Labor Migration and the COVID-19 Pandemic: a Pilot for a Comparative Study of Policy Impacts on Workers in the Food Supply Chain in Germany, the Netherlands, and the US

This work was supported by the Global Health Seed Fund of the UIC School of Public Health

and

Illinois Occupational Surveillance Program

National Institute for Occupational Safety and Health #U60OH010905-06

Authors

Linda Forst, MD, MPH
Division of Environmental and Occupational Health Sciences

Michaela Beamon-Richardson, MPH
Division of Community Health Sciences

Syeda Imam, MPH Candidate
Division of Epidemiology

International collaborators who assisted in framing the focus of this work

Nora Gottlieb, PhD
Bielefeld University, Germany

Tesseltje de Lange
Radboud University, Netherlands

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BACKGROUND

In the U.S., workers in the **agriculture** and **meatpacking** sectors were hard hit during the **SARS-CoV-2 pandemic,** experiencing extremely high morbidity and mortality rates, second only to workers in the healthcare industry. Risks attendant to general working conditions—high density and close proximity to co-workers, rapidly moving assembly lines, and highly exertional tasks were compounded by poor implementation of recommended public health measures, including provision of N95 masks, handwashing, worker testing and screening. All of this occurred within the context of low wages, unstable employment, lack of paid sick leave, limited or no healthcare access, and a high proportion of immigrant workers who are paid in cash or employed via work visas; these factors encouraged workers to come to work even with symptoms of COVID-19. Notably, a large proportion of these workers live in shared and congregate housing and share transportation to work. Aside from the evidence of companies' disregard for recommended measures to prevent disease spread among their workforces, there is also substantial evidence of influence peddling on the part of meatpacking conglomerates. Companies operated without public health or occupational safety and health oversight until a workforce crippled by COVID-19 could no longer sustain production. Spread of disease from workplaces into local, rural communities highlights the adverse consequences of these practices.

The conditions in U.S. meatpacking and agriculture were mirrored around the world. Labor migrants are prevalent in these sectors in Western Germany and in the Netherlands. These countries also experienced COVID-19 outbreaks, despite differences in national policies related to employment, healthcare, and immigration A comparison of **policies and practices**--among three large countries, in different regions, with a substantial influx of immigrant workers and a critical need to maintain the **food supply chain**—can provide a framework for understanding the conditions that led to COVID-19 outbreaks among meatpacking companies and farmworkers as well as the communities in which they are located. Findings from this analysis could guide the protection of vulnerable workforces and management of future public health crises.

Investigators at the University of Illinois Chicago School of Public Health examined **policies and public health data** in the realms of **immigration**, **employment**, and **health** in the **meatpacking and agriculture** sectors in **Illinois--**one of the highest producers in the US food supply chain--during the **COVID-19 pandemic**. Our analysis, presented here, will form the basis for **next steps**: laying out important definitions, identifying informative data sources, and assembling a roster of key informants--individuals and representatives of business, government, university, unions, and advocacy groups. Our aims are: 1) to identify and harmonize local parameters for a larger, international study; and 2) to establish a partnership of investigators in the U.S. (University of Illinois Chicago), Germany (Bielefield University) and Netherlands (Radboud University).

INTRODUCTION

The SARS-CoV-2 pandemic--diagnosed in nearly 84 million Americans and claiming the lives of over one million between February of 2020 and June 30, 2022--has brought into stark relief the health, safety and security threats facing people in the US and around the globe. At the outset, healthcare workers were recognized as "essential" to efforts to contain the virus, prevent morbidity and mortality, and allow all aspects of society (and life) to function. Calls for personal protective equipment (PPE), social distancing, sanitation, clinical testing and contact tracing, as well as employee management plans, began within healthcare organizations almost simultaneously with the first cases of COVID-19. [1,2]

As stay-at-home orders were instituted, most economic activities closed or required work from home; however, companies in the Food Supply Chain (FSC) continued to operate, considered to be "critical infrastructure." [3,4]

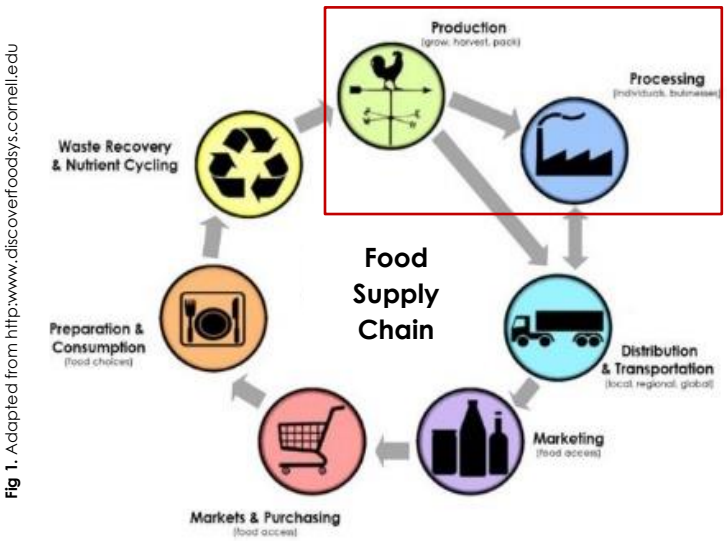


Fig 1. Adapted from http:www.discoverfoodsys.cornell.edu

Initially, FSC workplaces were not re-configured for social distancing; sanitation and entry procedures were not instituted; workers were not offered PPE; and plans were not put in place to address disease outbreaks. Lack of paid sick leave and the threat of losing their jobs compelled this, largely, immigrant workforce to come to work, even when symptomatic. The failure to systematically address the consequences of unchecked work practices during the pandemic led to serious outbreaks of COVID-19 in the FSC: in the first year of the pandemic there were some 59,000 meatpackers who became infected, with 270 documented deaths in the U.S. [5] In fact, meatpacking accounted for some of the largest recognized COVID-19 clusters in the United States and Europe. [6-9]

Agriculture and meatpacking jobs are physically taxing and generally unaesthetic [10]. They are located in remote and rural areas; they require long work hours, pay low wages, and evade health and safety enforcement. Employment arrangements tend to be precarious—wages are often paid in cash, social benefits are not provided, and workers, frequently hired through temporary staffing companies or labor contractors, can be discharged at will and without consequences for employers or the economy. Both the job tasks and the employment conditions dissuade citizens in high income countries from taking these critical infrastructure jobs. These jobs commonly attract immigrant and migrant workers—individuals with limited employment options who are willing to "do anything" to support themselves and their families. [11]

In the Midwestern U.S., agricultural and meatpacking workers tend to come from south of the border. Mostly Mexican and Central American, most farmworkers are settled in the U.S.; they shift into agriculture in the planting and harvesting seasons and then into manufacturing and construction in the "off" (winter) season. A large proportion of agricultural workers migrate from the south to north, sometimes coming across the Mexican border and sometimes from areas in the southern US; they follow the harvest and return south in winter. Meatpackers are commonly immigrants and refugees that have settled in the U.S. There are special visas for temporary agricultural and livestock workers (H2A).

In Germany and the Netherlands, most agricultural workers are EU citizens largely from East- and Sounth-East European countries—such as Romania, Bulgaria, and Poland--who are willing to do hard work to escape

poverty in their home countries. EU citizens are legally permitted to work in any EU country, and like in the U.S., immigrants and itinerant workers are offered jobs that are not desirable to German and Dutch nationals.

Meatpacking and agriculture are "job ghettoes" for immigrant workers. [12] Excess COVID-19 morbidity and mortality due to lack of appropriate policies and regulatory oversight is layered on discriminatory practices based on immigration status combined with racism, extreme poverty, undesirable job tasks, hazardous working conditions, lack of a social safety net, employment precarity, and cultural and linguistic isolation. SARS-CoV-2 has become a syndemic of injustice that is replicated within countries and across borders. [13,14]

OBJECTIVES

Comparison of similarities and differences in political, economic, and social policies and practices between countries and regions during the COVID-19 pandemic can offer insights on ways to address human rights violations and achieve worker justice in the food supply chain. Investigators from the US, Germany, and Netherlands have committed to undertaking a collaborative effort to compare national, local, and hyperlocal conditions of workers in the agriculture and meatpacking sectors; this is a first step toward elucidating approaches that will contribute to greater health equity and equality for these workers. The aims of this preliminary research are:

1) to document policies and practices related to immigrant and migrant labor in agriculture and meatpacking (employment, health, and immigration), before, during, and after the pandemic;

2) to identify potential sources of direct information (data sources and interview participants) among workers, worker advocates, labor unions, employers, and state and federal government agencies; and

3) to establish a research and educational collaboration between UIC School of Public Health, Bielefeld University, and Radboud University related to labor migration and health.

APPROACH

Investigators from UIC SPH (Forst. Beamon, Imam), Bielefeld University (Gottlieb) and Radboud University (deLange, others) met online several times to plan our first collaborative project. We elected to focus on Illinois, the fifth largest state in the U.S. (population of 12.9 million), because of similarities in population size between Illinois, the one Western German state (North-Rhine, Westphalia) where many meatpacking plants are located, and Netherlands, overall. We also considered: the importance of state laws regarding employment, immigration, and handling of the pandemic; our access to Illinois data through the Illinois Occupational Surveillance Program; the importance of meatpacking and agriculture in Illinois; and our relationships with government and non-government organizations that could assist with triangulating and interpreting the data.

We crafted a roadmap for gathering both peer reviewed and "gray" literature that could be harmonized across countries. We focused on three overarching areas--immigration, employment, and health-- in relation to agricultural work and meatpacking. We looked for established policies, as well as new policies and outcomes related to work in agriculture and meatpacking during the SARS CoV-2 pandemic (2020-2022). UIC-School of Public Health Global Health Seed Funding supported this project on the U.S. side.

This work did not include a "human subjects" component and was formally designated as non-human subjects research by the UIC Institutional (ethics) Review Board.

EPIDEMIOLOGY OF COVID-19 IN THE U.S. AND ILLINOIS

General COVID trends in the US Population and in the State of Illinois

In the U.S., multiple organizations have constructed data for COVID-19 cases, analyzing hospital data, blood testing, sewage testing, contact tracing, death records, and other data sources. [15-17] Data were constructed for the U.S. overall, for each of the 50 states plus territories, and later by smaller geographic areas. Data shown here comes from the U.S. Centers for Disease Control and Prevention based on reported cases (confirmed by testing). The State of Illinois, the 5th largest state with a population of 12.9 million, had COVID-19 trends similar to the U.S., overall.

