

# Using workers' compensation claims to investigate occupational injuries among residential day laborers and domestic workers

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## Abstract

**Background:** While many states have legal provisions to extend workers' compensation eligibility to day laborers or domestic workers hired directly by homeowners or families, little is known about the nature or frequency of injury claims submitted on behalf of these "residential employees."

**Methods:** We examined California workers' compensation claims records for injuries that appear to have occurred in residential settings between 2008 and 2018 and where the employer of record was an individual or family. We examined the demographic, occupational, and injury characteristics of our sample and analyzed factors that contribute to the likelihood of a claim resulting in some sort of payment.

**Results:** We identified 5,463 workers' compensation claims that were likely submitted on behalf of residential employees. Claims most commonly reflected injuries to workers performing housekeeping tasks, followed by construction/maintenance and caregiving. Workers performing construction/maintenance or gardening/landscaping tasks were more likely to be injured on the same day of hire and were more likely to require hospitalization or emergency treatment for their injuries; however, these workers also had a smaller proportion of claims that resulted in payment. We found that employment tenure had the biggest impact on the likelihood of payment, with the odds increasing sharply after the first day of work.

**Conclusions:** Although the claims in our data set likely represent only a small fraction of all injuries to residential day laborers and domestic workers during this period, we suggest that workers' compensation claims can provide valuable clues for better understanding occupational injuries among workers in this largely informal sector.

## KEYWORDS

day labor, domestic work, informal work, occupational injuries, residential employment, workers' compensation

## 1 | BACKGROUND

The hiring of day laborers and domestic workers to provide services in and around private homes has become commonplace in many communities, with workers providing valuable services to ensure the safety and security of families and property. Studies have estimated that over 40,000 day laborers seek work on street corners or at hiring centers in California each day, taking on temporary jobs in construction, landscaping, moving, and hauling, many of them in residential settings.<sup>1,2</sup> Meanwhile, approximately 358,000 workers carry out housekeeping, caregiving, and childcare tasks in over 2 million California households, representing nearly 16% of all households in the state.<sup>3,4</sup> A large proportion of this workforce are immigrants, and many are undocumented.<sup>5</sup> Such work is often highly informal in nature—workers may be hired with no written contract, in some cases for short-term assignments, and payments are frequently made in cash. Indeed, many homeowners may not recognize themselves as employers in these situations and consequently may deny responsibilities expected of employers under more formal hiring arrangements.

Studies involving residential day laborers and domestic workers have documented occupational hazards and work-related injuries that often mirror, in both frequency and severity, those of workers performing similar tasks in more “conventional” nonresidential settings.<sup>3,6,7</sup> Studies have also demonstrated the substantial financial and emotional toll that such injuries can take on workers and their families.<sup>7,8</sup> Access to legal protections and/or compensation under prevailing labor law is assumed to be limited given the informal nature of the work. In fact, although state and federal Occupational Safety and Health Administration (OSHA) programs do not extend protections to residential day laborers and domestic workers, many states do maintain provisions for these workers to access workers' compensation resources when injuries occur.<sup>9,10</sup> Currently 26 states extend workers compensation coverage to workers classified as “residential employees,” although eligibility varies widely based on specific worktime or earnings thresholds or other criteria.<sup>a</sup>

California labor code, for example, defines “residential employees” as those who are “employed by the owner or occupant of a residential dwelling whose duties are incidental to the ownership, maintenance, or use of the dwelling” (California Labor Code §3351(d)). The definition encompasses any person “in the service of an employer under any appointment or contract of hire or apprenticeship, express or implied, oral or written, whether lawfully or unlawfully employed” (California Labor Code §3351). The labor code further indicates that residential employees are eligible for workers' compensation *unless* “the employment was, or was contracted to be, for less than 52 hours” during the 90 days preceding the work-related injury or illness, or if the “the employment was, or was contracted to be, for wages of not more than one hundred dollars” (California Labor Code §3352(h)). In effect, this means that injured residential workers are entitled to compensation if they were both employed for 52 hours or more *and* earned \$100 or more in wages. They may also be eligible if they do not meet these thresholds but if

they can demonstrate that the work they were hired to perform would have exceeded these limits were it not for the injury event. Homeowners' and renters' insurance policies in California typically include workers' compensation liability coverage for use in these cases; residential employers may also obtain a policy from private or public insurers, with premiums based on an employee's annual salary.

Many workers and residential employers may be unaware of such provisions in their states' labor codes, with a large proportion of injuries and illnesses likely never rising to the level of an official First Report of Injury. Indeed, one recent study estimated that less than 10% of low-wage workers in Los Angeles filed workers' compensation claims for their injuries, and the barriers to filing a claim among informal day laborers and domestic workers are surely even greater.<sup>8</sup> Yet, any claims that are successfully submitted on behalf of residential employees can offer a unique and heretofore unexamined window into the injury experiences of an informal and often invisible workforce.

