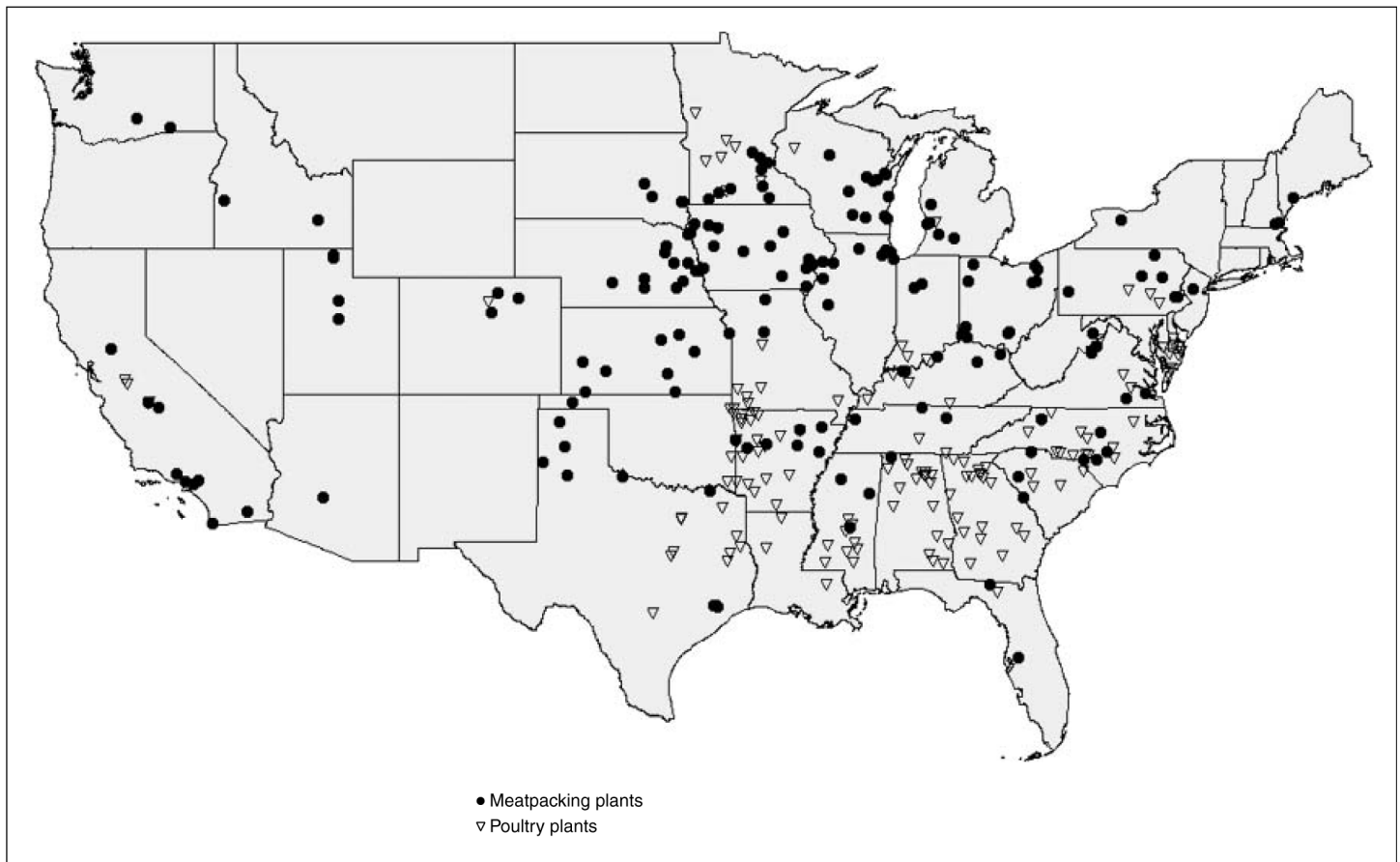
¹⁹Production and sanitation workers make up about 304,000 of the 527,000 total workers in the meat and poultry industries. The remaining workers in the industry work in administrative, managerial, engineering, health care, and transportation-related positions.

In certain areas of the United States, a number of communities have concentrated groups of immigrant workers—including groups from regions such as Central America, Southeast Asia, and Eastern Europe—who are employed in the meat and poultry industry.²⁰ In such areas, employees from these immigrant groups may make up a relatively large percentage of the workforce and population in and around meat and poultry plants. For example, in 2000, the population of one county in Kansas (which, according to USDA, was one of the largest meat-producing counties in the nation) was about 43 percent Hispanic, compared with only 7 percent of the population in the state. According to some industry officials, the increasingly fragmented nature of the tasks in slaughtering and processing has diminished the need for a skilled and more highly paid workforce, a fact that supports the industry's recruitment and employment of unskilled immigrant labor.

While plants are distributed throughout the United States, larger plants—those with more than 500 employees—tend to be concentrated in particular regions and produce the majority of the meat. Of these larger meat and poultry plants, about 87 percent are located in the South and the Midwest, 54 percent and 33 percent, respectively. Another 9 percent are located in the West and 4 percent in the Northeast. Figure 4 shows plants with more than 500 employees.

²⁰GAO, *Community Development: Changes in Nebraska's and Iowa's Counties with Large Meatpacking Plant Workforces*, GAO/RCED-98-62, (Washington, D.C.: Feb. 27, 1998).

Figure 4: Location of U.S. Meat and Poultry Plants with More than 500 Employees, September 2004



Source: GAO analysis of USDA data.

Meat and poultry workers tend to earn substantially less than manufacturing workers in general. In 2003, meat and poultry workers earned a median salary of about \$21,320 per year, while manufacturing workers earned about \$33,500 per year. In addition, the rate of employee turnover among meat and poultry workers can be high.²¹ A plant official with whom we spoke indicated that some workers who are hired have no intention of staying for a long period of time and approach employment at meat and poultry plants as a temporary arrangement. According to some experts, high turnover may benefit plants because they save on some

²¹The turnover rate is typically calculated by dividing the total number of employees who left the plant during the most recent year by the total number of employees.

costs, such as health benefits and vacation pay, while others argue that high turnover is costly for plants because they must constantly recruit and train new employees.

Workers Face Several Hazardous Conditions in Meat and Poultry Slaughter and Processing Plants

The work environment in meat and poultry plants can be risky because of the current procedures used in the industry. Meat and poultry plants present risks greater than those faced by workers in many other manufacturing operations. For example, production lines can require workers to stand close together while wielding tools necessary for cutting pieces of meat. Final product processing involves a number of packaging machines and conveyors that can present a wide range of safety risks to workers. Workers are also frequently handling or in close proximity to sources of infectious diseases, such as those carried by animal tissues and organs. Pathogens can infect workers from open abrasions or through inhalation. For example, hydrogen sulfide, methane, and carbon dioxide can be released from decomposing animal manure and waste. In addition, workers are exposed to many chemicals, including a range of gases, such as ammonia, and Freon. Table 1 summarizes the hazardous working conditions in meat and poultry plants.

Table 1: Types of Potentially Hazardous Working Conditions in Meat and Poultry Plants

Type of hazard	Description of hazard
Animal	Workers can be injured by animals when they are unloaded and brought into the plant. Incorrect stunning and slaughtering can result in unpredictable and violent reactions. The movement of carcasses weighing up to half a ton or more also poses a possible danger. Bodily fluids from carcasses, such as blood and fat, can make floors wet and slippery.
Chemicals and pathogens	Workers, especially cleanup crews, are exposed to a number of products that have strong chemicals, including disinfectants. In addition, workers are exposed to ammonia used for refrigeration. Workers may also be exposed to viruses, blood, fecal matter, and bacteria, such as Salmonella.
Temperature	Some workers are exposed to very hot temperatures, used to cook or cure meat. Workers are also exposed to very cold temperatures used to preserve meat and facilitate processing. Frozen meat and poultry products can require work in even colder temperatures. These problems are compounded by wet conditions and high humidity. Cleanup crews spray machinery, floors, and equipment with very hot water, causing steam that can burn workers and impair vision from fogged safety goggles.
Machine and tool	Many meat and poultry jobs still require the manual use of knives, particularly in meatpacking plants where animals vary widely in size and shape. Increasing mechanization, while reducing the number of workers exposed to injury on processing lines, can increase the type and severity of injuries by machines that cut, slice, saw, and grind. Large objects, such as forklifts, are also a hazard.
Work stress	Workers on some production lines perform identical motions for long periods of time. Increasing mechanization can permit faster line speeds, which in turn can further stress workers, who must keep up with mechanical equipment.
Noise	Some workers are exposed to loud machinery for prolonged periods. Earplugs are required and may reduce ability to communicate warnings.

Source: GAO analysis.

Meat and Poultry Workers Are Injured in a Variety of Ways, and Their Injury and Illness Rates, though Declining, Remain among the Highest of Any Industry

Meat and poultry workers suffer high rates of many types of injuries and illnesses, including those affecting the back, trunk, arms, fingers, and wrists. Although injury and illness rates have declined over the last decade, according to BLS, those in meat and poultry plants continue to be among the highest of any industry.

Workers Sustain Many Different Types of Injuries and Illnesses

Workers in the meat and poultry industry, including contract cleanup and sanitation workers, can suffer a host of serious injuries and illnesses, most often musculoskeletal disorders. (See fig. 5 for an illustration of the types of injuries workers suffer.) Many of the injuries—such as those to the arms, hands, and wrists—are due to the repetitive motions associated with the meat production process, such as performing the same cutting motions over time, and can become crippling. For example, carpal tunnel syndrome, caused by repetitive motion or cumulative trauma, can severely damage a nerve running through the wrist.²²

Workers can also be cut by their own knives during the butchering and cutting processes. For example, according to an OSHA publication, one worker in a meatpacking plant was blinded when the knife he was using to pick up a ham prior to boning slipped out of the ham, striking him in the eye.²³ The report also described an incident in which another worker's face was permanently disfigured when his knife slipped out of a piece of meat and struck his nose, upper lip, and chin. In another incident, according to OSHA, a worker who attempted to replace his knife in the scabbard hanging from his belt missed the opening and pushed the knife into his leg, severed his femoral artery, and died. In addition, workers can be cut by

²²Cumulative trauma can be caused by forceful exertions, repetitive finger or wrist motions, tool vibrations, awkward wrist positions, or specific repeated motions, and it can be exacerbated by extreme cold or humidity.

²³*Safety and Health Guide for the Meatpacking Industry*, U.S. Department of Labor, Occupational Safety and Health Administration, 1988, OSHA 3108.

the knives wielded by coworkers. According to OSHA's report, these "neighbor cuts" are usually the direct result of overcrowded working conditions.

Other injuries that workers can experience include respiratory irritation and, in some instances, asphyxiation from exposure to pathogenic respiratory substances. For example, workers have died from being overcome by hydrogen sulfide gas and from drowning when they entered manure waste pits or unknowingly worked near manure waste "lagoons" without taking the proper precautions, such as conducting an air test and wearing a safety harness and respirator; such precautions are particularly critical when workers are in confined spaces. According to OSHA, one worker died from chemical exposure after being sprayed with 400 pounds of toxic liquid ammonia while attempting to fix a pipe.

Workers may also suffer injuries and illnesses from contact with animals. If the animals are still dying when they are hung on the line, they may struggle and thrash about wildly, resulting in injuries that range from broken arms to permanent disfigurement and—in the most severe cases—death. Contact with different bacteria can cause fever, headaches, vomiting, diarrhea, and kidney damage. In addition, illnesses that can be contracted from diseased animals continue to raise concerns. According to USDA officials, the transmission of disease from animals to humans in the meat and poultry industry is uncommon because of concerted efforts in the United States and abroad. However, recent outbreaks of bovine spongiform encephalopathy among cattle (commonly known as "mad cow disease") are related to incidences of a disease that affects humans, according to the Centers for Disease Control and Prevention. While beef consumption is recognized as a mode of infection, it is unknown whether this disease can be transmitted in other ways, such as exposure to waste or blood.