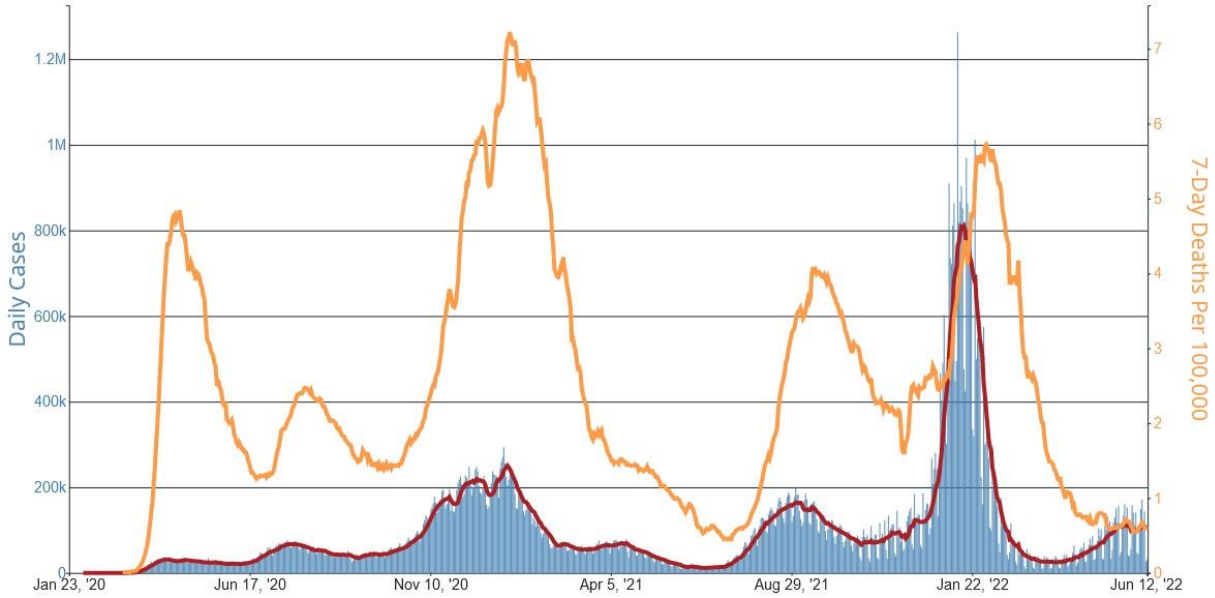
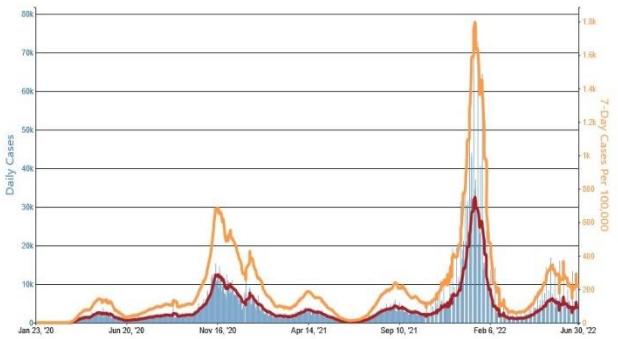


Figure 2. Daily trends in no. of cases and 7-day cumulative incidence rate of COVID-19 deaths **in the U.S.,** reported to CDC, per 100,000. (https://covid.cdc.gov/covid-data-tracker/#trends_dailycases_7daycasesper100k)



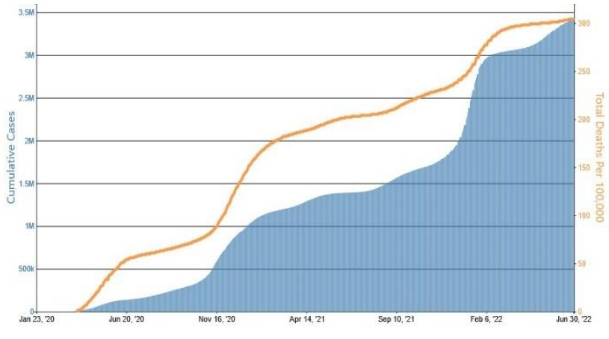


Figure 3. Trends in total cases and cumulative incident rate of COVID-19 deaths **in Illinois** reported to CDC per 100,000 population. https://covid.cdc.gov/covid-data-tracker/#trends_totalcases_totaldeathsper100k

COVID-19 in Agriculture and Meatpacking in the US, overall, and in the State of Illinois

Public health surveillance data collection is fragmented. Infectious disease data during COVID-19 were collected through the National Electronic Disease Surveillance System, which is a standardized system for state and local health departments to collect data on disease diagnosis, risk factors, laboratory confirmation results, and patient demographics.[18] Data elements related to employer and occupation were collected in a non-standard way and were patchy in their ability to capture the relationship between COVID-19 and work.

Occupational health surveillance for work-related illness and injury is also a fragmented system. [19] The Bureau of Labor Statistics (BLS) maintains the Census of Fatal Occupational Injuries. It also surveys a sample of businesses for occupational illnesses and injuries across the 50 states and weights the sample for sectors, industry size, and other characteristics (Survey of Occupational Illnesses and Injuries-SOII). Individual states track occupational illnesses and injuries using a variety of health indicators that are available through national and local data sources. The BLS SOII depends on employers listing illnesses and injuries that require lost work time on their OSHA 300 logs. COVID-19 as a work-related disorder continues to be disputed by employers, particularly in meatpacking and would, therefore, likely be missing from the Survey. There is a lag in reporting COVID-19 cases, as well, and more information is likely to come available in the next few years.

The ability to track work-related COVID-19 requires piecing together and making sense out of multiple data sources. This information is presented here. We include data from the CDC, peer-reviewed literature, public health sources, OSHA complaints, and Illinois Workers' Compensation Commission data.

COVID-19 Surveillance Data from the Peer Reviewed Literature

A collaborative study among several U.S. public health departments coalesced statistics across U.S. jurisdictions regarding meat and poultry processing facilities. Illinois was one of the states that contributed to this study. The data from Illinois was extracted from the report and is shown in the table below. [20]

Table 1. Meatpacking cases in Illinois. CDC data, as of May 2020. https://www.cdc.gov/mmwr/volumes/69/wr/mm6927e2.htm?s_cid=mm6927e2_e&deliveryName=USCDC_921-DM32454 July 10, 2020 / 69(27);887-892

State	As of	Type of meat	No. plants	No. workers employed	No. (%) confirmed COVID cases	No deaths
Illinois	April 2020	Beef, pork, poultry	5	6,680	112 (1.7)	1 (0.9)
	May 2020	Beef, pork, poultry	26	--	2670	8(0.3)

To our knowledge, there is no other peer-reviewed publication on COVID-19 in meatpacking or agricultural workers in Illinois.

COVID-19 Surveillance Data from News Outlets

Until recently, the most comprehensive data source came from a national organization, the Food and Environment Reporting Network (FERN), which maintained a database on COVID cases in the food supply chain.[21] Data were primarily collected from local news reports, with additional information gathered from state and local health authorities and, on occasion, from companies with outbreaks. According to FERN, only a small number of state and local health authorities regularly release sector- or workplace-specific data on COVID-19 outbreaks or worker illness. Few companies have shared worker illness data at any point during the pandemic. FERN incorporated CDC reports from 23 states, as well. Data from FERN is presented in Table 2.

Table 2. COVID-19 cases in the Illinois food supply chain, April 2020-Sept 2021. [FERN. https://thefern.org/2020/04/mapping-covid-19-in-meat-and-food-processing-plants/]

Sector	Company	City	# Covid cases	# Deaths	# Employees
Agriculture	Hi Grade Eggs	Loda	13		50-299
	Monterey Mushrooms	Princeton	53		482
	Pearl Valley Egg Farm	Stockton	10		260
	Riverview Farm	Lincoln	4		4
Meatpacking	Hormel	Rochelle	200	1	900
	Tyson	Joslin	202	3	>1000
	Smithfield	Monmouth	188		600
	JBS	Beardstown	125		1900
	Rantoul Foods	Rantoul	97		306
	Smithfield	St. Charles	64	3	1700
	Pork King Packing	McHenry	45		240
	Rose Packing	Chicago	39		443
	Stampede Meat	Chicago	38		278
	Aurora Packing Co	Aurora	33		250
	Tyson	Chicago	31		250
	Calihan Pork Processors	Peoria	20		119
	West Liberty Foods	Bolingbrook	3		90
	Dekalb County Packing	DeKalb	2		30

COVID-19 Surveillance Data from the Occupational Safety and Health Administration

OSHA Complaints

Complaints to the Occupational Safety and Health Administration (OSHA), the federally legislated enforcement agency for the prevention of work-related injuries, are another source of publicly available data (Table 3). In searching the OSHA website, very few complaints were made in Illinois when one compares the table above (specific workplaces) with the tiny number of complaints investigated by OSHA (i.e., listed on the OSHA website).

Table 3. Complaints made to OSHA from meatpacking companies in Illinois
[https://www.osha.gov/ords/osha7/eComplaintForm.html)

Establishment Name	Site City	Site Zip	Site County	Receipt Date	Hazard Description & Location
City Foods Inc.	CHICAGO	60609	COOK	04/21/2020	Employees in the facility are exposed to COVID-19 due to the employer not providing adequate personal protection equipment, not implementing social distancing, and not cleaning the facility effectively. Potential applicable OSHA Standard: Section 5a1 of the 1970 OSH Act
Vita Food Products	CHICAGO	60612	COOK	05/29/2020	Employees in the facility are exposed to COVID-19. The employer does not ensure that the facility is sanitized daily as recommended by the Centers for Disease Control (CDC). Potential Applicable OSHA Standard: Section 5(a)(1) per the OSH Act of 1970
Carl Budding and Company	SOUTH HOLLAND	60473	COOK	11/23/2020	The employer does not enforce CDC Guidelines regarding maintaining 6 feet of social distancing on the production line, in the lunch room, or at the time clock. Applicable OSHA standard(s): Section 5(a)(1) General Duty Clause of the Occupational Safety and Health Act of 1970. 2. The employer does not follow CDC Guidelines regarding informing employees of potential exposure to COVID-19 by an employee suspected or confirmed of having COVID-19. Applicable OSHA standard(s): Section 5(a)(1) General Duty Clause of the Occupational Safety and Health Act of 1970.
Koch Foods	FRANKLIN PARK	60131	COOK	11/27/2020	The employer is not following CDC guidelines regarding informing employees of workers who have tested positive for COVID-19 in Zone 8. Applicable OSHA standard(s): Section 5(a)(1) General Duty Clause of the Occupational Safety and Health Act of 1970. 2. The employer is not following CDC guidelines regarding hand washing. Applicable OSHA standard(s): Section 5(a)(1) General Duty Clause of the Occupational Safety and Health Act of 1970. 3. The employer is not following CDC guidelines regarding social distancing in Zone 8, there are no physical barriers between employees that work close to each other. Applicable OSHA standard(s): Section 5(a)(1) General Duty Clause of the Occupational Safety and Health Act of 1970
JBS USA, Inc.	BEARDS TOWN	62618	CASS	04/22/2020	Employees are exposed to illnesses including coronavirus and the employer is not ensuring employees in the office that are within six feet of people are wearing masks. 2. Employees have been found to have Covid-19 and the employer is not ensuring employees that have close contact with the employees are following the CDC guidelines.
Smithfield Farmland, Corp.	MON MOUTH	61462	WARREN	08/05/2020	Employees are exposed to illnesses including coronavirus and the employer has not developed an effective system to evaluate employees for COVID-19 symptoms prior to allowing employees to work their shift.