This exploratory study is the first to use workers' compensation claims data to examine work-related injuries among residential day laborers and domestic workers. To date, most studies of this worker population have relied on interview and survey data, often with small samples of respondents in limited geographic areas.<sup>7-9,11-17</sup> Our goals are to characterize the demographic and occupational characteristics and work-related injuries of residential employees in California for whom claims were filed during 2008–2018, and to analyze factors that contribute to the likelihood of a claim resulting in some sort of payment. We also assess the value of workers' compensation claims data as a tool for investigating and tracking occupational injuries among the informal residential domestic worker and day laborer workforce, even despite widespread injury underreporting within this sector.

## 2 | METHODS

The first step of our analysis was to identify claims made for injuries to residential employees within the state's publicly available workers' compensation data. Because claims records do not reliably indicate residential employee status, we devised our own method for identifying relevant cases. The exploratory nature of our investigation meant that our methods for identifying residential employees involved several iterative steps.

Using claims records from the state's Workers' Compensation Information System (WCIS) submitted from January 2008 through December 2018, we identified indicators that suggested a residential work arrangement. Indicators included a claimant's industry coded as “Private Household,” “Residential Cleaning Services,” or “Residential Remodelers,” and keywords such as “housekeep,” “day labor,” or “live-in” in open-text fields. This initial search resulted in a sample of 186,572 claims. For each resulting claim record, we obtained information about the claimant's sex and date of birth; initial date of hire; date of injury; cause and nature of injury; initial treatment received; and resulting payments.<sup>b</sup> With approval from the UCLA Institutional Review Board, we also obtained the employer and insurer name for each claim.

Next, we devised a set of inclusion and exclusion criteria to narrow our sample to claims most likely belonging to residential employees. We were most interested in claims that met two conditions: the claim was submitted on behalf of a worker who was *injured at a residential worksite*, and the *employer of record was an individual or family*. The initial search produced a large proportion of claims that could easily be excluded from our sample, including hotel housekeepers, residential delivery services, and employees of residential care facilities. We then developed a new list of keywords and phrases to exclude claims where the employer of record was clearly a business entity (e.g., “Corp.,” “Inc.,” common names of commercial residential delivery or cleaning services, etc.). Additional keywords such as “homeowner” and “renter” in the insurer field were used to identify and include claims that were submitted via a homeowners’ or renters’ insurance policy. Finally, we excluded claims that were submitted for injuries to nonemployees (e.g., family members or neighbors), that did not occur in residential settings (e.g., on ranches or farms), or that occurred outside of California. These criteria enabled us to narrow our final sample to 5,463 claims.

In a subsequent review of our sample, we applied a score to each record indicating our level of confidence that the claim represented a residential employee. Records for which we had the highest level of certainty of residential employee status—14.3% of our sample—generally included information in one of several fields confirming that the injury occurred in a residential setting, the employment relationship was between a homeowner and an individual worker, and/or that the claim was submitted through a homeowner’s or renter’s insurance policy. Such claims often included clues in the open-text Occupation Description field that the claimant worked as a residential domestic worker or day laborer: “nanny employee of homeowner,” “residential laborer,” “cleans houses,” or “live-in house attendant.” Similar clues were found in the open-text field for Injury Descriptions:

*Insured's housekeeper was cleaning bookshelves when the bookshelves fell on her wrist.*

*[Injured worker was] hired as a handyman at homeowner's residence and injured his lumbar.*

*Companion to homeowners' insurance claim; agent reported insured's cat bit her caretaker.*

*Dislocation [of shoulder]. Fell. I hired a day laborer to clear brush. I own an 8-acre lot. [Employee] worked 52 hours (6 1/2 days @ 8 hours per day) and [was] paid \$90 per day.*

An additional 85.4% of claims in our sample provided a moderate level of certainty regarding residential employee status. In these cases, several data fields alluded to residential work setting and/or a homeowner as the employer of record, but we were unable, using the open-text fields, to confirm with full certainty. Finally, 0.4% of our sample provided a low level of certainty; these claims offered some

clues as to residential employee status while not including enough information for us to confidently rule them out using our exclusion criteria.

We recorded several data fields from the claims records for ease of data reporting and analysis. The zip code where the injury took place was used to assign claims to one of several Metropolitan Statistical Areas (MSA) using data tools from the US Department of Labor.<sup>18</sup> We also created a measure of employment tenure by subtracting the date of hire from the date of injury to determine the length of time a claimant had been working for the employer before the reported injury occurred.