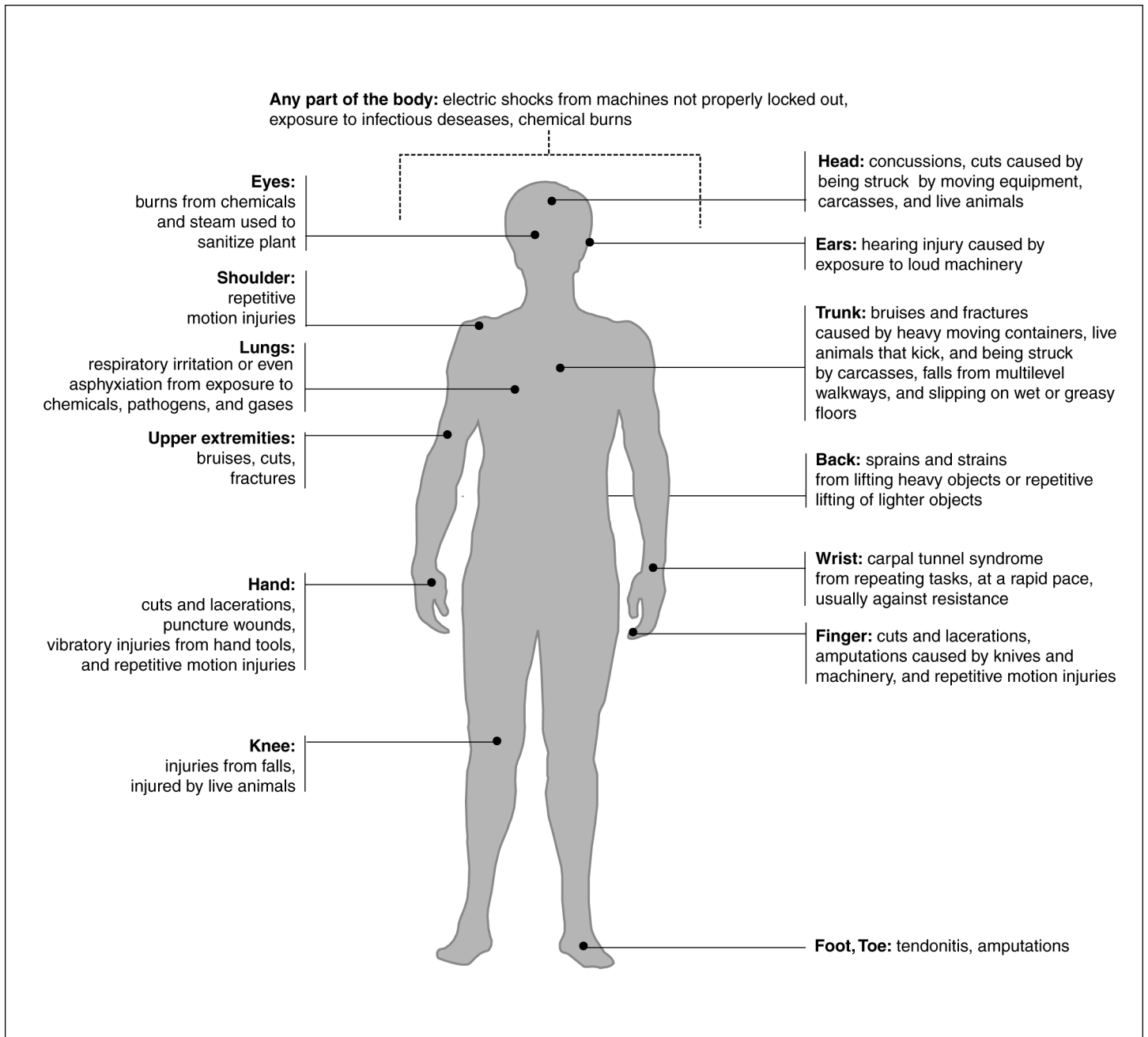
Workers can also suffer back injuries or other types of injuries from overexertion, including sprains, strains, tears, hernias, and fatigue. They can suffer injuries, and even death, from falling or being struck by an object. For example, workers have been killed by falling ice and forklift parts, and falls due in part to a lack of functioning safety devices. In one incident, an employee was killed when a rack of sausage fell from a manual overhead conveyor system and struck him.

Workers can be burned by heat sealant machines when they wrap meat. Workers may also sever fingers or hands or even lose limbs on machines that are either improperly locked or inadequately guarded. For example, in

2002, a sanitation worker at an Alabama plant lost both legs when another worker activated the meat grinder in which he was standing. In another incident, an employee dropped his knife into a meat grinder, reached in to retrieve it, and suffered the amputation of his arm. In yet another incident, an employee's fingers were amputated when they were caught in the mixing and blending machine he was operating.

Workers can be injured by falling on slippery floors and exposure to extreme heat or cold. Such cold temperatures can stress joints and exacerbate existing conditions such as arthritis and cardiovascular illnesses. As shown in figure 5, workers may sustain many types of injuries, and several different parts of the body may be affected.

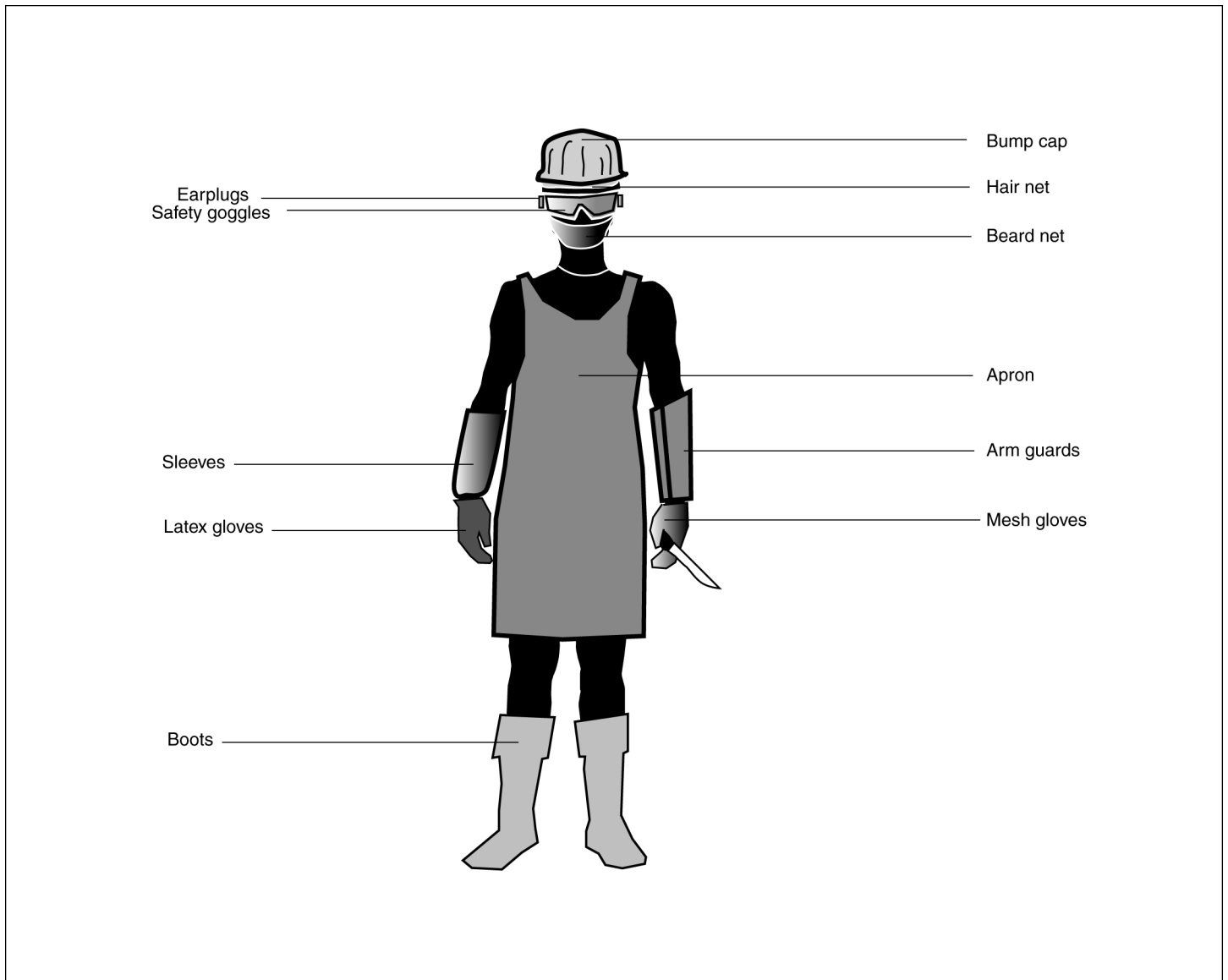
Figure 5: Nature of Injuries Sustained by Meat and Poultry Workers and Parts of the Body Affected



Source: GAO analysis of BLS injury and illness data.

As shown in figure 6, workers in the meat and poultry industry typically wear several types of safety and other equipment in an effort to protect themselves from injury and illness.

Figure 6: Safety and Other Equipment Worn by Meat and Poultry Production Workers



Source: GAO analysis.

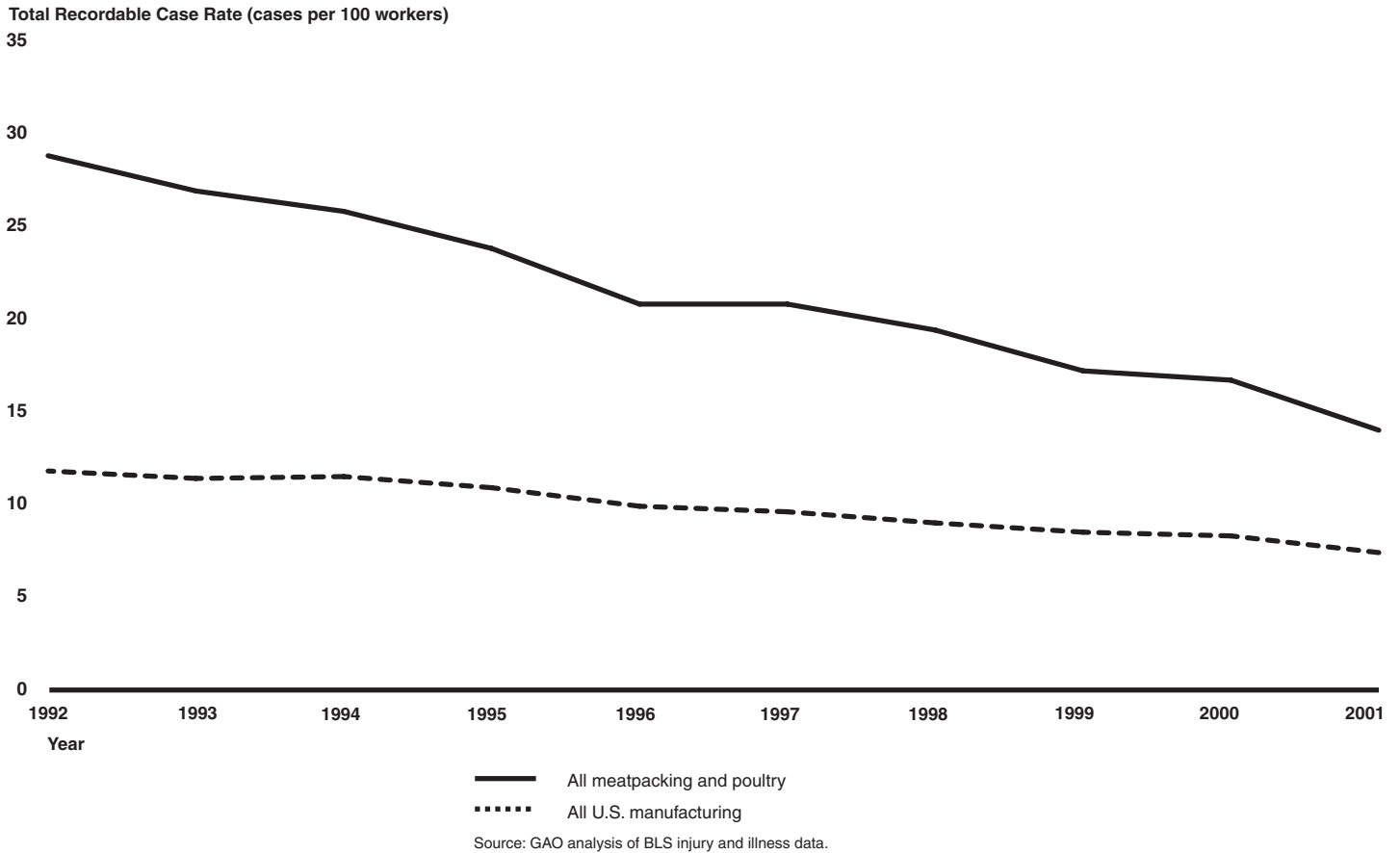
Injury and Illness Rates Have Declined but Remain among the Highest of Any Industry

Injury and illness rates in the meat and poultry industry fell steadily from 1992 to 2001, according to BLS data (see fig. 7).²⁴ The meat and poultry industry's annual rate of incidence of illness and injury in 2001, at an estimated 14.7 cases per 100 workers, was about half its 1992 rate of 29.5 cases.²⁵ The incidence rate across all U.S. manufacturing dropped to about two-thirds of its former rate over the same period, from 12.5 cases to 8.1 cases per 100 full-time workers.