COVID-19 Surveillance from OSHA 300 Logs

Employers are required to record certain occupational injuries and illnesses on OSHA 300 logs. These include injuries that require more than first aid, more than one lost work-day, job transfer due to injury; an amputation, a hospitalization, enucleation of an eye, loss of consciousness, or death requires notification to OSHA within 24 hours. [22] The acceptance of COVID-19 as a work-related disease outside of healthcare was largely disputed; this was especially true in meatpacking and agriculture. Therefore, recording of COVID-19 cases on the OSHA log are limited. OSHA log data are posted on a federal website and downloadable. While they contain the name of the employer and the business sector, the site does not provide a medical diagnosis. A Freedom of Information request to OSHA has been filed and is pending at this time.

COVID-19 Surveillance Data from Workers' Compensation Claims

Workers' compensation is the no-fault insurance scheme established to compensate workers for lost time, medical care, permanent partial/total disability, and death benefits. Known as the "grand bargain," workers' compensation is the exclusive remedy for a work-related illness or injury; in exchange for rapid care and compensation, the worker may not sue the employer in civil court. Each state in the U.S. has a separate workers' compensation statute and there is little uniformity in coverage or the system of filing the claim. Workers' compensation datasets have been used to conduct surveillance of work-related illnesses and injuries. [23]

As of June 8, 2022, the State of Illinois experienced 3,342,542 confirmed cases of COVID-19 and 33,904 confirmed deaths throughout the state (ie, total population, not only or mainly workers). Illinois employers filed 18,576 First Reports of Injury for COVID-19 through June of 2022. In Illinois, a First Report of Injury must be filed if a worker loses 3 days of work, ot counting the date of injury. Notably, zero (0) workers' compensation claims came from animal slaughter (8 were meat cutters in **grocery stores). Only 8 of these claims came from Agriculture, with 2 of the 8 from crop workers.**

What does the absence of claims mean? There are many reasons the claims are not filed: 1) workers are not off work for 3 days; 2) not all workers are eligible; 3) workers may lack knowledge of the system; 4) worksite injuries may be covered by general health insurance or cash (common when there is no lost work time); 5) the employer may discourage filing; 6) fear of reprisal--common among precarious workers; 7) lack of documentation of work-relatedness on the part of the healthcare provider and subsequent denial of the claim; and 8) employment through a temporary staffing company whereby the staffing company is the employer of record and covers the workers' compensation policy (while a claim might get filed, it is not associated with the workplace where the injury occurred). Notably, those employed from outside the US on temporary work visas do not get coverage through the workers' compensation system, but rather, they are covered directly by their employer and would, therefore, not appear in this system. There are many informal (cash economy) workers in meatpacking and agriculture, and they would not be covered at all. Job security – not wanting to challenge the employer—and workplace culture also influence whether workers file claims; there is much evidence that workers in precarious jobs do not file claims, even if eligible.

Importantly, the Governor of Illinois issued a "rebuttable presumption" order for frontline workers during the pandemic. These means that COVID-19 illness is presumed to be work-related unless the employer can prove that the infection was a result of a non-work exposure. [24] Each state handled this differently. In Illinois, the rebuttable presumption--from March 9, 2020 through June 30, 2021--covered:

- police, fire personnel, emergency medical technicians, or paramedics
- all individuals employed and considered as first responders; all who worked for health care providers, including aides in nursing homes and rehabilitation facilities and home care workers
- corrections officers
- any individuals employed by essential businesses and operations as defined in Executive Order 2020-10 dated March 20, 2020, as long as individuals employed by essential businesses and operations are required by their employment to encounter members of the general public or to work in employment locations of more than 15 employees. For purposes of this subsection only, an employee's home or place of residence is not a place of employment, except for home care workers. (820 ILCS 310/1 (g) 1)

Notably, agriculture and meatpacking were not specified in the rebuttable presumption occupations, although workplaces of more than 15 employees is certainly common in meatpacking. At present, Illinois workers' compensation data are not informative for monitoring COVID-19 among workers in agriculture or meatpacking.

COVID-19 Surveillance by the US Public Health System

Other databases collected under state jurisdiction are used to complete the picture of occupational illness and injury, however, most (e.g., hospitalization and emergency department records) do not collect uniform information on occupation, employer, or work-relatedness.

The National Notifiable Electronic Disease Surveillance System is a national reporting system located at the Centers for Disease Control and Prevention. State and local health departments report cases to the National Electronic Data Surveillance System (called I-NEDSS in Illinois. [25,26] During the pandemic COVID-19 cases were identified through testing sites, clinics and hospitals. The intake survey asks about occupation, but does not ask the last day at work; it lists occupations that are not standardized and data validity and reliability have not been tested. Furthermore, I-NEDSS does not differentiate economic sector (industry) and occupation. There are not listings that would identify a meatpacker or an agricultural worker (see Table 4).

Table 4. Occupations queried in I-NEDSS		
Animal Care & Service Worker	Health Care Worker	Residential Facility Worker
Animal Control	Hospitality Industry Worker	Retail (Non-Food) Worker
Boat Crew	Janitorial Worker	Sensitive Occupation Volunteer
Child Care Worker	Laboratorian	Teacher
Construction Worker	Landscaping Worker	Tourism Worker
Correctional Worker	Livestock Worker	Transportation Worker (Other)
Day Care Worker	Medical Waste Disposal	U.S. Military
Dentist Or Dental Assistant	Office Worker	Veterinary Field
Factory Worker	Personal Care And Service Worker	Wildlife worker
Farmer/Rancher	Plumber	Non-sensitive occupation
First Responder	Postal Worker	Other: _____
Flight Crew	Protective Services Worker	None
Food Service Worker	Religious Worker	

COVID-19 Data from Investigation of the US House of Representatives

A Select Subcommittee of the U.S. House of Representatives conducted a study to determine the extent of COVID-19 in meatpacking in the U.S. [5] It obtained records from 5 of the largest conglomerates that represent 80% of the market for beef and >60% of the market for pork. Surveillance data are extracted from this report:

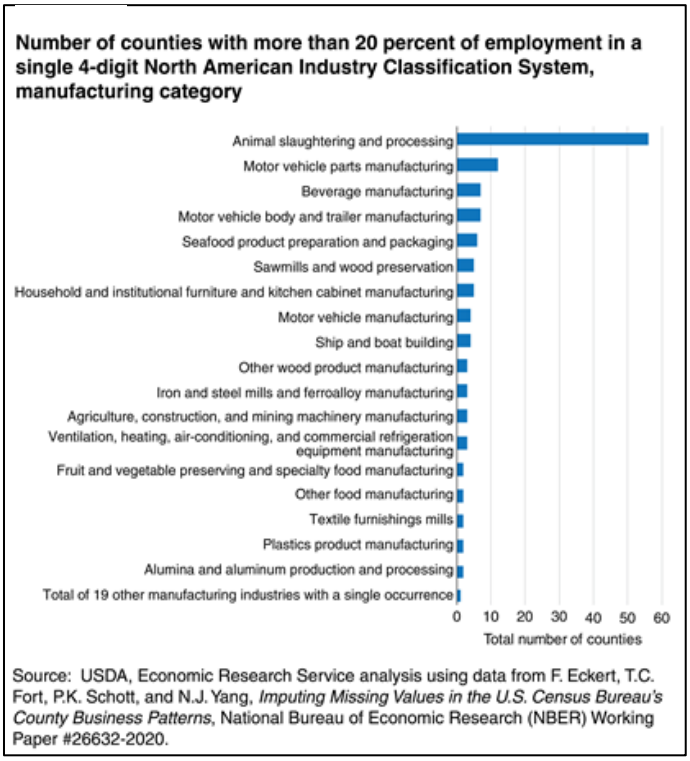
- Across these companies, at least 59,000 workers were infected in the first year
- At least 269 meatpackers died between March 1,2020 and February 1, 2021
- A few plants in the U.S. experienced around 50% of the workforce contracting a COVID-19 infection
- The 5 largest conglomerates had between 1500 and 30,000 cases and 25-151 deaths
- The numbers are likely to be undercounts

Surveillance of COVID-19 in meatpacking communities

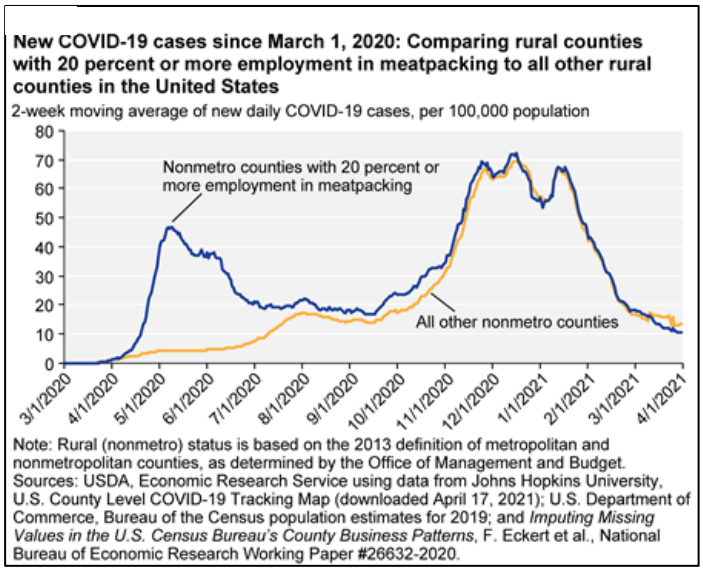
While this study focuses on COVID-19 in the meatpacking and agriculture sectors, the impact of COVID-19 on meatpackers spread beyond the factories. There are several studies which demonstrated the impact on communities surrounding these factories [27]. One such study is reproduced Figure 4.

Figure 4. Case Study: Meatpacking in Rural America During the COVID-19 Pandemic [28]
https://www.ers.usda.gov/covid-19/rural-america/meatpacking-industry

The meatpacking industry (animal slaughtering and meat processing) has had extremely high rates of COVID-19 infection among its workforce. Some 500,000 people work in the meatpacking industry in the U.S. Many plants are located in small municipalities: there are 56 of these counties in the United States—49 in rural (nonmetro) counties and 7 in urban (metro) counties—where meatpacking is estimated to account for more than 20% of all county employment. While these counties make up 2.5 percent of all rural counties and 0.6 percent of urban counties, they represent 19.0 percent and 2.9 percent, respectively, of all meatpacking employment in the U.S. Compared to the other 85 manufacturing industries (categorized at the NAICS four-digit industry level), there are only 91 other counties where a manufacturing industry accounts for at least 20% of county employment. In summary, these 56 counties are largely reliant on meatpacking for employment of local residents.