Finally, we developed and applied a set of criteria to categorize claims records based on the type of work tasks a claimant was performing when the injury occurred. The criteria involved an examination of Industry and Class codes as well as a search for keywords that appeared in open-text Occupation Description and Injury Description fields. We found that more than one-third of claims (37.1%) included information to suggest that the injured worker was performing housekeeping tasks at the time of injury (e.g., cooking, cleaning). One-quarter (26.7%) of claims indicated the injured worker was performing construction and/or maintenance tasks either outside or inside the home, and one-fifth (20.5%) suggested that workers were engaged in caregiving activities for the elderly, sick, or disabled. Small proportions of claims in our sample were related to work involving gardening and/or landscaping on the property (7.4%) or childcare (6.3%). These five categories of work tasks roughly mirror the common roles of domestic workers (housekeeping, caregiving, and childcare) and day laborers (construction/maintenance and gardening/landscaping). Two percent of claims in our sample reflected other miscellaneous work tasks (e.g., personal grooming, home security, business assistance, etc.) or lacked sufficient details to determine the type of work activity being performed.

All data coding and analyses for this study were performed using STATA version 16.

### 3 | RESULTS

#### 3.1 | Demographic and employment characteristics

Our inclusion and exclusion criteria described above identified a total of 5,463 workers’ compensation claims that were likely submitted on behalf of residential employees in California between January 2008 and December 2018, an average of 496 claims per year. Table 1 shows basic demographic and employment characteristics for the sample. About 60% of all residential employee claimants were female; the proportion of female claimants was higher among those who were injured while performing housekeeping, caregiving, or childcare tasks than among those injured performing construction/maintenance or gardening/landscaping tasks. The median age of claimants at the time of injury was 49 years, with only modest variations in age between claimants performing different work tasks.

**TABLE 1** Demographic and employment characteristics of residential employees, by work tasks at the time of injury

	All residential employees N = 5463 (%)	Tasks being performed at time of injury					
		Housekeeping n = 2027 (%)	Caregiving n = 1121 (%)	Childcare n = 343 (%)	Construction/ maintenance n = 1460 (%)	Gardening/ landscaping n = 405 (%)	Other misc. n = 107 (%)
Sex							
Female	3180 (59.2)	1768 (88.9)	985 (89.6)	326 (97.9)	40 (2.8)	15 (3.7)	46 (43.4)
Male	2194 (40.8)	221 (11.1)	115 (10.4)	7 (2.1)	1405 (97.2)	386 (96.3)	60 (56.6)
Median age at time of injury	49	51	53	50	44	46	49
Location where injury occurred							
Los Angeles-Long Beach-Santa Ana MSA	2622 (48.0)	1213 (59.8)	448 (40.0)	203 (59.2)	549 (37.6)	164 (40.5)	45 (42.1)
San Francisco-Oakland-Fremont MSA	667 (12.2)	227 (11.2)	121 (10.8)	70 (20.4)	210 (14.4)	27 (6.7)	12 (11.2)
San Diego-Carlsbad-San Marcos MSA	377 (6.9)	95 (4.7)	130 (11.6)	16 (4.7)	94 (6.4)	34 (8.4)	8 (7.5)
Riverside-San Bernardino-Ontario MSA	292 (5.4)	98 (4.8)	55 (4.9)	7 (2.0)	94 (6.4)	34 (8.4)	4 (3.7)
Sacramento-Arden-Arcade-Roseville MSA	200 (3.7)	39 (1.9)	53 (4.7)	7 (2.0)	84 (5.8)	12 (3.0)	5 (4.7)
Other	1305 (23.8)	355 (17.5)	314 (28.0)	26 (7.6)	429 (29.4)	134 (33.1)	32 (29.9)
Median employment tenure at time of injury (years)	1.00	2.15	1.12	1.05	0.33	1.01	0.97
Injuries on same day of hire	315 (8.0)	64 (4.7)	23 (2.7)	5 (1.9)	170 (15.1)	46 (16.4)	7 (12.1)

Note: Some numbers may not total N due to missing observations for certain variables.

Nearly half the claims in our sample (48%) were submitted for injuries that occurred in the Los Angeles-Long Beach-Santa Ana MSA, and an additional 12.2% of injuries occurred in the San Francisco-Oakland-Fremont MSA. The median employment tenure was longest for those injured while performing housekeeping tasks (2.15 years) and shortest for those injured while performing construction/maintenance tasks (0.33 years). The proportion of claims for injuries that occurred on the same day of hire was highest among workers performing gardening/landscaping (15.1%) and construction/maintenance tasks (16.4%) compared with other workers in the sample.