²⁴Injury and illness rates for 2002 are not comparable with 2001 and previous years' rates because of changes to OSHA's record-keeping requirements and changes in the way that OSHA requires companies to categorize injuries and illnesses. These changes took effect January 1, 2002.

²⁵All estimates of injury incidence rates in this report are based on BLS data and have 95 percent confidence intervals of within plus or minus 14 percent of the estimated incidence rate. Confidence intervals for most estimates in this report are narrower (more precise) than this. However, rather than report confidence intervals for every incidence rate estimate in this report, a broad conservative confidence interval is used to cover all BLS incidence rate estimates. Additional information about these estimates is contained in appendix I.

Figure 7: Trends in Injury and Illness Rates in the Meat and Poultry Industry, Compared with Trends in All U.S. Manufacturing, 1992 to 2001



Despite this decrease, injury and illness rates among meat and poultry plants remain among the highest of any industry. According to BLS data on injuries and illnesses, in 2002, meatpacking plants recorded an average annual injury and illness rate of 14.9 cases per 100 full-time workers; sausages and other prepared meats plants recorded a rate of 10.9 cases; and poultry plants recorded a rate of 9.7 cases. The average annual injury and illness rate for all U.S. manufacturing was 7.2 cases.

Within the meat and poultry industry, the incidence rate for specific injuries and illnesses, as reported by employers, dropped in recent years. According to BLS data on injuries and illnesses, for example, carpal tunnel injuries dropped from 24 cases per 10,000 workers in 1992 to 6.8 cases in

2001; strains and sprains dropped from 189.4 cases to 51.9 cases; tendonitis dropped from 23.6 cases to 3.5 cases; cuts and punctures dropped from 76.2 cases to 17.9 cases; chemical burns dropped from 9.6 cases to 4.4 cases; and amputations dropped from 5.3 cases to 3.2 cases.

Compared with workers in all U.S. manufacturing industries, meat and poultry workers sustain a higher rate of certain injuries, such as chemical burns, amputations, heat burns, tendonitis, and carpal tunnel syndrome. In 2002, meatpacking workers suffered more of these types of injuries, but relatively fewer sprains and strains and fractures. The rate of injuries and illnesses involving repetitive motion in the meat and poultry industry at 22.2 cases per 10,000 full-time workers was one and a half times greater than the rate of 14.7 for all U.S. manufacturing in 2002.

A number of injuries sustained by meat and poultry workers are fatal; according to BLS fatality data, from 1992 to 2002, 229 workers died from their injuries. Of the 229 worker deaths, almost one-quarter occurred off plant property, rather than during production, in transportation accidents. The deaths that occurred in plants over this period included 60 that were caused by contact with objects and equipment (37 of these by being caught in or compressed by equipment or objects, including running machinery); 25 by falling; 35 from exposure to harmful substances; 4 from fires and explosions; and 22 from assaults and violent acts, including homicides.²⁶

BLS's data on injuries and illnesses, however, may not accurately reflect plants' incidences of injury and illness. OSHA, researchers, and union officials have all stated that the underreporting of injuries and illnesses is a problem in the meat and poultry industry. In the late 1980s, after observing what appeared to be underreporting of worker injuries, OSHA's offices in region 7 focused their attention on the meatpacking industry.²⁷ Beginning with an exhaustive review and reconstruction of a large Nebraska meatpacker's records, OSHA documented dozens of cases of underreporting and assessed the company more than \$2.5 million in

²⁶In 2003, 18 additional deaths were reported as sustained by meat and poultry workers. BLS and other federal statistical agencies are now required to use new industry and occupational classifications designed to reflect the most recent industries and occupations in the economy. Therefore, the 2003 data are not comparable with prior years' fatality data and are reported separately because, in some instances, the occupational definitions in the new classification system are different from those used previously.

²⁷OSHA's region 7 covers Iowa, Kansas, Missouri, and Nebraska.

penalties. Because of OSHA's findings during this inspection and others like it, Congress held hearings on the underreporting of occupational injuries from March to September 1987.²⁸ In 1987, after a National Academy of Sciences review of the methods BLS used to collect employers' injury and illness data highlighted several deficiencies, and in response to the congressional hearings, BLS began a multi-year effort to redesign and test an improved safety and health statistical system for collecting these data, which was fully implemented in 1992.²⁹ However, the accuracy of employers' occupational injury and illness data remains a concern. OSHA conducted a series of record-keeping inspections of meat and poultry plants in region 7 throughout the late 1980s and 1990s. As a result of these inspections, several plants were assessed penalties for record-keeping violations, including five plants that were assessed penalties ranging from \$290,000 to \$998,360. OSHA continues to find some measure of underreporting of employers' injury and illness information through the agency's record-keeping audits each year.

In addition, we reported in 1998 that the U.S. Immigration and Naturalization Service (now the Citizenship and Immigration Services) had often found illegal aliens employed in meatpacking plants; one agency official estimated that up to 25 percent of workers in meatpacking plants in Nebraska and Iowa were illegal aliens. As recently as March 2004, as the result of an internal audit, one large meatpacking company found 350 undocumented workers employed in one of its plants in the Midwest. Because large numbers of meat and poultry workers are immigrants—and perhaps employed illegally—they may fear retaliation or loss of employment if they are injured and cannot perform their work, and they may be hesitant to report an injury. Furthermore, according to data from OSHA and academic researchers published in a BLS periodical, some plants offer employees or groups of employees incentives, such as money

²⁸*Underreporting of Occupational Injuries and Its Impact on Workers' Safety*, (Parts 1, 2, & 3) Hearings Before a Subcommittee of the Committee on Government Operations, House of Representatives, 100th Congress, Washington, D.C., March 19, 1987; May 6, 1987; and September 21, 1987.

²⁹E.S. Pollack and D.F. Keimig, eds., *Counting Injuries and Illnesses in the Workplace: Proposals for a Better System*, Washington, National Research Council, National Academy Press, 1987. Beginning in 1992, survey information on nonfatal incidents involving days away from work was expanded to profile (1) the occupation and other demographics (e.g., age and gender) of workers sustaining such injuries and illnesses, (2) the nature of these disabling conditions and how they occurred, and (3) the resulting time away from work.

or other prizes, for maintaining low injury and illness rates.³⁰ According to the report, while these incentives may improve safety, they also may discourage workers from reporting injuries that could result in their not winning the incentive prize or preventing an entire group of workers from obtaining the prize. In addition, some plants judge the performance of line supervisors based on the number of days their workers go without an injury or illness. These supervisors, also influenced by performance incentives, may underreport injuries or encourage workers not to report injuries or illnesses.³¹ Several of the plant officials we interviewed told us that they provide incentives and rewards to employees or groups of employees who work for extended periods of time without injury.

Many Factors Affect Injury and Illness Rates

Injury and illness rates may be affected by many factors, such as employer or employee emphasis on safety, the amount and quality of training, employee turnover rates, and the speed of the production line.

Officials from a company, union, or trade association may take steps that affect worker safety and health. For example, a company may form a plant safety committee that reviews incidents of injury and illness to identify safety issues and take steps to address weaknesses. In addition, company officials may influence worker safety and health by showing their commitment to safety through actions such as establishing medical safety management programs at the plants, providing personal protective equipment to workers, and disciplining workers who do not follow safety procedures.³² Unions can also play a role in worker safety and health by negotiating with company officials to take a more proactive approach to addressing work conditions. Trade associations may offer training courses and conferences on safety issues, guidance on meeting OSHA

³⁰Hugh Conway and Jens Svenson, *Occupational Injury and Illness Rates, 1992-96: Why They Fell*, Monthly Labor Review, BLS, November 1998.

³¹During inspections, OSHA compliance officers ask plant officials if they utilize incentive programs to reward their employees. An OSHA compliance officer we spoke to told us that as part of her education and outreach during an inspection, she suggests alternative ways of rewarding employees that could minimize underreporting but still reward safe and healthy work environments, such as providing rewards for consistently wearing personal protective equipment or using safe work practices.

³²A medical safety management program is one that addresses plant safety and security, emergency management, fire prevention, and the proper training of employees on the handling and safeguarding of hazardous materials and medical equipment. It also includes guidelines for creating and using an incident reporting system, as well as the steps necessary to educate employees on issues like infection control, personal protective equipment, ergonomics, and workplace violence.

requirements, and other assistance to companies in improving safety and health.

Both OSHA and industry officials noted that training is a critical factor in worker safety and health. Companies provide employee training in a number of forms, including classroom instruction, on-the-job training, and written and video training materials (generally in English and Spanish). Meat and poultry plants typically offer several days of training at the beginning of a worker's employment covering both job-specific and general safety training. Plants periodically offer additional training classes or updates—many of which are mandatory—such as annual refreshers on workplace safety and health. Many plants also offer or require annual specialized training on safety issues, such as knife sharpening, which can reduce strain on line workers, and accident prevention such as “lock-out/tag-out” procedures that ensure that machinery is manually locked or disconnected from a power source when not in use and tagged to note that it has been locked or should not be used. In addition, one plant assigns mentors, or buddies, to new workers to help them work more safely in an introductory period.

Turnover rates can also affect the safety and health of workers. Turnover tends to be high in the meat and poultry industry and, according to a report by USDA's Economic Research Service, turnover rates of 100 percent a year or more are not uncommon.³³ High turnover can affect safety and health at meat and poultry plants, according to one plant safety official, because new employees are more likely to sustain an injury or illness than more experienced workers. In the first few months of employment, an employee may take shortcuts—because of the lack of familiarity with proper procedures—that increase his or her vulnerability to injury or illness. Plant officials often attribute high turnover to difficult working conditions, extreme temperatures, and the fact that many of the industry's jobs are physically demanding and stressful.

The speed at which production employees are expected to work, often determined by the speed of the production line, or line speed, may also be an important factor influencing their safety and health. The faster the pace at which the production line moves, the less able workers may be to perform tasks needed for safety. For example, according to industry research, at certain line speeds workers may be unable to take the seconds

³³ Agricultural Economic Report No. 785, Washington, D.C., February 2000.

required to perform certain critical tasks, such as the frequent sharpening of knives, to ensure that their jobs can be conducted safely. Some respondents to our survey also noted that line speed is an important factor affecting worker safety and health. While some trade association representatives and plant officials told us that the risks associated with line speed can be mitigated by adding more workers to the line or rotating workers to other jobs, advocacy group and union representatives have discounted that argument, stating that some plants may not have either the additional employee resources to add to the line or the additional space in the line configuration needed to add more workers.

Line speed is regulated by USDA to permit adequate inspection by food safety inspectors. According to USDA, when the maximum speeds were originally set and when they are adjusted by the agency, the safety and health of plant production workers is not a consideration. OSHA has made recommendations to companies to slow their line speed, as well as to make other safety improvements when citing companies for repetitive motion injury issues, according to an OSHA official. Research is lacking, however, on the full effects of line speed on worker safety and health. Industry and OSHA officials told us that the differences across slaughter and cutting lines prevent systematic comparison, analysis, and regulation of line speed. According to these officials, because machinery is arrayed differently on each line, research that might isolate ergonomic limits and improvements, or examine the incidence of other line-related injuries, is difficult to accomplish. However, a memorandum issued in 2000 by Nebraska's Lieutenant Governor recommended that OSHA "undertake a legitimate study of the speed of the line in meatpacking plants" and that "the industry should work cooperatively on that study."³⁴ NIOSH officials and nongovernmental ergonomic experts told us that line speed should be further researched in order to understand its impact on worker safety and health.

While USDA has established regulations on line speed, the purpose of the agency's authority is not to protect workers, but to protect consumers. USDA sets maximum line speeds based on how quickly its inspectors can properly inspect the carcasses to ensure the safety of the meat. According to trade association officials we interviewed, plants set their line speeds at

³⁴Memorandum from Nebraska's Lieutenant Governor Dave Maurstad to Nebraska's Governor Mike Johanns entitled, "Review of Working Conditions in Nebraska Meatpacking Plants," January 24, 2000.

a rate at or below the maximum while considering such factors as (1) the speed at which employees can work and still produce a quality product and (2) the number of animals that need to be processed. While a high-ranking OSHA official we spoke to stated that he believed that the agency has the regulatory authority to set its own line speed maximums, he also said that it would be a difficult area to regulate.