The 49 rural meatpacking-dependent counties face a comparatively high prevalence of poverty. ERS defines high-poverty counties as those with poverty rates of 20 percent or higher. Using this definition, 34.7% of these meatpacking-dependent counties were defined as high-poverty counties, compared with 26.2 percent in all other rural counties in the country.Data on confirmed COVID-19 cases show that in early April 2020, when the first plant closures occurred, there was little difference in the number of confirmed cases per 100,000 population between these meatpacking-dependent counties and all other rural counties. [17] Starting in mid-April, confirmed cases per 100,000 in rural meatpacking-dependent counties rapidly grew. The 2-week moving average number of new daily cases rose in meatpacking-dependent counties through the remainder of April 2020, achieving a peak of nearly 50 cases per 100,000 by the end of the month. This 2-week moving average was more than 10X the prevalence in other rural counties. Although cases in meatpacking-dependent counties began to decline during the month of May, they remained significantly higher compared with other rural counties, falling to just under 7X the number of average daily cases by the end of May, 2020.



Partial plant closures and increased social distancing protocols were implemented at meatpacking plants across the U.S. starting in late April 2020 through early June. These preventive measures might have influenced infection rates, as June showed the beginning of a sharp reduction in the number of new cases per 100,000 for these meatpacking-dependent counties, appearing to plateau in July. Both meatpacking-dependent and other rural counties saw modest declines in the 2-week moving average number of new daily cases per 100,000 from August through mid-September of 2020. Starting in mid-September, all rural counties began experiencing a surge in average new cases per 100,000.

All rural counties had a new high in cases in December of 2020. While this represented a first peak for most of rural America, it was the second for meatpacking-dependent rural counties, more than 1-1/2 times higher than during the initial outbreak from April-July. Although meatpacking-dependent counties were dealing with a second wave, the surge in rural new cases did not appear to be driven by new outbreaks in the meatpacking industry, given how closely these counties continued to track compared to all other rural counties. Meatpacking-dependent counties have maintained an almost identical pattern to other rural counties from August 2020-April 2021. From November 2020, meatpacking-dependent counties averaged less than half a percent higher two-week moving average number of new daily cases per 100,000 people compared with all other rural counties.

All rural counties started seeing a sharp decline in COVID cases starting January 2021. This reduction is likely associated with the availability of vaccines within these counties. Meatpacking-dependent counties observed the lowest COVID-19 two-week moving average number of new daily cases per 100,000 from mid-April of 2020 through April of 2021. For added context, April 2020 was around the time when the outbreaks were starting to become widespread at meatpacking companies across the country.

Summary of COVID-19 in meatpacking and agriculture

There were at least 59,000 cases of COVID-19 in the 5 largest meatpacking conglomerates in the US and at least 269 deaths. [5] The numbers for Illinois, specifically, are unknown/unpublished.

There was a high number of COVID-19 cases and deaths in meatpacking and there are data to suggest that these cases led to community outbreaks (Figure 4). There is a complete void in information on COVID cases in agriculture. Public health surveillance of work-related COVID-19 in the Meatpacking and Agriculture sectors is limited in the following ways:

- The US infectious disease surveillance systems do not collect accurate industry or occupation information; usually no work information is collected, and when it is, it does not conform to standardized coding such that data can be aggregated, compared, or analyzed, nor has it been validated.
- General occupational illness and injury surveillance is limited in the U.S. [19]
    - Data on agricultural workers is virtually unavailable
    - Existing data sources that could be used for public health surveillance do not gather data in a format that is usable for surveillance (were not designed for this purpose and are not flexible enough)
    - Reporting to existing data sources is limited (specific issues depend on which data source)
        - Reporting is often voluntary and not in the best interest of businesses
        - Individuals often do not know how to report
        - Information provided is missing or unclear or truncated in ways that obscure actual numbers
        - COVID-19 has not been accepted by all employers, insurance companies, and even infectious-disease-oriented Public Health as an occupational disease

PROXIMATE CAUSES OF COVID -19 OUTBREAKS

The Work

Agricultural work and meatpacking are critical components of the food supply chain and were, therefore, deemed "critical infrastructure" and "essential" work during the pandemic. [4] While most workers worked remotely or were laid off due to workplace shutdowns, those in "essential" occupations continued to travel to the workplace. An understanding of how COVID-19 played out in Agriculture and Meatpacking, it is important to understand the work, itself. Agriculture and meatpacking require manual labor and have important characteristics that enhance the risk of contracting COVID-19.

Formal categorization of agriculture and meatpacking sectors

To characterize agricultural and meatpacking jobs, industry and occupation codes were identified in two coding systems used by U.S. governmental data systems. Because other data systems compile employment and health data by Industry and Occupation, and to assure that all parties are reporting on the same worker populations, it is necessary to name the coding system and the categories included in this work. The North American Industrial Classification System (NAICS) identifies the industrial or economic sector and contains 6 digits; the first 2 digits are the broadest category, with greater specificity added by replacing 0's in positions 3-6. [29] The Standard Occupational Codes (SOC) describes the occupation or job title. [30] Notably, Germany and Netherlands do not use NAICS coding. **A comparison across countries will require a crosswalk of the US vs. the EU system.**

Figure 5. North American Industrial Classification System (NAICS) and Standard Occupational Codes (SOC) for Agriculture and Meatpacking

<u>Agriculture</u>

NAICS (industry)

- 11---- Agriculture, forestry, fishing, hunting
  - 111--- Crop production (different crop types replace the 0's)
    - 1111-- Oilseed and grain farming
    - 1112-- Vegetable and melon farming
    - 1113-- Fruit and tree nut farming
    - 1114-- Greenhouse, nursery, and floriculture production
  - 112000 Animal production
    - 1121-- Cattle ranching and farming
    - 1122-- Hog and pig farming
    - 1123-- Poultry and egg production
    - 1124-- Sheep and goat farming
    - 1125-- Animal Aquaculture
    - 1129-- Other animal production
    - 1151-- Support activities for crop production
    - 11521- Support activities for animal production

SOC (occupation)

- 45-2090 Miscellaneous agricultural workers
- 45-2092 Farmworkers and laborers, Crop, Nursery, and Greenhouse
- 45-2093 Farmworkers, farm, ranch, and aquacultural animals

<u>Meatpacking</u>

NAICS

- 3116-- Animal slaughtering and processing
- 311611 Animal slaughtering, except poultry
- 311612 Meat processed from carcasses
- 311613 Rendering and meat byproduct processing

SOC

- 51-3021 Butchers and meat cutters
- 51-3022 Meat, poultry, and fish cutters and trimmers
- 51-3023 Slaughterers and meat packers

Job Tasks and Consequent Hazards

Job descriptions provide a glimpse of the activities of different occupational groups; this allows employers, enforcers, and public health officials to consider measures to mitigate risk for COVID-19 and other airborne infectious diseases in the workplace**. Tasks of greatest concern are those that require proximity to others (co-workers, the public), indoor tasks, and high intensity work that stresses the cardiovascular and respiratory systems, causing rapid breathing and difficulty with mask use. [**31-32**]** These local conditions require careful attention to spacing, ventilation, and use of appropriate and acceptable PPE.

Farmwork: Job Tasks

As seen in the classification system above, farmworkers fall into 2 major NAICS codes: 111 for crop production and 112 for livestock and animal production. Standard Occupation codes, 45-2092 and 45-2093 include the

Figure 6. O*Net. Job Tasks, Farmworkers and Laborers, Crop, Nursery, and Greenhouse - 45-2092.00
https://www.onetcodeconnector.org/ccreport/45-2092.00

Job Description: Manually plant, cultivate, and harvest vegetables, fruits, nuts, horticultural specialties, and field crops. Use hand tools, such as shovels, trowels, hoes, tampers, pruning hooks, shears, and knives. Duties may include tilling soil and applying fertilizers; transplanting, weeding, thinning, or pruning crops; applying pesticides; or cleaning, grading, sorting, packing, and loading harvested products. May construct trellises, repair fences and farm buildings, or participate in irrigation activities.

Detailed Job Tasks

- Advise others on farming or forestry operations, regulations, or equipment.
- Build agricultural structures.
- Capture or kill animals.
- Clean equipment or facilities.
- Confer with managers to make operational decisions.
- Cut trees or logs.
- Direct activities of agricultural, forestry, or fishery employees.
- Evaluate quality of plants or crops.
- Examine characteristics or behavior of living organisms.
- Harvest agricultural products.
- Load agricultural or forestry products for shipment.
- Maintain forestry, hunting, or agricultural equipment.
- Maintain inventories of materials, equipment, or products.
- Maintain operational records.
- Mark agricultural or forestry products for identification.
- Operate farming equipment.
- Operate irrigation systems.
- Package agricultural products for shipment or further processing.
- Perform manual agricultural, aquacultural, or horticultural tasks.
- Plant crops, trees, or other plants.
- Prepare land for agricultural use.
- Sell agricultural products.
- Sort forestry or agricultural materials.
- Transport animals, crops, or equipment.

category of farmworkers of interest in this project. Publicly available data are presented in Figures 6 and 7, according to categories that encompass migrant and immigrant farmworkers.

Figure 7. Job tasks for Farmworkers, Farm, Ranch, and Aquacultural Animals - 45-2093.00
From O*net. https://www.onetcodeconnector.org/ccreport/45-2093.00

Job Description

Attend to live farm, ranch, open range or aquacultural animals that may include cattle, sheep, swine, goats, horses and other equines, poultry, rabbits, finfish, shellfish, and bees. Attend to animals produced for animal products, such as meat, fur, skins, feathers, eggs, milk, and honey. Duties may include feeding, watering, herding, grazing, milking, castrating, branding, de-beaking, weighing, catching, and loading animals. May maintain records on animals; examine animals to detect diseases and injuries; assist in birth deliveries; and administer medications, vaccinations, or insecticides as appropriate. May clean and maintain animal housing areas. Includes workers who shear wool from sheep and collect eggs in hatcheries.