### 3.2 | Causes and nature of injuries

Table 2 shows the most common causes of injury by type of work being performed at the time of injury. Falls were the most common cause of injury across all work types. Injuries resulting from falls on the same level, slips and trips, or falls on stairs were most frequently reported by workers who were injured while performing housekeeping (29.0%), caregiving (23.2%), or childcare tasks (36.9%), whereas falls from ladders or scaffolding or other elevations were more frequently reported by those performing construction/maintenance (30.0%) or gardening/landscaping tasks (24.1%). Lifting was a particularly common cause of injury among those performing

caregiving (18.6%), while powered hand tools were a common cause of injury among those engaged in construction/maintenance (7.6%) and gardening/landscaping (5.4%) work.

Table 3 shows the most common nature of injury by work tasks at the time of injury. Although strains or tears and fractures were the two most common injuries across all work types, the proportion of strain or tear injuries was generally higher among workers performing housekeeping, caregiving, or childcare tasks while the proportion of fractures was higher among workers performing construction/maintenance or gardening/landscaping tasks. Sprains or tears constituted more than 10% of injuries among those injured while performing both caregiving and childcare tasks. Lacerations were common among those injured while performing construction/maintenance (17.4%) and gardening/landscaping work (16.1%).

Open-text Injury Descriptions in claim records often provide a window into the circumstances surrounding the injury that goes well beyond standard injury codes. These descriptions offer useful insights into the nature of occupational injuries among residential day laborers and domestic workers, whose injuries are rarely documented. Examples from injury descriptions include the following:

*Landscaper fell off a rotten beam on the home and fractured 2 ribs and their left wrist.*

*Attacked by client. "I was thrown...attacked, choked." Injury to neck, shoulder, arms, lower back, [right] foot.*

**TABLE 2** Most common causes of injury, by work tasks at time of injury

Housekeeping (n= 2027)		Caregiving (n = 1121)		Childcare (n = 343)	
Fall, on same level	13.6%	Lifting	18.6%	Fall, on same level	18.3%
Cumulative, NOC	10.8%	Fall, on same level	11.8%	Fall, on stairs	10.2%
Fall, slip, trip	9.3%	Fall, slip, trip	7.9%	Fall, slip, trip	8.4%
Strain or injury	6.8%	Strain or injury	6.4%	Cumulative, NOC	7.2%
Fall, on stairs	6.1%	Cumulative, NOC	6.1%	Lifting	5.5%
Fall, from different level (elevation)	5.4%	Fall, on stairs	3.5%	Fall, from different level (elevation)	4.1%
Repetitive motion	5.2%	Fellow worker, patient, or other person	2.9%	Strain or injury	4.1%
Lifting	4.2%	Repetitive motion	2.9%	Collision or sideswipe with another vehicle	3.8%
Fall, from ladder or scaffolding	3.9%	Collision or sideswipe with another vehicle	2.6%	Fellow worker, patient, or other person	3.5%
Animal or insect	3.3%	Absorption, ingestion, or inhalation	2.5%	Repetitive motion	3.5%
Other	31.4%	Other	34.8%	Other	31.4%
Construction/maintenance (n = 1460)		Gardening/landscaping (n = 405)		Other misc. (n = 107)	
Fall, from ladder or scaffolding	19.5%	Fall, from ladder or scaffolding	12.8%	Strain or injury	11.3%
Fall, from different level (elevation)	10.6%	Fall, from different level (elevation)	11.4%	Animal or insect	8.5%
Powered hand tool	7.6%	Powered hand tool	5.4%	Fall, from different level (elevation)	7.6%
Strain or injury	4.9%	Fall, on same level	5.4%	Fall, on same level	7.6%
Fall, on same level	4.3%	Strain or injury	5.4%	Fall, slip, trip	7.6%
Cut, puncture, or scrape	4.0%	Animal or insect	5.4%	Lifting	6.6%
Fall, slip, trip	4.0%	Fall, slip, trip	5.2%	Cumulative, NOC	6.6%
Lifting	3.6%	Lifting	4.9%	Cut, puncture, or scrape	3.8%
Object being lifted or handled	3.0%	Falling or flying object	4.4%	Object being lifted or handled	2.8%
Falling or flying object	2.7%	Cut, puncture, or scrape	4.0%	Fall, from ladder or scaffolding	2.8%
Other	35.8%	Other	35.7%	Other	34.8%

Abbreviation: NOC, not otherwise classified.

*[Employee] stated that she was trying to help pick up a client that had fallen when she strained her lower back.*

*Nanny involved in auto accident while picking up the [insured's] children. Injuries unknown.*

*Claimant amputated tip of right index finger while using a hedge trimmer.*

Seventeen claims in our sample were for amputations of fingers and toes, with over half among workers identified as primarily performing construction/maintenance tasks (data not shown). In most cases, these amputations were caused by the use of powered hand tools, or other machinery or equipment. Thirty-four claims in our sample were associated with worker fatalities, including 15 cases among workers performing construction/maintenance tasks, eight cases among those performing caregiving tasks, and six cases among those performing gardening/landscaping. Causes of death included falls from heights, motor vehicle accidents, house fires, and drowning in swimming pools. One claim was submitted on behalf of a caregiver who died in the October 2017 Northern California wildfires.