While OSHA's Programs May Have Improved the Safety and Health of Meat and Poultry Workers, Programmatic Weaknesses Make Determining Effectiveness Difficult

OSHA has several efforts that target the meat and poultry industry, and there is some evidence that these efforts have had a positive effect on worker safety and health. However, the criteria OSHA uses to select worksites for inspection may allow some plants with high injury and illness rates to avoid inspection. OSHA's selection criteria do not require the agency to examine trends in worksites' injury and illness rates in order to select plants for inspection that have recently reported significant changes in their rates. In addition, some of the data on which OSHA bases its selection may be underreported and are incomplete. Furthermore, OSHA's data collection efforts make determining program results difficult.

Some of OSHA's Enforcement Efforts Target Compliance in the Meat and Poultry Industry

Some of the inspections of employer compliance with federal safety and health standards that OSHA conducts are of meat and poultry worksites. As shown in table 2, OSHA conducted about 1,900 inspections of plants in the meat and poultry industry from 1995 to September 15, 2004.³⁵ These inspections represented less than 1 percent of OSHA's total inspections.

³⁵ An additional 189 inspections were made by state occupational safety and health agencies in state-plan states. In state-plan states, program safety and health standards, and the enforcement of such standards, must be at least as effective as federal OSHA programs. See 29 U.S.C. § 667(c)(2).

Table 2: OSHA Inspections in the Meat and Poultry Industry, 1995 to 2004

Year	Number of inspections in the meat and poultry industry	Number of inspections in all U.S. manufacturing	Total number of inspections
As of Sept. 15, 2004	154	6,489	29,229
2003	193	8,777	39,718
2002	169	8,913	39,076
2001	160	8,145	36,500
2000	179	8,425	35,110
1999	252	8,985	36,018
1998	289	8,957	34,080
1997	212	9,886	35,916
1996	158	7,281	25,850
1995	168	7,727	26,399
Total	1,934	83,585	337,896

Source: OSHA's inspections database.

OSHA also has efforts that focus on solutions to injuries prevalent in the meat and poultry industry, such as repetitive stress disorders. For example, OSHA's current ergonomics inspection plan uses its worksite-specific injury and illness database to identify workplaces in industries with higher than average injury rates. OSHA focuses its ergonomics inspection resources on industries with relatively high rates of injuries that appear to be related to ergonomic hazards. In addition, OSHA's regional or area offices may implement local emphasis programs in industries with high musculoskeletal disorder or repeated trauma rates and known ergonomic hazards.³⁶ The agency also responds to employee complaints about ergonomic hazards.

³⁶In 2003, OSHA implemented local emphasis programs in meatpacking and three other industries: hospitals, warehousing, and automotive parts manufacturing.

OSHA Has Involved the Meat and Poultry Industry in Its Cooperative Programs

In 2002, OSHA formed an alliance with the American Meat Institute to promote safe and healthful working conditions for meat industry workers.³⁷ The alliance is meant to help reduce ergonomic hazards in the workplace. It sets specific goals and priorities; key among them is for both OSHA and the institute to develop and disseminate information and guidance, particularly through their Web sites. The goal is to provide the institute's members and others in the meat industry with information to help protect workers' health and safety, with a focus on reducing and preventing exposure to ergonomic hazards. The alliance also calls for both organizations to provide training on ergonomics techniques, program structure, and applications in the meat industry. Another goal is for OSHA and the American Meat Institute to promote and encourage the institute's members to participate in OSHA's cooperative programs such as the Voluntary Protection Programs and mentor other members in helping them qualify for participation.

The American Meat Institute also assists OSHA in maintaining and updating information on safety and health in the meat industry on its Web site. The institute, along with other stakeholders, provided information to OSHA for the safety and health topics page on the agency's Web site entitled "OSHA Assistance for the Meat Packing Industry," and the agency's Web-based training tool ("eTools") for ammonia refrigeration.³⁸ OSHA provides information on eTools on many topics pertinent to the meat and poultry industry, including ammonia refrigeration, machine guarding, lock-out/tag-out procedures, poultry processing, confined space, and ergonomic hazards.

Through its Strategic Partnerships Program, OSHA has established national and regional partnerships within the meat and poultry industry. OSHA has partnered with companies such as

- **Tyson Foods.** Initiated in 2001, this partnership covers two poultry processing facilities. The 5-year agreement has a goal of improving and

³⁷The American Meat Institute represents the interests of packers and processors of beef, pork, lamb, veal, and turkey products and their suppliers throughout North America. Together, its members produce 95 percent of the beef, pork, lamb, and veal products and 70 percent of the turkey products in the United States. Headquartered in Washington, D.C., the institute provides legislative, regulatory, public relations, technical, scientific, and educational services to the industry.

³⁸Through its Web site, OSHA offers eTools on several subjects that provide stand-alone, interactive, training tools on occupational safety and health topics.

strengthening the company's safety and health management systems, reducing injuries and illnesses, and serving as a model for improved worker protection throughout the company.

- **ConAgra Refrigerated Foods.** This multiregional partnership, which ended in January 2002, was meant to improve safety and health programs and improve the relationship among OSHA, ConAgra, and the United Food and Commercial Workers union and to prepare plants working toward participation in OSHA's Voluntary Protection Programs.
- **Odom's Tennessee Pride Sausage Inc.** Through its regional partnership with OSHA's region 6, Odom's has committed to reducing its illness and injury rates and working toward participation in OSHA's Voluntary Protection Programs.

OSHA's Omaha area office has implemented the following two partnerships:

- **Nebraska's meat processing industry.** In February 2000, members of Nebraska's meat processing industry and OSHA initiated a voluntary partnership program intended to address the high fatality, injury, and illness rates that have plagued the industry. The group meets bimonthly to learn about current safety and health practices, share safety-related best practices that have proven successful in their facilities, and discuss safety issues of concern to participants. Company representatives provide injury and illness data to OSHA for tracking purposes on a semiannual basis.
- **Nebraska cleaning and sanitation companies.** Citing the hazardous working conditions encountered by employees of companies that provide contract cleaning and sanitation services to meat and poultry plants, in 2003, OSHA's Omaha Area Office decided to establish a partnership with these companies in order to help reduce injuries and illnesses. Representatives of five companies have committed to a regional partnership with OSHA's region 7 in an effort to work cooperatively and collaboratively to reduce workplace fatalities, injuries, and illnesses common to cleaning contractors such as strains, lacerations, contusions, burns, fractures, amputations, dermatitis, and crushing injuries. The goals of the partnership are to reduce days away from work by 4 percent and to improve existing safety and health management programs.

OSHA has not, however, implemented programs similar to the Omaha Area Office's partnerships in other areas of the country with large concentrations of meatpacking plants or extended this type of program to poultry plants. A high-ranking OSHA official told us that each area office

develops its own initiatives, which may be directed at other industries or hazards than those in the meat and poultry industry. In addition, according to the official, there were individuals in the Omaha office who had a keen interest in the partnering approach used in the meatpacking industry and had the entrepreneurial spirit to start these programs. The office has presented its approach to at least one other office in an effort to share its experience.

Several of OSHA's Special Efforts Target the Meat and Poultry Industry

OSHA has other special compliance efforts that target the meat and poultry industry. For example, several pages of OSHA's Web site are dedicated to the meat and poultry industry; they list the standards the agency uses to combat hazards prevalent in this industry.³⁹ OSHA also has several directives specific to the industry, such as guidance on the acceptable methods for guarding meat-cutting saws. In addition, OSHA issues interpretations and compliance letters on issues specific to the meat and poultry industry.

Ergonomic Guidelines for the Meat and Poultry Industry

OSHA has also produced the following two sets of ergonomic guidelines for the meat and poultry industry:

- *Ergonomic Program Management Guidelines for Meat Packing Plants.* This document, jointly developed by OSHA and the American Meat Institute, was developed in 1990 and contains advisory information on management commitment and employee involvement, including preventive program elements and detailed guidance.
- *Guidelines for Poultry Processing.* This document, published by OSHA in September 2004, offers practical recommendations for employers to reduce the number and severity of musculoskeletal disorders throughout the industry. In developing the guidelines, OSHA reviewed existing ergonomics practices and programs, state OSHA programs, as well as available scientific information. OSHA also consulted with stakeholders, such as the National Turkey Federation, to gather information on the ergonomic problems present in the poultry-processing environment and the practices that have been used successfully in the industry.

Memorandum of Understanding with USDA

Because USDA inspectors are a constant federal presence in plants, OSHA has established agreements with USDA, the latest of which is meant to

³⁹Some of these standards include process safety management of highly hazardous chemicals, general requirements for all machines, and guarding of portable power tools.

improve compliance in meat and poultry plants. In 1994, USDA and OSHA jointly revised an existing memorandum of understanding between the agencies that established a process and framework for (1) training USDA meat and poultry inspection personnel to improve their ability to recognize serious workplace hazards within the meat and poultry industry, (2) reinforcing procedures for meat and poultry inspection personnel to report unsafe and unhealthy working conditions to which they are exposed to the appropriate authorities, (3) instituting new procedures for USDA's meat and poultry inspection personnel to refer serious workplace hazards affecting plant employees to OSHA, and (4) coordinating possible inconsistencies between OSHA's job safety and health standards and USDA's sanitation and health standards.

According to the agreement, OSHA's training of USDA inspectors would not be expected to supplant OSHA expertise in identifying serious workplace hazards. In addition, USDA inspectors would not be trained to recognize and refer serious workplace hazards affecting plant employees that tend to arise only after protracted, cumulative exposure, such as those related to repetitive motion and noise.

According to USDA officials, the memorandum was revised after a devastating poultry plant fire in 1991 that killed 25 workers. According to reports about the fire, the plant's fire doors had been padlocked from the outside by the factory owner, who had locked the doors as a "loss control technique" to prevent workers from stealing product. A USDA poultry inspector was often present at the plant and testified at a congressional hearing on the fire that he knew the doors were regularly locked in violation of safety codes and had reported this to plant officials.⁴⁰ He did not, however, contact OSHA.

Although the purpose of the revised memorandum of understanding was to educate USDA inspectors on recognizing and referring workplace hazards, the agencies' efforts to implement the agreement, such as providing training to USDA inspectors and evaluating the effectiveness and impact of the training, have lapsed. According to OSHA officials, although the agency put together training materials for USDA inspectors, only one training session was held, and only a small number of individuals

⁴⁰*Review of U.S. Department of Agriculture's Food Safety and Inspection Service Workplace Safety Regulations*, Hearing Before the Subcommittee on Department Operations, Research, and Foreign Agriculture of the Committee on Agriculture, House of Representatives, 102nd Congress, Washington, D.C., November 12, 1991.

were trained. USDA officials we spoke to confirmed this, and stated that not a lot of effort was made to train inspectors.⁴¹ USDA officials told us that OSHA had proposed a week's worth of training and that it would be very difficult to pull inspectors from their line duties and send them to training for that length of time. In their comments on a draft of this report, USDA officials noted that in-plant inspectors routinely receive training on topics such as wellness, awareness of infectious diseases, and worker health and safety.

Evidence Suggests OSHA's Programs Have a Positive Impact on Worker Safety and Health

Some positive outcomes have resulted from OSHA's efforts directed at the meat and poultry industry. For example, in 2003, OSHA inspected 193 meat and poultry plants to determine their compliance with federal safety and health standards. These inspections produced safety improvements in several of the plants inspected, according to OSHA, trade association officials, and some plant officials we interviewed. In addition, according to OSHA and trade association officials, the widespread use of the agency's ergonomic guidelines for meatpacking plants has contributed to a decline in worker illness and injury rates in the last decade.

OSHA's partnerships have also, according to the agency, had positive outcomes. For example, according to information on its Web site, as a result of OSHA's partnership with ConAgra Refrigerated Foods, many of the company's facilities have formed new safety and ergonomics committees with both management and union participation. According to OSHA, five of the company's nine participating facilities experienced significant decreases in workers' compensation costs ranging from 42 percent to 93 percent (with an average reduction of 62 percent), suggesting a reduction in the injury and illness rates for these five participating facilities.