Job Tasks

- Clean stalls, pens, and equipment, using disinfectant solutions, brushes, shovels, water hoses, or pumps.
- Collect, inspect, and place eggs in incubators, operate machines for egg washing, candling, and grading, and pack eggs in cartons.
- Drive trucks, tractors, and other equipment to distribute feed to animals.
- Examine animals to detect illness, injury, or disease, and to check physical characteristics, such as rate of weight gain.
- Feed and water livestock and monitor food and water supplies.
- Groom, clip, trim, or castrate animals, dock ears and tails, or shear coats to collect hair.
- Herd livestock to pastures for grazing or to scales, trucks, or other enclosures.
- Inspect, maintain, and repair equipment, machinery, buildings, pens, yards, and fences.
- Maintain growth, feeding, production, and cost records.
- Mark livestock to identify ownership and grade, using brands, tags, paint, or tattoos.
- Milk animals such as cows and goats, by hand or using milking machines.
- Mix feed, additives, and medicines in prescribed portions.
- Move equipment, poultry, or livestock from one location to another, manually or using trucks or carts.
- Order food for animals and arrange for its delivery.
- Patrol grazing lands on horseback or using all-terrain vehicles.
- Perform duties related to livestock reproduction, such as breeding animals within appropriate timeframes, performing artificial inseminations, and helping with animal births.
- Protect herds from predators, using trained dogs.
- Provide medical treatment, such as administering medications and vaccinations, or arrange for veterinarians to provide more extensive treatment.
- Segregate animals according to weight, age, color, and physical condition.
- Shift animals between grazing areas to ensure that they have sufficient access to food.
- Spray livestock with disinfectants and insecticides, or dip or bathe animals.
- Trim and shear poultry beaks, toes, and wings using debeaking machines, heated hand shears, or hot wires.

Farmworkers are exposed to a number of health, safety, environmental, biological, and respiratory hazards. Hazards are related to grain bins and silos, farm chemicals (pesticides, fertilizers, machine lubricants, gasoline, disinfectants), noise, machinery and ergonomic stressors, heat, and others. [33]

In terms of risk factors for COVID: proximity to others (co-workers, the public), indoor tasks, and high intensity work that stresses the cardiovascular and respiratory systems; much of the work is done outdoors. [30] Exceptions might include Greenhouse work, an eating area with shared meals, shared housing, and shared transportation. Employment conditions (lack of paid sick leave, low wages) and lack of testing are layered on general hazardous conditions for these workers. (see Employment Conditions section, below).

Meatpacking: Job Tasks

As seen in the classification system above, meatpackers fall into one major, 4-digit NAICS code (3116; 311611 – is animal slaughter except poultry; 311612 is meat processing from carcasses; 311613 (rendering and meat byproduct processing). The occupation codes, shown in Figure 8, include "butchers and meatcutters—51-3021; meat, poultry and fish cutters – 51-3022; and slaughterers and meat packers (51-3023). It is important to distinguish these categories in order to clearly identify the group being surveyed or described. It is also important for the purpose of crosswalking and comparing US to EU data.

Figure 8. O*Net. Job Tasks, Slaughterers and Meatpackers – 51-3023
https://www.onetcodeconnector.org/ccreport/51-3023.00

Job Description: Perform nonroutine or precision functions involving the preparation of large portions of meat. Work may include specialized slaughtering tasks, cutting standard or premium cuts of meat for marketing, making sausage, or wrapping meats. Work typically occurs in slaughtering, meat packing, or wholesale establishments.

Detailed Job Tasks

- Cut, trim, skin, sort, and wash viscera of slaughtered animals to separate edible portions from offal.
- Grind meat into hamburger, and into trimmings used to prepare sausages, luncheon meats, and other meat products.
- Remove bones and cut meat into standard cuts in preparation for marketing.
- Saw, split, or scribe carcasses into smaller portions to facilitate handling.
- Sever jugular veins to drain blood and facilitate slaughtering.
- Shackle hind legs of animals to raise them for slaughtering or skinning.
- Shave or singe and defeather carcasses and wash them in preparation for further processing or packaging.
- Skin sections of animals or whole animals.
- Slaughter animals in accordance with religious law and determine that carcasses meet specified religious standards.
- Slit open, eviscerate, and trim carcasses of slaughtered animals.
- Stun animals prior to slaughtering.
- Tend assembly lines, performing a few of the many cuts needed to process a carcass.
- Trim head meat and sever or remove parts of animals' heads or skulls.
- Trim, clean, or cure animal hides.
- Wrap dressed carcasses or meat cuts.

Meatpacking: Job Hazards and COVID Risk

According to OSHA, meatpackers face the following hazards, other than COVID-19 in their workplaces: exposure to high noise levels, dangerous equipment, slippery floors, musculoskeletal disorders, and hazardous chemicals (including ammonia that is used as a refrigerant). Musculoskeletal disorders comprise a large part of these serious injuries and continue to be common among meat packing workers. In addition, meat packing workers can be exposed to biological hazards associated with handling live animals or exposures to feces and blood which can increase their risk for many diseases. [34]

In terms of risk of contracting COVID-19, these workers work shoulder to shoulder, and have highly exertional work which makes mask-wearing difficult. In addition, workforces often share housing and transportation. Inadequate screening and testing protocols, as well as employment conditions – low wages, lack of paid sick leave, concern about maintaining employment due to poverty and immigration status put them at increased risk of contracting COVID-19. (see Employment Conditions section, below).

Occupational Injuries/Illnesses in Illinois Meatpackers and Agricultural Workers

When considering worker vulnerability at the local, worksite level, it is important to consider the general hazards in the environment of farmworkers and meatpackers. Farm work and meatpacking are relatively hazardous jobs and, therefore, have a relatively high number of injuries and the highest rate of workplace fatalities in the U.S. [35] Table 5 shows the numbers and rates of fatal and non-fatal injuries among crop workers. In U.S. crop agriculture, there are 220-260 fatalities per year, with a rate of 17.4-20.9 fatalities per 100,000 full time workers. Agriculture has the highest fatality rate of any sector in the U.S. economy. Severe non-fatal injuries range from 1.4 per 100 full time workers in crop production to 2.6 per 100 full time workers in animal production and aquaculture. Animal production and aquaculture have much lower worker populations than crop production.

Table 5. Numbers and rates of fatal and non-fatal illnesses and injuries in crop and animal production workers. whole U.S., 2015-9. [35]

Number and rate of **fatal injuries** per 100,000 full-time workers in the private crop and animal production and aquaculture industries, 2015–19

Year	Crop production		Animal production and aquaculture	
	Rate	Number	Rate	Number
2015	18.4	230	17.8	171
2016	20.9	261	15.4	151
2017	20.9	263	16.4	152
2018	20.1	250	18.6	161
2019	17.4	221	22.2	189

Number and rate of **nonfatal injuries and illness with days away from work per 100 full-time workers** in the private crop and animal production and aquaculture industries, 2015–19

Year	Crop production		Animal production and aquaculture	
	Rate	Number	Rate	Number
2015	1.9	7,470	2.5	5,170
2016	1.8	6,830	1.7	3,670
2017	1.6	6,560	2.6	5,550
2018	1.6	6,520	2.4	5,260
2019	1.4	5,530	2.1	4,670

Meatpacking is classified in the manufacturing sector. Table 6 groups meatpacking into an overall category (NAICS 3116) and then sub-categories (adds digits to distinguish sub-sectors of the meatpacking sector. Again,

it is critical to identify the work, itself, because wages, working conditions and worker populations vary across these groups. Worker vulnerability, including susceptibility to COVID is likely to vary across sub-sectors. Beef and pork slaughter (NAICS 311611) has a higher rate of OSHA recordable injuries than the other categories. Slaughter of large animals is extremely hazardous, followed by processing carcasses (311612) and processing meat (311613). Poultry processing is much lower (NAICS 311615). This is likely due to lighter weight animals. Most of these injuries are traumatic. Infectious disease (COVID-19) vulnerability is probably not similarly dispersed across the types, but it is important to scrutinize and characterize these workplaces because the ability to mitigate COVID risk is likely to be differential due to size, spacing, ventilation, temperature, mask effectiveness, and other factors. Table 6 shows incidence of OSHA-recordable cases in animal slaughter and meat processing.

Table 6. Incident rates for OSHA recordable cases of occupational injuries and illnesses in the animal slaughtering and meat processing industry, U.S., 2003-2015. [36]

Year	Animal slaughtering and processing NAICS 3116	Animal (except poultry) slaughtering NAICS 311611	Meat processed from carcasses NAICS 311612	Rendering and meat byproduct processing NAICS 311613	Poultry processing NAICS 311615
2003	10.3	12.9	11.2	11.4	8.1
2004	9.8	13.3	9.3	—	7.8
2005	9.1	12.6	7.8	10.4	7.4
2006	9.1	12.5	9.8	9.9	6.6
2007	8.4	12.1	8.2	7.8	6.1
2008	7.5	10.3	6.8	9.4	6.1
2009	6.9	9.3	6.6	7.0	5.5
2010	6.9	8.8	6.5	6.5	5.9
2011	6.4	7.8	6.0	4.9	5.8
2012	6.3	8.7	5.9	6.4	4.9
2013	5.7	7.8	5.4	—	4.5
2014	5.5	7.6	5.2	10.7	4.3
2015	5.4	7.2	5.1	7.3	4.3

Note: NAICS = North American Industry Classification System. Source: U.S. Bureau of Labor Statistics.

The Workforce

Figure 5. Immigrants in U.S. food industries, 2017

Agriculture and meatpacking employ, in large percentage, immigrants, people of color, and individuals with low educational attainment.
[37-39] Immigrant workers, who make up 20-30% of employees, are at a particular disadvantage: health insurance is often not provided, they lack the rights that are afforded US citizens; healthcare facilities are located far away; there are language and cultural barriers, and, possibly, different belief systems. [40] and there are ingrained prejudices on the part of those providing healthcare for them. [41-43] Agricultural work, livestock production, and meatpacking are located in rural areas and often provide the best, or only, available jobs. [44]
Workers in agriculture and meatpacking work at the intersection of disadvantage characterized by increased risk of injury and illness, sub-standard health protection, and limited employment and social protections.

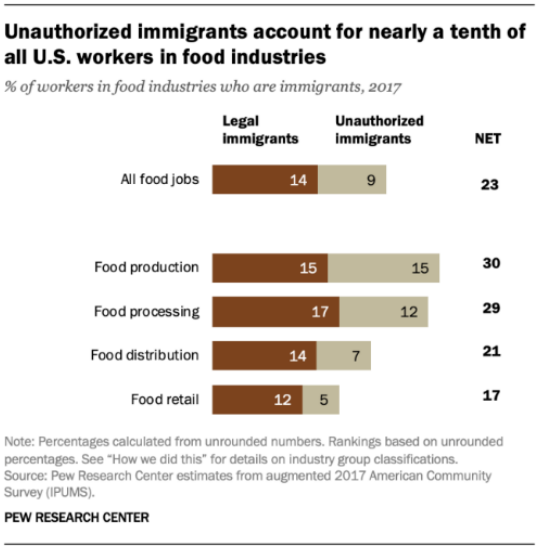


Table 7 shows the sex, race and ethnic makeup of the total workforce in agriculture and meatpacking in the US, as a whole. Non-Latinx White and Latinx populations make up a larger proportion of workers in Agriculture than their proportion in the working population, overall. Black and Latinx workers populate food Manufacturing, in general, and Animal Slaughter than their proportion in the US workforce, overall.