### 3.3 | Initial treatment and claims payments

Table 4 shows the initial treatment workers received as a result of their injuries and the proportion of claims that resulted in payments. More than three-quarters of claims (81.9%) indicated that claimants received some form of initial treatment, with those for workers performing construction/maintenance (86.6%) and gardening/landscaping tasks (85.1%) more frequently showing some form of initial treatment as compared with other workers. The most commonly reported initial treatment was for a "Minor injury for which the remedy, diagnostic testing and procedures were conducted at a hospital or clinic." Workers who were injured performing construction/maintenance or gardening/landscaping tasks were more likely than other workers to require "Hospitalization of more than 24 hours," or "Emergency evaluation, diagnostic testing, and medical procedures." About 8% of claims received initial treatment in the form of a "Minor on-site remedy provided by employer medical staff," a treatment description which we interpret to mean that homeowner-employers provided care directly to injured workers. (Our data set did not include information

**TABLE 3** Most common nature of injury, by work tasks at time of injury

Housekeeping (n = 2027)		Caregiving (n = 1121)		Childcare (n = 343)	
Strain or tear	31.6%	Strain or tear	35.7%	Strain or tear	31.5%
Fracture	12.8%	Fracture	10.7%	Fracture	18.1%
Sprain or tear	8.1%	Sprain or tear	10.6%	Contusion	10.8%
Contusion	6.3%	Multiple physical injuries	5.3%	Sprain or tear	10.5%
Multiple physical injuries only	5.2%	Contusion	5.2%	Multiple physical injuries	4.7%
Laceration	5.1%	Laceration	2.9%	Dislocation	2.9%
Puncture	3.1%	Multiple injuries: physical and psychological	2.3%	Laceration	2.6%
Inflammation	1.7%	Puncture	1.7%	Multiple injuries: physical and psychological	2.0%
Multiple injuries: physical and psychological	1.6%	Mental stress	1.6%	Mental stress	0.9%
Mental stress	1.3%	Asbestosis	1.5%	No physical injury	0.6%
Other	23.2%	Other	22.5%	Other	15.4%
Construction/maintenance (n = 1460)		Gardening/landscaping (n = 405)		Other misc. (n = 107)	
Strain or tear	19.9%	Strain or tear	23.2%	Strain or tear	21.7%
Fracture	19.1%	Fracture	16.8%	Fracture	11.3%
Laceration	17.3%	Laceration	16.1%	Contusion	10.4%
Sprain or tear	5.8%	Puncture	6.7%	Laceration	9.4%
Contusion	5.3%	Sprain or tear	6.4%	Sprain or tear	7.6%
Multiple physical injuries only	5.3%	Contusion	4.9%	Puncture	5.7%
Puncture	4.3%	Multiple physical injuries only	2.2%	Multiple physical injuries only	5.7%
Foreign body	2.3%	Dislocation	1.7%	Multiple injuries: physical and psychological	2.8%
Amputation	1.8%	Amputation	1.5%	Amputation	1.9%
Inflammation	1.3%	Crushing	1.5%	Concussion	1.9%
Other	17.6%	Other	19.0%	Other	21.6%

about any subsequent medical care that injured workers received, so our analyses were limited to these initial forms of treatment.)

Approximately two-thirds of claims (65.7%) in our sample resulted in some form of payment to the injured worker. The most common type of payment was for medical care (59.5%), followed by temporary disability (24.8%) and permanent disability (21.7%). Workers who were injured performing construction/maintenance, gardening/landscaping, or other miscellaneous tasks were less likely than other workers to receive payments for medical care. Those injured while performing gardening/landscaping or other miscellaneous tasks were also less likely than other workers to receive payments for temporary or permanent disability. Claims for workers who were injured performing housekeeping or childcare tasks were more likely than other claims to result in payments for legal settlements.

About 90% of claims with payments for medical care showed a total medical payment amount of \$250 or more, the threshold at which the Workers' Compensation Insurance Rating Bureau of California (WCIRB) distinguishes between first aid and more serious medical treatment.<sup>19</sup> Claims for workers injured performing caregiving or childcare tasks showed slightly higher proportions of

medical payments above \$250; those for workers performing gardening/landscaping or other miscellaneous tasks showed slightly lower proportions of medical payments above \$250.