Another of OSHA's partnerships, with meatpacking plants in Nebraska, has shown some positive outcomes. According to officials from OSHA's Omaha Area Office and some plant officials who participate in the partnership, the group has made progress toward the goal of making the industry safer. In addition, according to the participants, the relationship between OSHA and Nebraska's meatpackers, which had been strained, if not antagonistic, has improved significantly, and the group has made tremendous progress in building cooperative, trusting relationships. These

⁴¹USDA trains its employees on safety and health issues that affect them personally.

relationships have developed not only between OSHA and the plants, but also among the plant officials themselves. According to officials at OSHA's Omaha Area Office, over the 4-year existence of the partnership, the members have realized a 23 percent reduction in injuries and illnesses resulting in days away from work or restricted work activities. There has also been a 39 percent reduction in total recordable injury and illness cases, a total that includes cases resulting in days away from work, cases resulting in restricted work, and cases requiring medical treatment. OSHA officials told us that they consider these to be noteworthy improvements over a relatively short period of time in an extremely hazardous industry. Furthermore, the partnership has allowed OSHA to reach out directly to meatpacking plants too small to meet the agency's criteria for inspection (those with fewer than 40 employees) and provide them with information about improving safety and health at their plants.

OSHA's memorandum of understanding with USDA has also resulted in some positive outcomes. According to a high-ranking OSHA official, since the revised memorandum was signed in 1994, USDA inspectors have made 31 referrals to OSHA, 26 of which resulted in an OSHA inspection. USDA does not track this information and could not verify the number of referrals made by its inspectors to OSHA. However, we were told by USDA officials that the department's inspectors rarely make referrals because workplace hazards are not the focus of their inspections. In addition, we were told that USDA inspectors are more likely to discuss observed hazards with plant management before referring them to OSHA, since they have established relationships with the plants and because the hazards could affect them as well as plant employees. Finally, OSHA officials said that because a referral may cause OSHA to inspect the plant, some USDA inspectors may be reluctant to make such referrals because it could mean that OSHA would include them in the inspection and cite them for violations, such as not wearing their personal protective equipment.

Several meat and poultry plants have taken advantage of OSHA's various cooperative programs. Since 1996, 391 meat and poultry worksites have received consultation services through OSHA's On-Site Consultation Program.⁴² In addition, OSHA has also recognized some meat and poultry plants as having exemplary safety and health management systems, although the relatively low numbers of participants from this industry

⁴²The number of visits is actually higher because some worksites have received multiple visits or an employer can make one request that requires services at several worksites.

indicates the difficulty in meeting program requirements. As of September 30, 2004, only 8 of the 1,180 Voluntary Protection Programs worksites were in the meat and poultry industry. Similarly, as of September 1, 2004, only 8 of the 844 worksites participating in OSHA's Safety and Health Achievement Recognition Program were in the meat industry, and no poultry plants participated in the program.

Selection Criteria May Not Trigger Inspection of At-Risk Plants, and Data Collection Makes Assessing Effectiveness Difficult

While the criteria OSHA uses to select worksites for inspection focuses its limited resources mainly on plants with relatively high injury and illness rates, the agency does not consider trends in worksites' injury and illness rates over time. As a result, OSHA may not detect dramatic decreases in these rates that could raise questions as to the accuracy of the figures. This is of particular concern given the allegations of underreporting in the industry and weaknesses in the data used to select plants for inspection. OSHA does, however, select some worksites with low injury and illness rates in an attempt to ascertain whether worksites with low rates are underreporting injuries and illnesses. It also randomly selects some worksites from high-hazard industries for record-keeping audits designed to verify the injury and illness rates reported to OSHA. For both of these efforts, however, OSHA selects few meat and poultry plants. Furthermore, the data it collects on specific worksites—kept in multiple databases—are not easily tracked, because OSHA does not assign a unique identifier to each worksite. Therefore, it is difficult to assess the effectiveness of OSHA's efforts to improve safety and health.

Selection Criteria

The criteria OSHA uses to select meat and poultry plants for inspection target worksites that report high injury and illness rates. However, OSHA's selection criteria do not allow it to detect anomalies in worksites' reported injury and illness rates, because the agency does not analyze data on plants' injury and illness rates over time. Although OSHA surveys meat and poultry plants annually to obtain worksite-specific data on their injury and illness rates and uses these data to select plants for inspection, it does not review the data collected from previous years in order to examine changes in their injury and illness rates. In addition, these data are incomplete, because OSHA's survey sample varies from year to year, and because OSHA only asks employers for 1 year of injury and illness data. In 2002, we reported the problem with OSHA collecting only 1 year's worth of data, concluding that this limited the agency's ability to effectively identify

hazardous worksites for inspection.⁴³ Area office officials we interviewed for that report said that, in some cases, the 1-year rate was an outlier that did not reflect general worksite operations.

The data on which OSHA bases its selections are also incomplete because, when it surveys worksites in the meat and poultry industry, OSHA does not ask employers to report injuries and illnesses incurred by contract cleaning and sanitation workers who work at the plant. Because these workers are not employees of the plant, their injuries and illnesses are recorded by the companies for whom they work rather than on the plants' injury and illness logs.⁴⁴ As a result, OSHA does not consider all injuries and illnesses in selecting meat and poultry plants for inspection. This is a significant oversight because, according to OSHA officials, experts, and researchers, these workers incur high rates of injury and illness and often sustain more serious injuries than production workers. According to information in OSHA's inspections database, between 1998 and 2003, at least 34 contract cleaning and sanitation workers employed in meat and poultry plants sustained serious injuries or were killed. However, because these injuries were recorded as occurring in another industry, none of the injuries were reflected in the meat and poultry industry's injury and illness rates.⁴⁵

A large number of workers perform this work under contract for meat and poultry plants; we interviewed three cleaning and sanitation companies that employ more than 5,000 workers at 140 plants across the country.⁴⁶ One contract cleaning company representative reported that the biggest risk factor affecting the safety of these workers was workers' decisions to take shortcuts, such as not properly performing lock-out/tag-out procedures for machinery before cleaning it. Another representative said

⁴³GAO, *Workplace Safety and Health: OSHA Can Strengthen Enforcement through Improved Program Management*, [GAO-03-45](#), (Washington, D.C.: Nov. 22, 2002).

⁴⁴Injuries and illnesses sustained by cleaning and sanitation workers who are not employees of the plant are recorded in the general industry category of "Services," which includes maids, janitors, and other workers employed in cleaning services. Because this industry is not considered high hazard, OSHA does not collect data from worksites in the industry to use in selecting worksite for inspection.

⁴⁵These injuries included fractures, severe chemical exposure, fatal falls, incidents of crushed or severed limbs or heads, and injuries necessitating amputation.

⁴⁶See appendix II for more information on our interviews with the contract cleaning and sanitation companies.

he felt that the biggest risk factor was the difficulty in communicating how hazardous the complex and intricate machinery is because of language or cultural differences. OSHA inspects the cleaning and sanitation shift during its inspections of meat and poultry plants, whether the workers are employees of a contract company or the plant. However, plants whose contract workers have high injury and illness rates may not be selected for inspection because these injuries are not included in the data OSHA uses to select meat and poultry plants for inspection.

Because there are allegations of underreporting in the meat and poultry industry, OSHA attempts to counter such incidences by verifying the injury and illness rates of worksites it inspects as part of its SST program. In addition to reviewing employers' logs during SST inspections, OSHA also randomly selects for inspection 200 worksites each year that report low injury and illness rates in high-hazard industries to ensure that these worksites are not underreporting injuries and illnesses.⁴⁷ In 2003, 5 of the 200 worksites selected were meatpacking plants; in 2004, 10 were meatpacking plants. The sausage and other prepared meats industry and the poultry industry did not have injury and illness rates that met the criteria for this effort. Therefore, OSHA did not select any worksites in these industries for inspection that reported low rates.

In a separate effort designed in part to combat underreporting of injuries and illnesses, OSHA annually conducts a number of comprehensive record-keeping audits intended to verify the accuracy of the data on injuries and illnesses that employers submit to OSHA.⁴⁸ However, the selection criteria it uses allow the agency to audit the records of only a few meat and poultry plants. While OSHA's limited resources allow it to select few worksites in any industry for a record-keeping audit, OSHA is not doing enough to verify the accuracy of the data that meat and poultry

⁴⁷OSHA uses BLS's aggregate industry data to determine which industries are high-hazard. The worksites OSHA selects report a days away from work, restricted, or transferred rate between 0.0 and 4.0 and a days away from work injury and illness rate between 0.0 and 2.0, and are selected from industries that have a days away from work, restricted, or transferred rate of 8.0 or greater or a days away from work injury and illness rate of 4.0 or greater. OSHA began this effort to inspect 200 low-rate reporting worksites from high-rate industries in 2002.

⁴⁸The major difference between the records audits conducted as part of this program and records reviews performed during other inspections is the attainment of a medical access order by the OSHA compliance officer prior to the audit. A medical access order allows OSHA to obtain documents such as, medical records, state workers' compensation forms, insurer's accident reports, company safety incident reports, and first aid logs.

plants report, considering the dramatic decreases in this industry's reported injury and illness rates. Of the 250 worksites OSHA selected for the audits of 2001 and 2002 data, only 3 each year were in the meat and poultry industry.

While the criteria it uses to select worksites for inspection are rarely altered, according to OSHA officials, in 2004, they adjusted the criteria used to select the 200 worksites with low injury and illness rates for inspection in order to focus on worksites with a large number of employees. Previously, OSHA selected worksites in high-hazard industries with a minimum of 40 employees for these inspections; currently, it selects worksites with a minimum of 200 employees. This change will likely have the effect of OSHA selecting even fewer meat and poultry plants that report low injury and illness rates for inspection, because the majority of plants have fewer than 200 employees. In addition, we were told by a high-ranking OSHA official that the agency is considering adjusting the criteria further to double the number of worksites with low illness and injury rates for inspection. However, according to OSHA officials, adjusting the criteria further—for example, to enhance the agency's focus on a particular industry such as meat or poultry—would require additional resources and a consideration of the effect on other industries.

Data Collection

OSHA's data do not allow the agency to determine the impact of its enforcement and cooperative programs on the meat and poultry industry. To determine the impact of its efforts, OSHA could match the injury and illness data it collects from employers to data on inspections and employer participation in its cooperative programs. However, such matching, which would allow the agency to better relate reductions in injury and illness rates to its interventions, cannot be easily performed. The data it collects on specific worksites—recorded in multiple databases—are not easily tracked because OSHA does not assign a unique identifier to each worksite. Without such an identifier that can be tracked across databases, the agency is unable to easily consolidate all the information associated with each worksite. Without the ability to compare this information across databases, it is difficult to assess the success of its efforts.

We attempted to assess the impact of OSHA's programs on the meat and poultry industry by comparing worksite-specific data across its various databases to determine an association between changes in a plant's injury and illness rates and the agency's efforts. However, we encountered problems because of the lack of a unique identifier for each worksite. To match data on specific worksites without such an identifier, we relied on other identifiers—such as the name of the company, address, or zip

code—to find the data associated with a company over time. However, because of differences in how these identifiers appeared in each of OSHA’s databases, we could not reliably track data for specific companies. For example, from one year to the next, a company’s name may appear differently in the various databases, or a match on address may not produce a match for the company name. OSHA officials we spoke to acknowledged the difficulties involved in this type of effort. In fact, they recently encountered similar problems in their attempts to evaluate the impact of the SST program in 2004 (see app. III for more information).⁴⁹ OSHA’s inability to assess the effectiveness of its efforts has been a recurring finding.

In November 2002, we recommended that OSHA take steps to assess the impact of its SST program on workplace injuries and illnesses. Similarly, in March 2004, we reported that OSHA’s lack of comprehensive data on its cooperative programs—such as their relative impact on worksites’ safety and health—makes it difficult to fully assess the effectiveness of these programs.⁵⁰ OSHA agreed with our recommendation but pointed out that the agency’s variety of strategies reach out to different types of industries, employers, and workers, making it difficult and costly to compare their relative effects.

Conclusions

The dangerous and repetitive nature of the work in the meat and poultry industry results in a variety of injuries and illnesses to workers. Although the efforts by government, employers, and advocacy groups have helped improve worker safety and health in this industry, and according to BLS the number and rate of injuries and illnesses have decreased substantially over the last decade, additional improvements could be made. For example, the criteria that OSHA uses to select plants for inspection, while reasonable, do not incorporate consideration of dramatic or sudden decreases in injury or illness rates in selecting plants for inspection. In addition, because OSHA lacks complete data on the injuries and illnesses of meat and poultry workers, particularly those employed by cleaning and

⁴⁹*Evaluation of OSHA’s Impact on Workplace Injuries and Illnesses in Manufacturing Using Establishment-Specific Targeting of Interventions*, Prepared for OSHA by ERG, Lexington, Mass.: July 23, 2004.