Table 7. Employed persons in agriculture and meatpacking by, sex, race, and Hispanic or Latino ethnicity. Whole U.S., 2021. [45]

Industry	Total employed	Percent of total employed				
		Women	White non-Hispanic	Black or African American	Asian	Hispanic or Latino
Total workforce, 16 years and over	152,581,000	47.0	77.5	12.3	6.6	18.0
Agriculture, forestry, fishing, and hunting	2,291,000	28.0	**91.9**	3.0	1.2	**25.5**
Crop production	1,197,000	27.5	**90.5**	3.3	1.7	**33.5**
Animal production and aquaculture	766,000	29.7	**93.8**	2.6	0.6	17.2
Food manufacturing (overall)	1,682,000	40.8	77.6	**13.4**	4.6	**29.3**
Animal slaughtering and processing	462,000	40.8	67.2	**22.4**	5.6	**33.1**

Employment characteristics: farm workers

Employment characteristics of farmworkers (crop and animal workers) and meatpackers--in the US and specifically in Illinois--are shown, below. Farmworkers in the US numbered from 295,520 in 2019 to 277,200 in 2021. The decrease is likely due to the pandemic. The annualized wage was $27,000 - $32,000 for different categories of farmworkers during this time. But it should be noted that the hourly wages are annualized, and most farm work occurs only during the growing season. Because of the range of climates and growing seasons in the U.S., the aggregated data for the whole country masks wide regional differences. Number and wages of farmworkers in the U.S., as a whole, and Illinois, specifically, are shown in Table 8.

Table 8. Employment and Wages of farmworkers by SOCs 45-2092, 45-2093; US, 2019-2021 [45]						
Year	**SOC**	**Employment**	**Med hrly wage**	**Median Annual Wage**	**Mean hrly wage**	**Mean annual wage**
2019	45-2092	295,520	$12.23	$25,440	$13.36	$27,780
2020	45-2092	293,910	$13.78	$28,660	$14.49	$30,140
2021	45-2092	277,200	$15.11	$29,630	$14.25	$31,440
2019	45-2093	36,630	$13.38	$27,830	$14.37	$29,880
2020	45-2093	36,820	$14.01	$23,670	$14.93	$31,440
2021	45-2093	34,140	$15.46	$29,630	$14.25	$32,150
From BLS OEWS https://www.bls.gov/oes/2021/may/oes452092.htm						

Figures 6 and 7 shown the relative employment of farmworkers across the states. Illinois is among the states with the highest employment of crop, nursery and greenhouse workers, and in the second from the highest category of employees in farm, ranch and aquaculture animals. These data are from 2021.

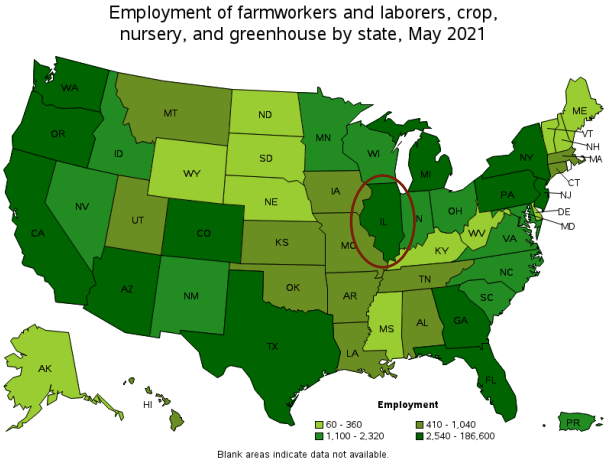


Figure 6. Employment of farmworkers in SOC 45-2092. https://www.bls.gov/oes/2021/may/oes_il.htm#45-0000

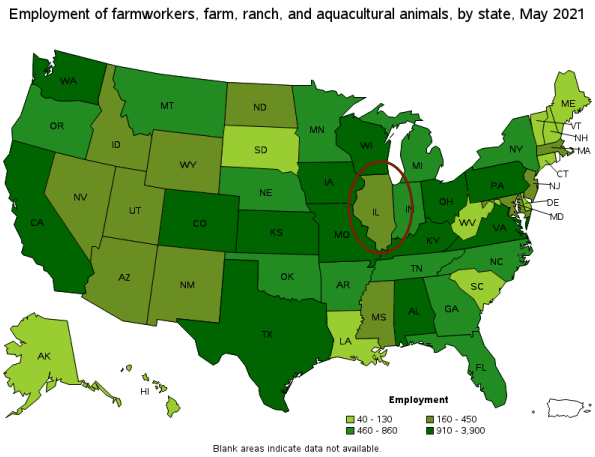


Figure 7. Employment of farmworkers in SOC 45-2093. https://www.bls.gov/oes/2021/may/oes_il.htm#45-0000

Illinois is a large agricultural state with a relatively short growing season. The median hourly wage (shown in Table 9) in Illinois is similar to the US as a whole, and the annualized average salary is a little higher. It should be noted, however, that the growing season is no longer than 4 months and most of these workers are not employed in the State for 8-9 months of the year.

Table 9. Farmworkers in Illinois 2021, BLS OEWS, [45]		No. employed	Median hourly wage	Average salary (annualized)
45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	3,070	$17.04	$35,440

45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	350	$16.25	$33,790

Employment characteristics: meatpackers

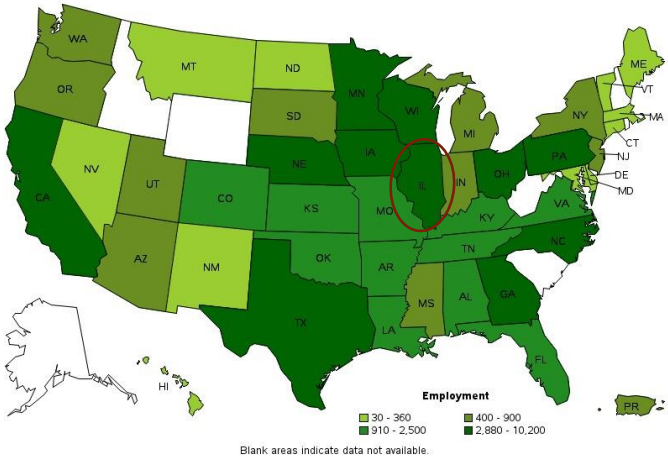
Numbers and wages of meatpackers in the U.S. and in Illinois are shown in Table 10. Meatpackers in the U.S. earn slightly higher wages than agricultural workers. This work is year-round, but many of these workers are in Illinois on work visas for a defined period (see Immigration section of this document, below).

Table 10. Number of meatpackers and slaughters, % of workforce, and wages of meatpackers and slaughterers in the US, 2019-2021. BLS, OEWS. [45]

	SOC	#empl	% of total workforce	Med hrly wage	Mean hrly wage	Annual mean salary
May 2019	51-3023	67,670	12.83%	$14.31	NA	$29,760
May 2020	51-3023	72,020	13.54%	$ 15.05	NA	$ 31,310
May 2021	51-3023	78,500	15.08%	$14.38	$15.46	$32,160

Figure 8 shows Illinois to be among the states with the highest employment of animal slaughterers and meatpackers.

Figure 8. Employment of slaughterers and meat packers, by state, May 2021.



The annualized wages for meatpackers in Illinois are shown in Table 11. The poverty thresholds in the U.S. for years 2019-2021 for an individual were $13,300, $13,171, and $14,097, respectively. [46] Farmworkers tend to be employed on a seasonal basis and are unemployed or employed in other sectors 8-9 months when they are not doing farm work. Meatpacking tends to last longer and can be someone's full time job, though immigrant labor (work visa) is used for short term work, as well. Also, most of these workers are supporting themselves in the U.S. and sending money back home to their families. The fact that this work and these wages attract them suggests migration for work to escape extreme poverty. This phenomenon is well described in other publications, but beyond the scope of this review. [47]

Table 11. Meatpacker occupations in Illinois, 2021		No. employed	Median hrly wage	Average salary (annualized)
51-3023	Slaughterers and Meat Packers	3,620	$17.86	$35,550
51-3022	Meat, Poultry, and Fish Cutters and Trimmers	2,840	$17.86	$35,530
51-3021	Butchers and Meat Cutters	8,950	$15.77	$34,020

POLICIES RELATED TO EMPLOYMENT, MIGRATION AND HEALTH

Employment

General Labor Laws Pertaining to Agriculture and Meatpacking

The U.S. Department of Labor administers and enforces federal laws related to many workplace activities for some 150 million workers and 10 million workplaces. [49] The major laws applicable to the general workforce and non-US-nationals who come to work in the U.S. include the following:

Fair Labor Standards Act prescribes standards for wages and overtime pay, which affect most private and public employment. It requires employers to pay covered employees who are not otherwise exempt at least the federal minimum wage and overtime pay of one-and-one-half-times the regular rate of pay. [49] For nonagricultural operations, it restricts the hours that children under age 16 can work and forbids the employment of children under age 18 in certain jobs deemed too dangerous. For agricultural operations, it prohibits the employment of children under age 16 during school hours and in certain jobs deemed too dangerous.

Wages and social benefits are mandated for some workers, variably exempted for agricultural workers and limited for immigrants working on temporary work visas, and informal sector workers.

Illinois. Sole proprietors, business partners, corporate officers, and members of limited liability companies may exempt themselves. Overall, it is estimated that 91% of Illinois employees are covered under the Act. Workers are covered for medical care, lost work time due to injury. If needed, a permanent partial disability settlement, occupational rehabilitation, and death benefits are provided. [49]

Labor Law Changes Related to COVID-19

U.S. Meatpacking and agriculture considered "essential infrastructure"

"Frontline," "essential" and "critical infrastructure" were terms applied to workers who were required to leave home for work during the pandemic. In the U.S., the Cybersecurity and Infrastructure Security Agency (CISA), in collaboration with other federal agencies, state, local, tribal, and territorial governments and the private sector, updated the Essential Critical Infrastructure Workforce Guidance. [50] This document defines those

whose work needed to continue during the pandemic, and calls out the Food and Agriculture Sector, specifically. [51] Application of the CISA guidance required a more granular definition of workforces in such a way as to assess risk and to select mitigation strategies. Panels of experts developed risk categories as applied to job tasks and the workplace environment.