### 3.4 | Employment tenure and likelihood of claim approval

As noted above, workers' compensation eligibility for residential employees in California is determined by two factors—employment tenure (whether the employee had worked or was expected to work 52 hours or more for the employer) and earnings (whether the employee had earned or was expected to earn \$100 or more from the employer; California Labor Code §3352(h)). Although workers' compensation claims records do not include information on a workers' earnings, our ability to determine the length of time a claimant had been working for the employer before the reported injury occurred enabled us to consider the relationship between employment tenure and the probability that a claim would result in payments. The percentage of claims resulting in payments was lowest (43%) for claims where the injury occurred on the same day of



**TABLE 4** Initial treatment and claims payments, by work tasks at time of injury

	All residential employees N = 5463 (%)	Tasks being performed at time of injury					
		Housekeeping n = 2027 (%)	Caregiving n = 1121 (%)	Childcare n = 343 (%)	Construction/ maintenance n = 1460 (%)	Gardening/ landscaping n = 405 (%)	Other misc. n = 107 (%)
<b>Initial treatment</b>							
Any treatment	3505 (81.9)	1305 (80.0)	639 (78.9)	237 (80.9)	976 (86.6)	286 (85.1)	62 (78.5)
Minor clinic/hospital medical remedies, diagnostic testing, and medical procedures	2426 (56.7)	1002 (61.4)	451 (55.7)	164 (56.0)	576 (51.1)	188 (56.0)	45 (57.0)
Emergency evaluation, diagnostic testing, and medical procedures	601 (14.0)	168 (10.3)	86 (10.6)	29 (9.9)	251 (22.3)	57 (17.0)	10 (12.7)
Minor on-site remedies by employer medical staff	340 (8.0)	109 (6.7)	87 (10.7)	39 (13.3)	81 (7.2)	21 (6.2)	3 (3.8)
Hospitalization >24 h	123 (2.9)	20 (1.2)	14 (1.7)	5 (1.7)	62 (5.5)	19 (5.6)	3 (3.8)
Future major medical/lost time anticipated (i.e., hernia case)	15 (0.4)	6 (0.4)	1 (0.1)	-	6 (0.5)	1 (0.3)	1 (1.3)
No treatment	773 (18.1)	328 (20.0)	171 (21.1)	56 (19.1)	151 (13.4)	50 (14.9)	17 (21.5)
<b>Claims resulting in payment</b>							
Any payment	3589 (65.7)	1383 (68.2)	766 (68.3)	244 (71.1)	908 (62.2)	230 (56.8)	58 (54.2)
Medical	3248 (59.5)	1262 (62.2)	699 (62.4)	221 (64.4)	809 (55.4)	207 (62.3)	50 (46.7)
Medical >\$250 <sup>a</sup>	2939 (90.5)	1136 (90.0)	645 (92.3)	205 (92.8)	728 (90.0)	183 (88.4)	42 (84.0)
Temporary disability	1357 (24.8)	484 (23.9)	324 (28.9)	121 (35.3)	334 (22.9)	73 (23.9)	21 (19.6)
Permanent disability	1188 (21.7)	419 (20.7)	285 (25.4)	93 (27.1)	314 (21.5)	66 (20.7)	11 (10.3)
Settlement	1093 (20.0)	457 (22.5)	227 (20.2)	78 (22.7)	261 (17.9)	58 (22.5)	12 (11.2)
Other	1856 (34.0)	701 (34.6)	368 (32.8)	125 (36.4)	526 (36.0)	109 (34.6)	27 (25.2)
No payment	1874 (34.3)	644 (31.8)	355 (31.7)	99 (28.7)	552 (37.8)	175 (43.2)	49 (45.8)

Note: Some numbers may not total N due to missing observations for certain variables.

<sup>a</sup>Percentages in this row are calculated using the number of claims with medical payments as the denominator.

hire and increased with each additional day of work over the first week of employment. After eight days of work, the proportion of claims resulting in payments leveled off at about 72% of all claims.

As a final step in our analysis, we investigated what additional factors appeared to influence the likelihood that a claim for a residential employee would result in some form of payment. Table 5 presents the results of a logistic regression model that incorporates several demographic, employment, and injury characteristics. The resulting odds ratios can be interpreted as the likelihood a claim will result in payment according to each independent variable included in the model.

The odds of a claim resulting in payment did not vary by sex, claimant's age, or tasks being performed at the time of injury. Employment tenure, however, did have a significant positive impact on the likelihood of payment, with the odds increasing sharply after the first day of work. Claims in which workers had been employed 2–7 days before their injury were 1.8 times more likely to result in payment compared with claims submitted for an injury that occurred on the same day of hire. Claims in which workers had been employed up to 30 days were 2.7 times as likely to result in payment, and the highest odds were among claims in which workers had been employed between 6 months to 1 year.