⁵⁰GAO, *Workplace Safety and Health: OSHA’s Voluntary Compliance Strategies Show Promising Results, but Should Be Fully Evaluated before They Are Expanded*, [GAO-04-378](#), (Washington, D.C.: Mar. 19, 2004).

sanitation companies, plants in need of inspection may not be identified and selected. Further, because OSHA does not track changes in individual plants' injury and illness rates, or have a method for comparing these rates with data collected on inspections or plants' participation in its cooperative programs, it lacks a means of understanding the impact its programs have on workers in this industry.

OSHA also lacks some of the information needed to participate more fully in improving worker safety and health. For example, until the effects of line speed are studied from a worker safety and health perspective to better understand its effect on injury and illness rates, it will be difficult for OSHA to provide meaningful input with regard to the process of regulating the speed of the production line. In addition, OSHA has been slow in expanding its successful efforts. Because its most successful program aimed at improving safety and health has not been replicated in other areas of the country, OSHA is not allowing workers in its other jurisdictions to realize the benefits, such as the potential for a reduced number of injuries and illnesses, of this program. Finally, the memorandum of understanding between USDA and OSHA is not being utilized to the full extent possible. The efforts called for by the memorandum of understanding to reinforce and supplement the training of USDA inspectors so they are able to recognize and refer serious workplace hazards in meat and poultry plants have lapsed.

Recommendations for Executive Action

In order to strengthen the agency's efforts to improve safety and health of workers at meat and poultry plants, the Secretary of Labor should direct the Assistant Secretary for Occupational Safety and Health to consider

- adjusting OSHA's criteria for selecting worksites for SST inspections and for record-keeping audits to consider worksites that have had large reductions in their injury and illness rates over time;
- requiring worksites that are surveyed by OSHA to obtain worksite-specific data on injuries and illnesses to include (1) multiple years of data, so that trends in their rates may be analyzed and (2) data on injuries and illnesses to workers employed by cleaning and sanitation companies that provide workers to the plant under contract so that these data can be included in the rates OSHA uses to select plants for inspection;
- requiring that a common identifier for each plant be used in all of its enforcement and cooperative program databases so that these different

data sets can be more easily compared in an effort to measure the agency's impact on worker safety and health; and

- expanding successful partnerships, such as the Omaha Area Office's partnership with meatpacking plants in Nebraska to other area offices with high concentrations of meat and poultry plants.

The Secretary of Labor should direct the Assistant Secretary for Occupational Safety and Health and the Secretary of Agriculture should direct the Acting Administrator of the Food Safety and Inspection Service to

- revisit and update their memorandum of understanding to ensure that USDA inspectors receive training in recognizing and referring workplace hazards and that the agreement remains current.

In addition, the Secretary of Health and Human Services should

- direct the Director of the Centers for Disease Control and Prevention to have NIOSH conduct a study of the effect of the speed of the production line on workers in the meat and poultry industry, a study that would also include other job-specific features that interact with line speed to increase the risk of injuries and illnesses to these workers.

Agency Comments

OSHA, USDA, HHS, and BLS provided us with written comments on a draft of this report, which are reproduced in appendixes IV, V, VI, and VII, respectively. The agencies generally agreed with all of the recommendations that applied to them.

OSHA noted that it has solicited public comments on its SST program and will consider our suggestion to expand its selection criteria for SST inspections. The agency also commented that it will cooperate with USDA to encourage the revitalization of USDA inspector training and will work with NIOSH and others to investigate the relationship between line speed and the risk of injury. Finally, OSHA pointed out that some of the remaining recommendations, such as expanding its data collection efforts, could have significant impact on the agency's resources and that it would consider these recommendations in conjunction with decisions on how best to allocate the resources it has available.

USDA noted that, because its in-plant employees are a federal presence in meat and poultry plants, they can help detect and report serious

workplace hazards to OSHA. The agency also noted its responsibility to enforce the Humane Methods of Slaughter Act, emphasizing that, if in-plant inspectors witness egregious violations of the act—such as hoisted animals struggling or thrashing—they have the authority to take immediate enforcement action against such firms including stopping the production line. USDA commented that compliance with the act indirectly improves workplace safety.

HHS agreed that there is a need to study the relationship between line speed and musculoskeletal disorders and other injuries in the meat industry, and stated that it would direct NIOSH to conduct such a study. The agency noted, however, the difficulty its staff have had in the past in gaining access to meatpacking plants to conduct research. HHS also commented on the resource commitment that would likely be involved for such a large and detailed, but necessary, study.

BLS noted that, although it conducted a major redesign of its annual survey of occupational injuries and illnesses in 1992, (in part because of concerns about the completeness of employer reporting,) there is still some concern about underreporting of injuries and illnesses among users of the data. The agency also noted several technical corrections to the report, as did OSHA, USDA, and HHS, which we incorporated as appropriate.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this report. At that time, we will send copies of this report to the Secretary of Labor, the Assistant Secretary of Labor for Occupational Safety and Health, the Secretary of Agriculture, the Acting Administrator of the Food Safety and Inspection Service, the Secretary of Health and Human Services, and the Director of the Centers for Disease Control and Prevention. We will also make copies available to others upon request. In addition, the report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

Please contact me or Revae Moran on (202) 512-7215 if you or your staff have any questions about this report. Other contacts and staff acknowledgments are listed in appendix VIII.

A handwritten signature in black ink that reads "Robert Robertson". The signature is written in a cursive, flowing style.

Robert E. Robertson
Director, Education, Workforce, and
Income Security Issues

Appendix I: Scope and Methodology

For this report, we attempted to (1) describe the characteristics of workers in meat and poultry slaughter and processing plants and the conditions in which they work; (2) identify the types of injuries and illnesses workers in meat and poultry slaughter and processing plants incur, how the injury and illness rates have changed over the past decade, and the factors that may have affected these rates; and (3) determine what is known about the effectiveness of the Occupational Safety and Health Administration's (OSHA) efforts to improve safety and health at meat and poultry slaughter and processing plants. To address these objectives we

- obtained and analyzed relevant data from the Bureau of Labor Statistics (BLS) on worker demographics and workplace injuries, illnesses, and fatalities; OSHA's inspection database; the data OSHA uses to target specific worksites for inspection; and information on plants that participate in OSHA's cooperative programs;
- conducted a survey of meat and poultry plants to obtain data on their workers, factors that affect their injury and illness rates, plants' efforts to improve safety and health, and plants' interactions with OSHA;
- interviewed officials from OSHA and other federal agencies, such as the U.S. Department of Agriculture (USDA) and the Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health (NIOSH) within the Department of Health and Human Services (HHS), as well as individuals from contract cleaning and sanitation companies, unions, advocacy groups and key trade associations; and
- visited six meat and poultry plants.

Reliability of USDA's, BLS's, and OSHA's Data

To determine the number, location, and regional distribution of plants, we examined USDA's Food Safety and Inspection Service's Performance Based Inspection System database. This management system integrates weekly schedules of inspection tasks; documents inspection findings including deviations, deficiencies, and corrective actions; and provides a database for the automatic data-processing support system.

To describe the characteristics of workers employed in the meat and poultry slaughter and processing industries, we obtained demographic estimates for meat and poultry workers and for the manufacturing industry as a whole from BLS's Current Population Survey (CPS) March supplement for 2004 and 1995. The CPS is a monthly survey of households conducted by the U.S. Census Bureau for BLS. The CPS, a sample of

60,000 households, provides a comprehensive body of information on the employment and unemployment experience of the nation's population, classified by age, sex, race, and a variety of other characteristics.

Because the CPS estimates are based on probability samples, they are subject to sampling error. Slightly different estimates could result from different samples. We express our confidence in the precision of our particular sample's results as a 95 percent confidence interval. This is the interval that would contain the actual population value for 95 percent of the samples we could have drawn. As a result, we are 95 percent confident that each of the confidence intervals in this report will include the true values in the study population.

For the CPS estimates in this report, we estimated sampling error and produced confidence intervals using the methods provided in the technical documentation for the 2004 and 1995 March supplements. All CPS percentage estimates contained in this report have 95 percent confidence intervals within plus or minus 8 percentage points of the estimate itself. All other CPS estimates contained in this report have 95 percent confidence intervals within plus or minus 14 percent of the estimate itself, unless otherwise noted.

We also reviewed data on injuries and illnesses, collected and published by BLS through its Survey of Occupational Injuries and Illnesses, for calendar years 1992 to 2002, as they related to workers in the meat and poultry industry. BLS's Survey of Occupational Injuries and Illnesses provides estimates of the number and frequency (incidence rates) of workplace injuries and illnesses based on logs kept by private industry employers during the year. Survey estimates are based on a scientifically selected sample of worksites, some of which represent only themselves but most of which also represent other employers of like industry and workforce size that were not chosen in a given survey year. Besides providing injury and illness counts, survey respondents also are asked to provide additional information for a subset of the most serious nonfatal cases logged, namely, those that involved at least 1 day away from work, beyond the day of injury or onset of illness. Employers answer several questions about these cases, including the demographics of the worker disabled, the nature of the disabling condition, and the event and source producing that condition. BLS calculates relative standard errors for all estimates it tabulates (see BLS's Web site for more information). These relative standard errors were used to develop 95 percent confidence intervals for each estimate. In this report, all estimates of incidence rates have 95 percent confidence intervals of within plus or minus 14 percent of

the estimated incidence rate. For example, the estimated rate for tendonitis in 1992 was 23.6 cases per 10,000 full-time meat and poultry workers. Since 14 percent of 23.6 is 3.3, the confidence interval for this interval is within 20.3 to 26.9 cases per 10,000 full-time workers.¹

We also reviewed data on fatalities, collected and published by BLS through its Census of Fatal Occupational Injuries for calendar years 1992 to 2003 as they related to workers in the meat and poultry industry. BLS's Census of Fatal Occupational Injuries is a federal-state cooperative program that has been implemented in all 50 states and the District of Columbia since 1992. To compile fatality counts that are as complete as possible, the census uses multiple sources to identify, verify, and profile fatal worker injuries. Information about each workplace fatality—occupation and other worker characteristics, equipment involved, and circumstances of the event—is obtained by cross-referencing the source records, such as death certificates, workers' compensation reports, and federal and state agency administrative reports. To ensure that fatalities are work-related, cases are substantiated with two or more independent source documents or a source document and a follow-up questionnaire. Data compiled by the program are issued annually for the preceding calendar year. We report the 2003 data in a footnote because the data are not comparable with data from previous years. According to BLS, the new industry and occupational classifications the agency is required to use may, in some instances, have different definitions than the classification system used previously.

To analyze the extent to which OSHA interacts with meat and poultry plants through its enforcement programs, we analyzed inspections data for fiscal years 1996 to 2004 from OSHA's Integrated Management Information System and worksite-specific injury and illness data collected by OSHA. We assessed the completeness of these data by reviewing OSHA's documentation on how the data were collected and performed electronic tests to look for outliers, missing values, and duplicate records. On the basis of these reviews and tests, we found the data sufficiently reliable for

¹All the rates of occupational injury and illness in this report are based on BLS data. BLS calculates a relative standard error for each estimate it tabulates, and the 95 percent confidence intervals for the detailed rates cited in this report are all within plus or minus 14 percent of the estimated rates. Rather than report confidence intervals for every incidence rate estimate in this report, a broad conservative confidence interval is used to cover all BLS incidence rate estimates. For this particular estimate, the confidence interval is plus or minus 2.5 percent of the estimated tendonitis incidence rate estimate used in this report.

our purposes. In addition, for OSHA's inspections data, we obtained and reviewed documentation of internal controls.

We analyzed the data that OSHA uses to target specific worksites for inspection through its SST program. These data are collected by OSHA through its annual Data Initiative, which is a nationwide collection of worksite-specific injury and illness data from approximately 80,000 worksites. OSHA collects data from worksites by using the OSHA Work-Related Injury and Illness Data Collection Form.

To report on the extent that meat and poultry plants participate in OSHA's various cooperative programs, we analyzed OSHA's consultation database, its lists of Voluntary Protection Programs and Safety and Health Achievement Recognition Program sites, and its lists of current alliances and strategic partnerships.