Illinois. Governor's executive orders

Regarding essential workers, Governor Pritzker issued the following on March 20, 2020:

Executive Order Number 2020-10 STAY AT HOME [52]—
All individuals must stay at home, with exceptions for essential activities, essential government functions, and essential businesses and operations. All non-essential business and operations must cease, aside from Minimum Basic Operations. Business can continue with employees working from home. Local government units across the state must halt all evictions, and gatherings of more than 10 people are prohibited. Item 9 of this order defines essential infrastructure workers, as follows:

> **Essential Infrastructure.** For purposes of this Executive Order, individuals may leave their residence to provide any services or perform any work necessary to offer, provision, operate, maintain and repair Essential Infrastructure. Essential Infrastructure includes, but is not limited to: food production, distribution, and sale; construction (including, but not limited to, construction required in response to this public health emergency, hospital construction, construction of long-term care facilities, public works construction, and housing construction); building management and maintenance; airport operations; operation and maintenance of utilities, including water, sewer, and gas; electrical (including power generation, distribution, and production of raw materials); distribution centers; oil and biofuel refining; roads, highways, railroads, and public transportation; ports; cybersecurity operations; flood control; solid waste and recycling collection and removal; and internet, video, and telecommunications systems (including the provision of essential global, national, and local infrastructure for computing services, business infrastructure, communications, and web-based services). Essential Infrastructure shall be construed broadly to avoid any impacts to essential infrastructure, broadly defined.

Presumption of work-relatedness of COVID-19

Governor Pritzker signed an executive order in March of 2020 stating that "COVID-19 exposure and contraction shall be rebuttably presumed to have been exposed at work, and that such exposure is causally connected to said exposure. This law was extended through June 30, 2021. At the time of this writing, only 2 cases have been litigated, and both were deemed work-related. [53]

Immigration

Immigration and Nationality Act extends protections to different types of migrant labor. Some statutory requirements may overlap. Applicable to this document are the following statuses:

- **H-1B** — The temporary employment of nonimmigrant aliens in the United States in specialty occupations or as fashion models. [54] The intent of the H-1B provisions is to help employers who cannot otherwise obtain needed business skills and abilities from the U.S. Employers must attest to the Department of Labor that they will pay wages to the H-1B nonimmigrant workers that are at least equal to the actual wage paid by the employer to other workers with similar experience and qualifications for the job in question, or the prevailing wage for the occupation in the area of intended employment – whichever is greater. (fact sheet: https://www.dol.gov/agencies/whd/fact-sheets/62/h1b)

Figure 9. H1B Changes during the COVID-19 Pandemic

Stay-at-home orders across most states require employees of non-essential businesses to work from home. An H-1B visa holder who normally works at the office of an employer can work from a home within commuting distance of the office if they post a Labor Condition Application notice at their home work space. An H-1B visa holder who does not live within commuting distance asks their employer to file an amended H-1B petition that lists their home as their place of work if they will be working remotely for more than 60 days. . If a foreign national with an H-1B visa starts working fewer hours than the hours stated on their H-1B petition, their employer may need to inform USCIS of this reduction. The employer also may need to update USCIS on any change to the employee's pay. If an employer of an H-1B worker initiates a furlough, the employer must continue to pay the H-1B employee's wages as provided by the H-1B petition. On the other hand, if an H-1B employee refuses to work due to concerns surrounding the coronavirus, the employer does not need to pay. If an employer terminates an H-1B employee, the employer must inform USCIS and offer to pay for the employee's transportation to their previous country of residence. The employer must continue paying the H-1B employee as provided by the H-1B petition until it officially asks USCIS to revoke the petition. If a terminated H-1B employee wants to remain in the U.S., they have a grace period of 60 days in which to submit an H-1B petition from a new employer or transition to a different status. If the H-1B employee finds a new employer, they should expect to start working for that employer while the petition is pending. Since USCIS has suspended premium processing due to the COVID-19 outbreak, an H-1B employee and their new employer will not know for several months whether USCIS approves the new petition. If USCIS does not approve the new petition, the H-1B employee would need to stop working and probably would need to leave the U.S.

- **H-2A** — Temporary employment of foreign workers to perform agricultural labor or services of a temporary or seasonal nature. [55] The employer must file an application stating that there are not sufficient workers who are able, willing, qualified, and available, and that the employment of aliens will not adversely affect the wages and working conditions of workers similarly employed in the U.S. Any employer using H-2A workers must have initially attempted to find U.S. workers to fill these jobs. H-2A workers and domestic workers in corresponding employment must be paid special rates of pay that vary by locality, must be provided housing and transportation from that housing to the job site if their employment requires them to be away from their residence overnight, and must be guaranteed an offer of employment for a total number of hours equal to at least 75% of the work period specified in the contract.

Figure 10. H2A Changes during the COVID-19 Pandemic. https://www.uscis.gov/about-us/uscis-response-to-covid-19

On Dec. 18, 2020, the Department of Homeland Security and USCIS published a new temporary final rule extending the Aug. 20 temporary final rule amending certain H-2A requirements to help U.S. agricultural employers avoid disruptions in lawful agricultural-related employment, protect the nation's food supply chain and lessen impacts from the COVID-19 public health emergency. Under the Dec. 18 temporary final rule, all H-2A petitioners with a valid temporary labor certification (TLC) can employ certain foreign workers who are currently in the United States and in valid H-2A status immediately after USCIS receives the H-2A petition, but no earlier than the start date of employment listed on the petition. In addition, the Dec. 18 temporary final rule extends the ability of eligible H-2A workers to change employers and begin work before USCIS approves the new H-2A petition. DHS will apply this temporary final rule to H-2A petitions requesting an extension of stay, if they were received on or after Dec, 18, 2020 through June 16, 2021. It is important to note to the public that this temporary final rule does not amend the Department of Labor's (DOL's) regulations covering the labor market test and recruitment of U.S. workers for the H-2A process. Before filing an H-2A petition with DHS, the H-2A petitioner must have obtained a valid TLC from DOL for the job opportunity the employer seeks to fill with an H-2A worker(s). This temporary final rule is not a joint rule with DOL, and USCIS is not proposing changes to DOL's H-2A TLC process or its regulations.

- **H-2B** — The temporary employment of foreign workers for seasonal skills in areas other than agriculture. [56] Employment must be of a temporary nature for a limited period of time such as a one-time occurrence, seasonal need, peak load need or intermittent need. Employer must offer a wage that equals or exceeds the highest of the prevailing wage, applicable Federal minimum wage, the State minimum wage, or local minimum wage to the H-2B nonimmigrant worker for the occupation in the area of intended employment during the entire period of the approved certification. The H-2B program also establishes certain recruitment and displacement standards in order to protect similarly employed U.S. workers. (H2B workers fact sheet: https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/H2B-eng.pdf)

Figure 11. COVID-19 Changes to H-2B protocol. Issued May 14, 2020
https://www.federalregister.gov/documents/2020/05/14/2020-10486/temporary-changes-to-requirements-affecting-h-2b-nonimmigrants-due-to-the-covid-19-national

The Department of Homeland Security announced a temporary final rule to change certain H-2B requirements in light of the COVID-19 public health emergency... to help beleaguered meatpacking plants keep those foreign employees in the United States as the companies deal with absenteeism and workers quarantined because of COVID-19 exposure. The temporary rule (set to last through May 15, 2023) allows meat and poultry companies to rehire current H-2B employees whose work contracts or three-year visas are expiring. The companies also would be able to hire other H-2B workers with expiring visas who otherwise would have to return to their home countries. Workers with expired H-2B visas are generally required to spend three consecutive months out of the U.S. before applying for a new visa.

Worker health

As described in the surveillance section, above, the **Occupational Safety and Health (OSH) Act** regulates safety and health conditions in most private industries either by the OSHA Division of USDOL, or OSHA-approved state programs. [57] Employers covered by the OSH Act must comply with OSHA's regulations and safety and health standards. Employers also have a general duty under the OSH Act to provide their employees with work and a workplace free from recognized, serious hazards. OSHA enforces the law through workplace inspections and investigations. Compliance assistance and other cooperative programs are also available. OSHA requires recording of workplace illnesses and injuries that require more than first aid or lost work time; deaths, enucleations, and hospitalization due to a work injury/illness must be reported by the employer to OSHA within 24 hours. Every workplace is covered by the OSHAct, including agriculture and meatpacking, though the food supply chain has health and safety oversight by the US Department of Agriculture and the US Environmental Protection Agency, as well. This shared oversight can lead to lax oversight; examples are beyond the scope of this analysis. The requirement pertaining to COVID-19 is shown in Figure 12.

Figure 12. OSHA Reporting of COVID-19 Cases

OSHA recordkeeping requirements mandate covered employers record certain work-related injuries and illnesses on their OSHA 300 log (29 CFR Part 1904). COVID-19 can be a recordable illness if a worker is infected as a result of performing their work-related duties. However, employers are only responsible for recording cases of COVID-19 if all of the following are true:

1. The case is a confirmed case of COVID-19 (see CDC information on persons under investigation and presumptive positive and laboratory-confirmed cases of COVID-19);
2. The case is work-related (as defined by 29 CFR 1904.5); and
3. The case involves one or more of the general recording criteria set forth in 29 CFR 1904.7 (e.g., medical treatment beyond first aid, days away from work).

OSHA 300 logs, described in the occupational surveillance section, above, would be one way to determine work-related COVID cases. The unwillingness of employers to accept COVID-19 as an occupational disease would prevent their listing of COVID-19 on the OSHA 300 log and, thus, limit the OSHA 300 log as a surveillance tool or a guidance for investigation of either individual workplaces or of economic sectors.

OSHA did promulgate an Emergency Temporary Standard in 2020, but this was blocked by the presidential administration and did not go into effect until 2022. The OSHA ETS can be seen in Figure 13.

Figure 13. OSHA Emergency Temporary Standards

Mandatory work practices and vaccination were promoted by OSHA early in the pandemic. It is typical for OSHA to issue an Emergency Temporary Standard for unexpected events, such as the pandemic. OSHA was blocked by the Federal Government from issuing such a standard. It did finally issue an ETS for Healthcare Workers in December of 2021, but it was overturned by the U.S. Supreme Court. OSHA used its "General Duty Clause" to regulate workplaces in regards to COVID-19 prevention.

A subsequent Congressional investigation demonstrated influence peddling on the part of the largest meatpacking conglomerates to block OSHA oversight of health and safety measures.