Initial medical treatment was also found to significantly predict the odds of receiving payment. Claims requiring “Minor clinic/hospital medical remedies and diagnostic testing” were 1.3 times more likely to result in payments compared with claims that required no initial medical treatment, while claims indicating “Minor on-site remedies by employer medical staff” were about 50% less likely to result in payments. Claims showing initial treatment of “Hospitalization of 24 h or more” or “Emergency evaluation, diagnostic testing and medical procedures” did not impact the likelihood of the claim resulting in payment.

We also examined differences in the odds of claims resulting in specific payment types (data not shown), and the results largely matched the overall findings in Table 5. In these analyses, we found slightly higher odds of payment for *permanent disability* or *settlements* with increasing worker age, while those performing childcare or caregiving work had slightly higher odds of receiving *temporary disability* payments for their injuries compared with other work types. Initial medical treatment seemed to have the strongest influence on the likelihood of claims resulting in *temporary disability* payments. Workers who received “Minor clinic/hospital medical remedies and diagnostic testing” were about twice as likely to

**TABLE 5** Estimated odds ratio of claim receiving payment from logistic regression of sex, age, work type, employment tenure, and initial treatment

Variables	Odds ratio	SE
Sex		
Male	-	
Female	0.798	0.132
Age	0.998	0.003
Work type		
Housekeeping	-	
Caregiving	0.956	0.108
Childcare	1.029	0.175
Construction/maintenance	1.193	0.213
Gardening/landscaping	0.775	0.163
Other	0.807	0.283
Employment tenure		
1 Day	-	
2–7 Days	1.836*	0.443
8–30 Days	2.694**	0.573
1–6 Months	2.337**	0.381
6 Months to 1 year	3.483**	0.685
>1 Year	2.997**	0.436
Initial medical treatment		
No medical treatment	-	
Minor on-site remedies by employer medical staff	0.525**	0.082
Minor clinic/hospital medical remedies and diagnostic testing	1.314*	0.149
Emergency evaluation, diagnostic testing, and medical procedures	1.143	0.164
Hospitalization >24 h	0.893	0.212
Future major medical/lost time anticipated	0.821	0.516
Constant	1.002	0.252
Observations	3267	
Pseudo R-squared	0.0343	

\* $p < 0.05$ .\*\* $p < 0.001$ .

receive temporary disability payments as those who received no initial medical treatment, those who received “Emergency evaluation, diagnostic testing and medical procedures” were more than three times as likely, and those receiving “Hospitalization for more than 24 hours” were four times as likely.

## 4 | DISCUSSION

This study represents, to our knowledge, the first analysis of occupational injuries among residential day laborers and domestic workers using state-level workers' compensation claims records. The

exploratory nature of this investigation posed several challenges, particularly related to the identification of relevant cases for our sample. For example, in cases where injured workers had been hired by small contractor firms providing residential construction, housecleaning, or caregiving services, the employer name may have been listed as an individual, and the work setting of the injury would have appeared to be residential. For these claims records, we had no way to determine whether the claim was submitted on behalf of a more “conventional” worker (i.e., a worker employed by a business entity). The unusual nature of workers' compensation claims for residential employees also resulted in discrepancies in our data set that were difficult to interpret, such as claims that were assigned unusual Industry or Class codes, or those that showed initial treatment as treatment by “employer medical staff.” Given the absence of logical response options or consistent coding schemes for residential claims, such investigations necessitate that researchers invest time—and a level of subjective judgement—in identifying and interpreting these claims.

Notwithstanding these limitations, our research demonstrates that workers' compensation claims data can serve as a useful source of information on occupational injuries among residential domestic workers and day laborers, particularly in states where the labor code designates workers' compensation eligibility for residential employees. Although the number of work-related injuries that rise to the level of a formal workers' compensation claim likely represents only a small fraction of all injuries within this workforce, the records of claims that are submitted offer several important insights into the nature of residential and domestic work.<sup>7,8,20,21</sup>

Demographic and employment characteristics for our sample were generally consistent with findings from other studies of residential day labor and domestic work.<sup>5,7,8,11,16,17,22–29</sup> Individuals injured while performing domestic work tasks (i.e., housekeeping, caregiving, or childcare) were predominantly women, and those injured while performing day labor tasks (i.e., construction/maintenance or gardening/landscaping) were predominantly men. Variations in common causes and nature of injuries were also consistent with both prior research on this workforce and with data on workers performing similar tasks in more “conventional” work settings. For example, nearly 30% of claims for workers performing construction/maintenance tasks were triggered by falls from ladders, scaffolding, or other elevations, which mirrors the proportion of injuries from falls among construction trades workers reported in the Bureau of Labor Statistic's Survey of Occupational Injuries and Illnesses (BLS SOII 2019). Claims for workers performing caregiving tasks, on the contrary, were frequently triggered by injuries resulting from lifting of patients or objects, consistent with SOII data showing high numbers of lifting injuries among home health and personal care aides (BLS SOII 2019). Further comparative analyses would be valuable to map correspondences in occupational injuries between workers performing comparable tasks in residential and nonresidential settings.