We interviewed USDA, OSHA, and BLS officials to establish the reliability of the data. We found the data to be sufficiently reliable for our purposes.

Analysis of BLS's CPS and Injury and Illness Data

We explored, for this report, different ways in which the CPS and BLS's injury and illness data could be used to track changes in injury and illness rates for various groups of workers and discovered several limitations. For example, we analyzed CPS data on worker demographics by industry and data on injuries and illnesses sustained by workers. Using the two data sets, we attempted to determine whether workers in certain demographic groups—such as males and females, whites and minorities, and younger and older employees—were sustaining more injuries or illnesses now than would be expected, taking into account the number of individuals in these demographic groups. We also attempted to estimate differences in injury rates, or in the likelihood of being injured, between certain worker demographics, such as gender, race, and age. However, a large percentage of cases in the meat and poultry industry that were reported to BLS—24 percent in 2002—lacked data on the race of the injured worker since race is not a required reporting item.² Because of this lack of data, it was not possible to determine whether workers of a certain race were disproportionately injured.

²Because OSHA does not require employers to record race data on its case reporting form, BLS cannot require employers to report it as part of the detailed data it collects for these serious cases. Instead it is a voluntary item and BLS does not receive the race data for roughly one in four of the injured or ill workers.

First, BLS's data on injuries and illnesses cannot be used by themselves to estimate injury rates or the likelihood of being injured, since those data include only information on workers who were injured, but not on workers who were not injured. While BLS's injury and illness data could be used to estimate the numbers of workers in the meat products industry at risk of being injured, overall and in each of the subgroups of interest to us, its injury and illness data do not provide demographic information (e.g., data on race, sex, or age) on all workers who were injured, but only those workers whose injuries were serious enough to have resulted in the workers requiring time off from work. While we might have merged information from BLS's injury and illness data and information from the CPS in order to estimate rates of injuries requiring time off, and differences in those rates across subgroups, that task was complicated by the fact that there was considerable information missing on race, which was one of the factors of greatest interest to us. Because BLS does not require the various states and industries surveyed to disclose the race of employees injured, some choose not to, and ultimately race is unknown for roughly one in every four persons injured.

In addition, we could have estimated differences in the rates of injury and illness requiring time off across sex and age categories. However, the lack of detailed information in the CPS on the types of jobs held by workers employed in the meat products industry would not have made it possible for us to determine whether differences in injury and illness rates across age and sex categories was a result of differences in these demographic characteristics or the result of women and older employees having different types of jobs than men and younger workers.

Survey of Meat and Poultry Plants

To obtain information about safety and health and the characteristics of their workforce, we administered a survey to a sample of meat and poultry plants. Our survey population consisted of plants represented in OSHA's worksite-specific injury and illness database for years 1999 to 2002. This database contains annual information on occupational injuries and illnesses at the worksite (plant) level. The data on worksites, operating in what are considered high-hazard industries, have been collected since 1995. Since the data for approximately one-third of all existing plants above a certain size are updated in the database in any particular year, we included in our sample, all plants included in the database during the most recently available 4-year period (1999 to 2002). The specific industries on which we focused were meat and poultry plants in Standard Industrial Classification code 201—the meat products industry—including those in meatpacking plants, code 2011; the sausages and other prepared meat

products industry, code 2013; and the poultry slaughtering and processing industry, code 2015.

Sample Design

Our survey sample included all plants from the database with more than 1,250 employees. The remaining plants were stratified by industry, using the three Standard Industrial Classification codes for each of the three industries that encompass the meat products industry. We drew a random sample from each of these three industries.

From our total sample of 420 plants, 24 were eliminated for various reasons, including the fact that the plant had gone out of business, the plant was not a meat or poultry plant, or the plant was duplicated elsewhere in our sample.

Survey Administration and Response Rates

To develop our questionnaire, we consulted with officials at the American Meat Institute and the United Food and Commercial Workers union, and experts at GAO. We pretested a draft of the questionnaire with six companies in the meat products industry. We mailed the questionnaire, addressed to the plant safety director (or other appropriate management personnel), requesting information on the demographic characteristics of the plant's workforce, the working conditions of the plant, the safety training and related efforts undertaken within the plant, and the plant's interaction with (and respondent's opinions on) OSHA. The survey was conducted between July 2004 and September 2004.

The overall response rate of 23 percent compromises our ability to generalize the findings across the population of plants and to present statistically valid results. While the sample was designed to draw inferences from the study population, we did not produce estimates of the population of meat producers based on our sample results. We arrived at this decision both because the response rate was low and because it is likely that certain key characteristics of respondents differ from those of nonrespondents. For example, since two major companies refused to participate, our responses did not include the responses of any plants from these companies; the experiences of our respondents may differ from those of plants from these companies. Table 3 summarizes the sample sizes by industry, their disposition, and our response rates.

Table 3: Survey Sample Sizes, Disposition, and Response Rates

Industry sector	Population ^a	Sample	Out of scopes ^b	Responses received	Refused to participate	Response rate
Meatpacking plants with 1,250 employees or fewer	393	101	4	26	26	27%
Sausage and other prepared meat products plants with 1,250 employees or fewer	407	121	5	42	12	36%
Poultry slaughtering and processing plants with 1,250 employees or fewer	397	100	11	19	20	21%
All large meat and poultry plants with more than 1,250 employees	98	98	4	8	25	9%
Total	1,295	420	24	95	83	23%

Source: GAO analysis.

^aThe population values represent the number of plants in OSHA’s worksite-specific injury and illness database between 1999 and 2002.

^b“Out of scopes” include plants that did not slaughter or process meat or poultry or that were no longer in operation at the time of survey administration.

Because of our low response rate, we did not use the data obtained from the survey to draw conclusions about the meat and poultry industry. Instead, we used the responses to illustrate some of the information provided from other sources in our report, such as opinions about OSHA as a factor in the safety and health of workers. We also used the data to provide examples about the range of responses we found. For example, we reported that one plant had an employee turnover rate that could reach 200 percent from data obtained from our survey.

Interviews with OSHA Area Offices

To describe the variety and extent of OSHA efforts within the meat and poultry industry, we interviewed officials from four OSHA regional offices. We selected these regional offices based on information from OSHA’s inspections database, which contains data on inspections and fines levied by OSHA. We examined the inspections data to determine the regional offices that had conducted the highest number of inspections from January 2003 to July 2004 for plants in Standard Industrial Classification codes 2011, 2013, and 2015. From these interviews, we obtained information about their activities in the meat and poultry industry within their respective regions, including any regional and local emphasis programs, their perspectives on factors affecting the safety and health of workers in this industry, and coordination efforts between their offices and USDA.

Visits to Meat and Poultry Plants

During the course of this review, we visited six meat and poultry plants. Of the six plants, we visited four (two beef, one pork, and one poultry slaughter and processing plant) to obtain a better understanding of the work performed by workers in meat and poultry plants and the conditions in which they work. During these visits, we toured the plants and spoke to plant officials about worker demographics, plant operations, injury and illness history, and their experiences with and opinions of OSHA. Three of these four plants were selected because they were located in an area of the country where meat production is high; the other was close to our headquarters office. We visited two additional plants for the purpose of pretesting our survey instrument; we did not tour these two plants.

Appendix II: Interviews with Cleaning and Sanitation Companies

We interviewed three cleaning and sanitation companies that provided contracted services to meat and poultry plants. In total, these three companies employed over 5,000 non-union workers and operated in 140 different plants across the country. One company representative told us the company had contracts to operate in plants owned by some of the largest companies in the meat and poultry industry.

In general, all three cleaning and sanitation companies employed workers who tended to be young and Hispanic. The companies supplied small plants with crews as small as 1 or 2 employees and large plants with crews as large as 150 employees. According to representatives from these companies, cleanup shifts at plants can range from only 2.5 hours to 12 hours, but typically shifts lasted less than 8 hours. While the majority of time is spent cleaning the slaughter and process areas, at many plants the crews are responsible for also cleaning bathrooms and office space. At the end of the cleanup shift each day, the slaughter and process areas must pass a USDA inspection in order for the plant to restart its operations. All three companies' representatives reported that if the plant is not cleaned within the time allotted for USDA inspection, they must pay some type of monetary penalty to the plant.

The companies reported providing their workers with all safety and health training. In addition, the companies employed safety auditors who travel to various plants to examine safety issues. These examinations may include interviewing contract workers to see if they are aware of certain safety regulations or procedures, such as "lock-out/tag-out" procedures, the issue cited as most important by the companies.

With regard to the incidence of repetitive motion injuries, one company representative stated that these types of injuries among their workers are limited because sanitation workers perform tasks that are different from those performed by plant workers in that they are constantly moving around and not performing repetitive tasks. He said, however, that conditions such as working at night, sweating from the steam, freezing from the cold, and being wet all the time contribute to the high turnover for his employees.

Appendix III: OSHA's Study on Its Impact Using Establishment-Specific Targeting of Interventions

In November 2002, we recommended that OSHA take steps to assess the impact of its SST program on workplace injuries and illnesses.¹ OSHA has since conducted its first major evaluation of the effectiveness of the SST program and, in 2004, issued a report detailing the results of its evaluation.² The report states that worksites experienced statistically significant cumulative 3-year reductions in the number of injuries and illnesses as a result of OSHA's efforts.³ However, while these results indicate positive outcomes, the study did not attempt to isolate the impact of OSHA's efforts from other factors—such as employers' own safety programs—that may have as much or more of an influence on injuries and illnesses. In fact, several employers who responded to our survey stated that the reduction in their injury and illness rates could be attributed to other factors that they claimed worked in addition to, or in place of, OSHA's efforts, and that these other factors were as important in achieving safety and health improvements.

In performing this evaluation of its SST program, OSHA encountered difficulties in identifying worksites across databases and dealing with the incompleteness of certain data fields.⁴ While not invalidating the conclusions in its report, the difficulties OSHA encountered suggest that the data collection for its worksite-specific injury and illness database could be improved. In particular, OSHA did not consistently assign a

¹See [GAO-03-45](#).

²*Evaluation of OSHA's Impact on Workplace Injuries and Illnesses in Manufacturing Using Establishment-Specific Targeting of Interventions*, Prepared for OSHA by ERG, Lexington, Mass.: July 23, 2004.

³We did not evaluate documentation related to the development of the models presented, so we did not determine whether the work was done correctly. As described, however, we believe that OSHA's approach was reasonable and in line with current methodological approaches.

⁴OSHA used complex data cleaning and matching algorithms to prepare and combine information within its establishment-specific injury and illness database and between it and other databases. The establishment-specific injury and illness database, in particular, presented many challenges since it is derived from annual surveys of business establishments. For instance, some of the surveys received were rejected from the analysis because of missing information, some were duplicate entries, and about half were rejected because they could not be matched to an establishment in the prior year. OSHA used similar matching procedures to combine the injury and illness data with the intervention records housed within OSHA's inspections database. We believe that OSHA's description of analysis difficulties with enterprise-level data is fair and, as described, OSHA's efforts to work through such difficulties seemed thorough. The analysis file OSHA constructed, though, most likely contains some unknown measure of mismatch.

**Appendix III: OSHA's Study on Its Impact
Using Establishment-Specific Targeting of
Interventions**

unique identifier to each plant, which made it difficult to compare information across databases. This issue, combined with a lack of information in the 2004 report concerning how the model was developed and tested, points to a need to use caution in interpreting the report's results.

Appendix IV: Comments from the Occupational Safety and Health Administration

U.S. Department of Labor

Assistant Secretary for
Occupational Safety and Health
Washington, D.C. 20210



DEC 15 2004

Mr. Robert E. Robertson
Director, Education, Workforce and
Income Security Issues
U.S. Government Accountability Office
441 G Street NW, Room 5930
Washington, DC 20548

Dear Mr. Robertson:

Thank you for this opportunity to respond to the Government Accountability Office's (GAO) report on safety and health in the meat and poultry industries. GAO's acknowledgement of the Occupational Safety and Health Administration's (OSHA) efforts to address workplace safety and health issues in this important sector is appreciated.

OSHA recognizes the benefits of the data collection and analysis conducted by GAO for this report and the findings resulting from GAO's analysis. The study notes a decrease in injuries and illnesses for the meat and poultry industry between 1992 and 2001, which OSHA has also noted in many other high-hazard industries. GAO's study notes the possibility of the under-reporting of injuries and illnesses as a possible factor in the decline of injury and illness rates in the meat and poultry industries. OSHA recognizes the central importance of accurately reported injury and illness data for meeting its mission, and will continue to monitor and carefully analyze data from the full spectrum of high-hazard industries to appropriately allocate its resources.