An economic analysis showed that the four largest conglomerates that control 60-85% of the U.S. market increased profits by 30%% from 2019-2021 Whitehouse Briefing, December 2021. [58] https://www.whitehouse.gov/briefing-room/blog/2021/12/10/recent-data-show-dominant-meat-processing-companies-are-taking-advantage-of-market-power-to-raise-prices-and-grow-profit-margins/

Worker Health and Workers' Compensation

Described in the Surveillance section, above, workers' compensation laws in the U.S. were established at the turn of the 20th century and are legislated separately by each of the 50 states. [59] Workers' compensation insurance covers medical care, wage replacement for lost work time, a permanent partial/total disability settlement, job re-training, and death benefits for workers injured on the job. Designed as a "no fault" insurance scheme, workers' compensation serves as the exclusive remedy for a work-related injury/illness; workers may not sue their employers for a work-related illness or injury. Injured/ill workers receive compensation on a schedule that is established by each state; Illinois is one of the higher-compensating states. [60] There is variable coverage for directly employed workers, workers who are hired through temporary staffing companies, those employed on immigration visas, those in the cash economy, and agricultural workers, overall:

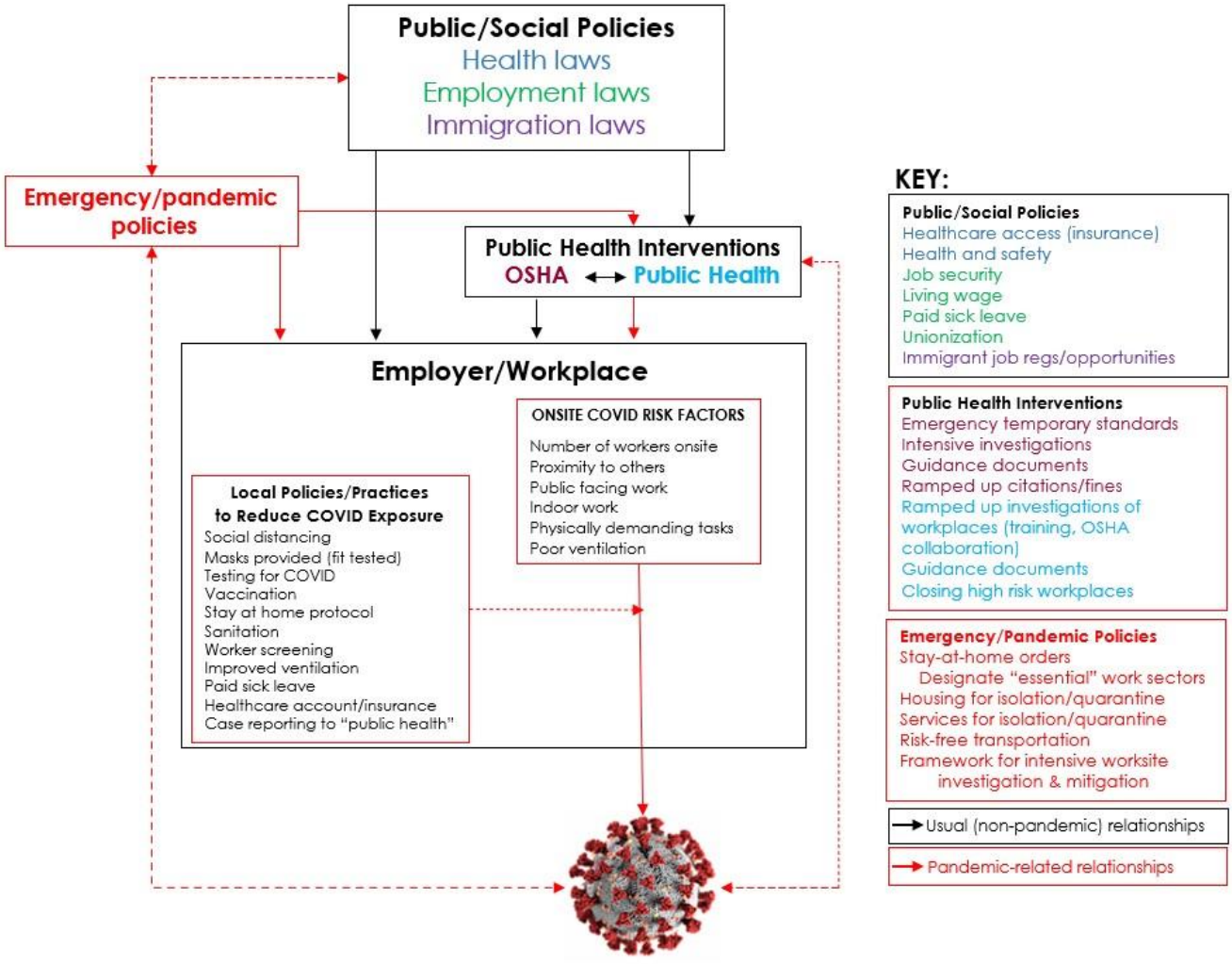
Only 13 states require workers compensation coverage for agricultural workers; 15 states do not require work comp for migrant and seasonal farmworkers. In Illinois, coverage is limited to farm operations that have employment of 400 worker-days in a month.

Across the U.S., H2A workers, hired from outside the U.S. for the growing season (around 3% of the hired farmworker population) must be covered by workers compensation insurance (or equivalent) during the time they are employed. U.S. farmworkers that are hired through temporary staffing companies receive their workers compensation coverage from the staffing company (not the site/farm/factory) where they are working.

SUMMARY

Workers in the **agriculture** and **meatpacking** sectors experienced extremely high morbidity and mortality rates due to COVID-19. There is clear evidence that the meatpacking industry was the source of community outbreaks in Illinois and across the country. Figure 14 was created to frame the issues presented in this analysis.

Figure 14. Framework to describe factors that influenced spread of COVID-19 in workers



In meatpacking, the proximate cause of these massive outbreaks was a combination of indoor, high-density work (workers standing in close proximity to co-workers), rapidly moving assembly lines and highly exertional tasks (causing rapid breathing, rapid heartrates and inability to wear a mask during work). The cold and high humidity environments might be an additional, important risk factor for sustaining active viral particles [62], though this question does not seem to be settled in the published literature.

In these workplaces, and in the COVID response, overall, there was a lack of attention to the well-known hygiene hierarchy of controls that prefers engineering controls (e.g., improving ventilation, slowing down lines) and administrative controls (e.g., thinning the census of workers on a given shift, worker screening, promoting sanitation procedures) above use of personal protective equipment (PPE).[63]

Employment conditions were also at fault: low wages, no paid sick leave, and disciplining workers for missing shifts made workers come to work, even when sick. Limited healthcare access--due to lack of insurance, unfamiliarity with the local healthcare system, and distance to a healthcare provider—contributed to spreading the virus among workers and into communities. During the early days of the pandemic in Illinois, individuals were being told to stay away from healthcare facilities unless they exhibited symptoms of respiratory, cardiac, or neurologic distress. Testing was virtually unavailable. Many members of this workforce live in shared housing and share transportation to work, thwarting basic public health advice to isolate and quarantine.

Further upstream, policies and practices upset effective public health efforts and allowed the spread of COVID-19. The lack of integration of General Public Health and Occupational Health for surveillance prevented the problems from coming to light early. As described above, Infectious Disease surveillance systems were limited in their ability to detect cases and were not integrated with Occupational Health surveillance. There also was an inadequate response to workplace outbreaks as county health departments without occupational health expertise tried to manage workplaces and communities.

On a national level, OSHA, the agency tasked with protecting US workers, was hampered by the federal government and the Supreme Court by being stripped of power to issue an Emergency Temporary Standard that would have "teeth" to control the spread of disease more effectively. There is clear evidence of influence peddling on the part of the small number of corporations that control meatpacking in the U.S., allowing companies to speed up lines and force workers to come to work under all conditions. On a local level, occupational health enforcement was also hampered. Local health departments were tasked with addressing outbreaks in their jurisdictions. They have limited expertise in workplace investigations and are often reserved in confronting business owners, who are their "neighbors." Local health departments operate independently of OSHA; during the pandemic, collaboration would have resulted in a more effective response.

The slow rollout of testing and the inadequacy of clinical care were certainly problematic across Illinois and the U.S., as a whole. Supplies – masks, plastic sheeting, sanitizing fluids—were also hard to access. Presentation of these issues is beyond the scope of this review.

The problem of monitoring COVID-19 in the meatpacking sector is overshadowed by, almost, a complete absence of information about agriculture. Agricultural job titles and tasks are highly varied, with some activities riskier than others. The high impact of COVID-19 on rural populations has been the focus of news reports and policy initiatives. Farmworkers are among the most socially, culturally, and linguistically isolated of all rural populations. They are transient, by definition, and have extremely limited access to health care and social services. They are at the lowest economic rung and face tremendous discrimination in employment. The population-level and individual consequences of COVID-19 in farmworkers remains hidden in Illinois.

The lack of "presumption" of work-relatedness in the Illinois workers' compensation system for infected meatpackers and farmworkers will make it difficult for meatpackers to access the workers' compensation insurance to pay their medical bills, indemnity costs, and death benefits. Given the clear connection between work and COVID-19 in the meatpacking sector, this is a particularly egregious omission of Illinois policy. Agricultural workers have patchy workers' compensation coverage and seasonal workers are largely excluded

from the state system and they have extremely limited options for compensation. Those with long-haul COVID, currently estimated at 4% of infected individuals, will face further economic hardship, in addition to the health consequences.

It is important to note that the practices and policies, described above, frame societal conditions that deepen poverty and worsen the conditions of African American, Latinx, non-native, and rural workers, who are over-represented in meatpacking and agriculture. COVID-19 in agriculture and meatpacking workers has uncovered social and health inequities already prevalent in Illinois and the U.S.

This document details employment, health, and immigration as regards meatpackers and agricultural workers during the COVID-19 pandemic in Illinois and the U.S. Its aim is to provide a basis for comparison of policies, practices, and circumstances between Illinois, Western Germany, and the Netherlands. Next steps will entail sharing and correlating data from this report with our international collaborators. We will plan further, harmonized activities—likely gathering information and engaging in policy initiatives to address the problems uncovered in this project. We will seek additional funding from sources that fund Global Health initiatives.

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APPENDIX: Precarious Employment in the meatpacking industry

Global Precarity: Precarious Employment in the Meatpacking Industry

Workers in the meatpacking industry are responsible for the slaughter, processing and preparing of meats to be sold.

Precarious employment, work that is often described as **insecure, underpaid and unprotected**, has been shown to have adverse effects on one's health, both **physically and mentally**. The stresses of these work environments have been associated with **increased risk of illness, cardiac events, mortality related to external causes such as alcohol use and other physical issues.** In terms of mental health, precarious work has been linked to **anxiety, burnout, depressive disorders, suicide and overall job dissatisfaction.**[4]

Globally, employees in the meatpacking sector are more likely to **face harsh, unsafe and unsanitary work conditions.** Because minority workers are more likely to experience workplace precarity, addressing inadequate labor conditions is imperative to **reducing health disparities amongst already high-risk populations and occupations.**[5]

The **North American Agreement on Labor Cooperation (NAALC)** is a labor agreement **including freedoms to organize, bargain and strike, minimum wage and benefit standards, protections against employment discrimination, prevention of and compensation for** workplace injuries and guidance for the protection of migrants workers.[6] With much of the literature citing poor enforcement of the NAALC and similar international labor policies, global recommendations to improve occupational health in the meatpacking industry include **1) improve occupational data collection standards 2) increased penalties for labor violations and 3) international harmonization of workplace standards.**[7]