As GAO has further noted, there has been a shift in worker demographics in this industry. This shift has resulted in impacts on the traditional workforce with regard to, among other things, organized representation, the increasingly large role of contract cleaning workers, training challenges for this transient workforce, and the competitive business pressures that have permanently affected the future of the industry.

OSHA has expanded its mix of traditional and new initiatives to address these challenges. Some of OSHA's responses include cooperative programs like the one in Omaha, Nebraska, recognized in the report. While OSHA has experienced success with national and local meatpacking partnerships, these remain voluntary initiatives. Partnership agreements, evaluation results, and successes are shared through our public web site, and through internal communications among the national, regional and area offices. Some offices build on these successes by duplicating the initiative within

2

their jurisdiction; other offices elect to focus on other priorities, such as those identified in OSHA's Strategic Management Plan.

OSHA's responses to the dynamic nature of today's workplaces are not limited to cooperative and other voluntary programs, but also consist of new enforcement initiatives such as site-specific targeting (SST) and local- and national-emphasis programs.

The Agency has solicited public comments on its SST program; we are currently reviewing comments from industry associations, employers and safety and health professionals. As we complete this review, we will consider your suggestion to expand the criteria for SST inspections in this industry. OSHA would also like to note that the analysis of the SST program at the top of page 10 includes the construction-industry sector in the inspection total. Since construction is not part of SST, the proportion of inspections comprised of SST inspections is greater than reported.

GAO's other recommendations -- to expand data-collection efforts for multiple years for trend analysis, inclusion of recordkeeping submittals to capture contract workers illness and injuries, linking the IMIS and other data processing systems to come up with unique identifiers -- all have a significant impact on OSHA's resources. We will consider GAO's recommendations as we consider the appropriate allocation of resources to get the most out of what is available to the Agency.

OSHA will cooperate with the Department of Agriculture to encourage the revitalization of the USDA-inspector training. With respect to the recommendation for further study on line speed, there have been a large number of studies examining the relationship between repetitive motion, which is indirectly related to line speed, and the risk of injury. However, additional study may be useful, particularly because repetition acts in combination with other factors (e.g., awkward postures, force and cold temperatures) that impact an employee's risk of injury. Therefore, OSHA will continue to work with its partners in NIOSH, academia and with other stakeholders to investigate these complex multifactorial interactions.

OSHA looks forward to working with you to continue to address the health and safety hazards for meat and poultry workers. If you have any questions, please feel free to call Keith Goddard, Director, Directorate of Evaluation and Analysis at (202) 693-1935.

Sincerely,



John L. Henshaw

Appendix V: Comments from the U.S. Department of Agriculture



United States
Department of
Agriculture

Food Safety
and Inspection
Service

Washington, D.C.
20250

Robert E. Robertson
Director
Education, Workforce, and Income Security Issues
United States Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Robertson:

In your letter dated November 18, 2004, you requested the U.S. Department of Agriculture (USDA) written comments on the Draft report GAO-05-96 "WORKPLACE SAFETY AND HEALTH: Safety in the Meat and Poultry Industries, While Improving, Could Be Further Strengthened." Thank you for the opportunity to provide comments on the draft report.

In general, we agree with the findings and conclusions of the report. Since in-plant employees of the Food Safety and Inspection Service (FSIS) are a federal presence in meat and poultry plants, they can help detect and report serious workplace hazards to the Occupational Safety and Health Administration (OSHA).

General Comments:

1. The full week of workplace safety training for FSIS in-plant employees as proposed by OSHA was not implemented, but it is important to note that in-plant FSIS employees do receive training on wellness, awareness of zoonotic diseases, and worker health and safety. FSIS employees may not have the expertise of OSHA employees, but, as the report noted, FSIS employees are not expected to supplant the safety expertise of OSHA in identifying serious workplace hazards.
2. The report indicates that some USDA inspectors may be reluctant to make referrals to OSHA because it could mean that OSHA would include them in the inspection and cite them for violations. Although there may be some inspectors in the field that believe this, OSHA does not reveal the name of an employee that files a complaint to the employer. Neither does OSHA reveal the identity of FSIS employees that file complaints or make referrals to OSHA. It also does not issue notices or citations to individual Federal employees as a result of an inspection.
3. As the report noted, most workplace hazards affect FSIS and plant employees. The referrals to OSHA from FSIS mentioned in the report (page 39) are limited only to those referrals that affect plant employees. In accordance with 29 CFR 1960—Elements for Federal Employee Occupational

Safety and Health Programs, Federal employees are encouraged to report hazards to their employer. However, FSIS employees have the right to a report a hazard to FSIS, the Department of Agriculture or OSHA. FSIS employees may also report problems directly to plant management, and are encouraged to do so to rectify dangerous situations immediately. FSIS employees have several methods for reporting workplace hazards, and the referrals to OSHA mentioned in the report likely only represent a fraction of those reported by FSIS employees.

4. Slaughter establishments are expected to be fully compliant with the Humane Methods of Slaughter Act (HMSA). The situation you describe on page 21 of the draft report of hoisted animals struggling and thrashing wildly would be an egregious violation of the HMSA. In-plant inspectors that witness egregious violations of the Act have the authority to take immediate enforcement action against such firms including stopping the production line until the slaughter process is brought under control. Compliance with the HMSA, although related to the humane treatment of food animals, indirectly improves workplace safety.

Please find enclosed additional specific USDA comments on the draft report.

Sincerely,



for Ronald F. Hicks
Assistant Administrator
Office of Program Evaluation, Enforcement and Review

Enclosure

Appendix VI: Comments from the U.S. Department of Health and Human Services



DEPARTMENT OF HEALTH & HUMAN SERVICES

Office of Inspector General

Washington, D.C. 20201

DEC 13 2004

Mr. Robert E. Robertson
Director, Education, Workforce, and
Income Security Issues
U.S. Government Accountability Office
Washington, DC 20548

Dear Mr. Robertson:

Enclosed are the Department's comments on the U.S. Government Accountability Office's (GAO's) draft report entitled, "Workplace Safety and Health—Safety in the Meat and Poultry Industries, While Improving, Could Be Further Strengthened" (GAO-05-96). The comments represent the tentative position of the Department and are subject to reevaluation when the final version of this report is received.

The Department provided several technical comments directly to your staff.

The Department appreciates the opportunity to comment on this draft report before its publication.

Sincerely,

A handwritten signature in cursive script that reads "Daniel R. Levinson".

Daniel R. Levinson
Acting Inspector General

Enclosure

The Office of Inspector General (OIG) is transmitting the Department's response to this draft report in our capacity as the Department's designated focal point and coordinator for U.S. Government Accountability Office reports. OIG has not conducted an independent assessment of these comments and therefore expresses no opinion on them.

**COMMENTS OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES
ON THE U.S. GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT
REPORT, "WORKPLACE SAFETY AND HEALTH—SAFETY IN THE MEAT
AND POULTRY INDUSTRIES, WHILE IMPROVING, COULD BE FURTHER
STRENGTHENED" (GAO-05-96)**

The Department of Health and Human Services (HHS) appreciates the opportunity to review the U.S. Government Accountability Office's (GAO's) draft report on a serious occupational safety and health hazard. Although the rates of work-related musculoskeletal disorders and other injuries in the meatpacking industry have dropped in the last decade, they continue to be high. Past attempts to reduce the hazard through engineering and administrative controls have been met with limited success. Typically, these attempts have not specifically addressed the potential role of line speed as an independent risk factor.

HHS agrees with GAO regarding the need to study the relationship between line speed and musculoskeletal disorders and other injuries in the meatpacking industry. As recommended, the Secretary will direct the Centers for Disease Control and Prevention's (CDC) Director to have the National Institute for Occupational Safety and Health (NIOSH) conduct this study.

However, there are a few factors that need to be considered in conducting such a study. In the past, CDC/NIOSH has had difficulty gaining access to meatpacking plants for the purpose of conducting research. In order to conduct this study as directed by GAO, this barrier will need to be overcome. Also, to adequately address the "job-specific features" that affect the risk of injuries and illnesses to workers as GAO recommends, the study would need to take into account other known physical hazards present in these plants (e.g., forceful exertion and awkward postures), as well as individual factors (e.g., age, obesity) and work organizational factors that can impact the occurrence of musculoskeletal disorders.

Finally, it would be necessary to consider the costs needed for such an important study. Based on experience, undertaking this large, detailed, and necessary study would require a commitment of resources. HHS appreciates the recommendation of GAO and is committed to high quality useful research that can be translated into improving worker health and safety.

Appendix VII: Comments from the Bureau of Labor Statistics

U.S. Department of Labor

Bureau of Labor Statistics
2 Massachusetts Ave. N.E.
Washington, D.C. 20212



DEC 15 2004

Robert E. Robertson
Director
Education, Workforce, and Income Security Issues
U.S. Government Accountability Office
441 G. Street, N.W.
Washington, D.C. 20548

Dear Mr. Robertson:

The Bureau of Labor Statistics (BLS) would like to thank the Government Accountability Office (GAO) for the opportunity to comment on the draft report entitled "Workplace Safety and Health: Safety in the Meat and Poultry Industries, While Improving, Could be Further Strengthened" (GAO-05-96). The BLS is pleased that the GAO found its data helpful in writing this report, and the BLS would like to add the following comments.

The BLS is very concerned that readers may incorrectly conclude that the BLS provided confidential data to the GAO for the purpose of this report because the data it has received from OSHA is not clearly attributed to OSHA. In particular, information on individual injury, illness, or fatality cases, or individual firm's safety and health record from OSHA is not clearly separated from information that cites BLS data on overall industry numbers, rates, or types of injuries or illnesses. If the OSHA data are not clearly footnoted, readers might assume both the industry statistics and the specific examples are from the BLS.

The BLS conducted a major redesign of the annual survey of occupational injuries and illnesses in 1992, in part due to concerns about the completeness of employer reporting. While there is still some concern about underreporting of injuries and illnesses among users of the data, citing the 1987 congressional testimony seems inappropriate given the changes in the program since that time. We urge the GAO to eliminate these references from the report.

The GAO aggregated fatality numbers for the meat product industry for the years 1992-2003. Beginning in 2003, when the BLS fatal workplace injuries census began using the North American Industry Classification System (NAICS), the definition of this industry changed. Previous years' data were classified according to the Standard Industrial Classification (SIC) structure. The BLS regards this as a break in series. The data should not be aggregated across this break. We prefer that the GAO cite the 2003 data separately if it wishes to include it in the report.

The BLS is concerned that the citations of our data be as accurate as possible. There are a number of different injury and illness rates (total recordable cases, cases with days away from work, cases with days away from work, job transfer, or restriction) and a range of detailed statistics for different components of the meat products industry. It is incumbent on the GAO

**Appendix VII: Comments from the Bureau of
Labor Statistics**

U.S. Department of Labor

Bureau of Labor Statistics
2 Massachusetts Ave. N.E.
Washington, D.C. 20212



and other data users to be sure the data used are cited appropriately so that readers of this draft do not make inferences that are incorrect. The BLS and the GAO staff are working to address this problem in the draft report.

Finally, BLS requests that the GAO continue to contact the BLS through its GAO liaison or the point-of-contact designated at the Entrance Conference. By doing so, confusion regarding the verification of data requests or validation of data provided may be minimized.

The BLS looks forward to continuing its work with the GAO regarding this report. Should you require further assistance, please contact the GAO liaison, Lisa Nolte, at (202) 691-5104.

Sincerely,

A handwritten signature in black ink that reads "Katrina W. Reut".

KATRINA W. REUT
Associate Commissioner
for Compensation and
Working Conditions

Appendix VIII: GAO Contacts and Staff Acknowledgments

GAO Contacts

Revae E. Moran, (202) 512-3863
Monika R. Gomez, (202) 512-9062

Staff Acknowledgments

David G. Ehrlich and Friendly M. Vang-Johnson made significant contributions to this report throughout the review. In addition, Luann M. Moy helped develop our data collection instrument and our overall design and methodology; Margaret L. Armen and Richard P. Burkard provided legal support; Avrum I. Ashery, Jennifer R. Popovic, and Melba Edwards designed our graphics; Paula J. Bonin, Mark F. Ramage, Douglas M. Sloane, and Beverly A. Ross provided technical assistance; and Corinna A. Nicolaou assisted in report and message development.

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