Those engaged in various forms of domestic work generally had longer employment tenures at the time of injury compared with



those performing day labor roles—the differences were most pronounced between those injured while performing housekeeping tasks (2.0 years) versus those conducting construction/maintenance work (0.33 years). Claims for workers performing construction/maintenance or gardening/landscaping tasks showed higher proportions of injuries occurring on the same day of hire. Such patterns are unsurprising—day laborers are often hired for discrete work assignments on a temporary or intermittent basis, whereas domestic workers are more commonly employed for longer periods, in some cases working for the same employers over many years and performing tasks that are directly connected to intimate family life. We propose that these variations in employment relationships also drive several patterns in the types of injury claims submitted. We found more overall claims submitted for workers performing domestic work activities as compared with day labor roles. The longer median employment tenure of domestic workers—and the close emotional bonds that many workers subsequently forge with families and clients—may encourage residential employers to assist workers in securing compensation through homeowners' insurance policies when injuries occur, even if the injuries are less severe. Lacking such relationships with day laborers, residential employers may only feel compelled to tap into insurance resources when an acute injury on their property is difficult to overlook. This dynamic may be further reflected in the high proportion of injuries to day laborers requiring emergency medical treatment or hospitalization of 24 hours or more.

Our findings indicate that employment tenure plays a strong role in determining whether workers' compensation claims for residential employees result in some form of payment. The longer an individual had worked for the employer before injury, the more likely they were to receive payment through worker's compensation, independent of the type of tasks being performed, the initial treatment received, or other demographic factors. This pattern likely reflects application of the California labor code as it applies to residential employees, with workers' compensation eligibility largely limited to those who have worked a minimum of 52 hours in the 90 days before injury and earned a minimum of \$100 in wages. Indeed, the proportion of claims resulting in payments increased with employment tenure up to about 8 days of work, then generally leveled off. Although clearly, some proportion of claims do successfully result in payments even before injured workers have completed 52 hours of work, workers face even greater difficulty in demonstrating their eligibility in these cases. The employment patterns we see in this data set put day laborers at a distinct disadvantage as compared with their domestic worker counterparts. Although day laborers face increased risk for acute traumatic injuries, they may often lack the employment tenure with employers to make them automatically eligible for compensation—and they may lack a written employment contract or other means to demonstrate that the work assignment was intended to exceed 52 hours. Such outcomes suggest that a different model of compensation may especially be needed to ensure adequate protection for this subsegment of the informal residential workforce.<sup>30,31</sup>

We found that initial medical treatment was predictive of the odds of receiving payment, independent of other variables, but not

entirely in the ways we had expected. Claims for injuries that received "Minor on-site remedies by employer medical staff" were half as likely to result in payment as other claims. It is not entirely clear what accounts for this outcome. It is possible that, given the frequent confusion about workers' compensation eligibility for residential day laborers and domestic workers, claims adjudicators deny claims in which homeowners or other residential employers appear to have responded to the injury in some proactive way. Additional research on these dynamics—and indeed, on the trajectory of injuries to residential employees more generally, from initial treatment to claims submission—would help expand on our findings and generate a richer portrait of the occupational hazards for these workers.

A lack of official data on residential employment precludes the calculation of reliable injury incidence rates—and the subsequent ability to make comparisons to other industries. The largely informal nature of most residential day labor and domestic work, combined with other common worker vulnerabilities deriving from economic insecurity, limited English language proficiency, and/or precarious immigration status, means that the barriers to accessing resources following injury are many.<sup>7,8,32,33</sup> The findings from this investigation must, therefore, be considered with these caveats in mind.

## 5 | CONCLUSION

This study demonstrates how workers' compensation claims data can serve as a tool for examining occupational injuries among residential day laborers and domestic workers. Despite a lack of reliable statistics regarding the size of the "residential employee" workforce in California and the prevalence of injury underreporting, our analysis of claims that were successfully submitted over an 11-year period sheds light on common causes and types of injury and provides several clues as to factors that may influence the likelihood of payment once claims have been submitted, including employment tenure, and type of initial treatment.

As the residential workforce is anticipated to expand in the coming years,<sup>3</sup> better methods are clearly needed to establish and track the size of this sector and the overall number of occupational injuries and illnesses each year—and indeed to prevent such injuries before workers' compensation resources may become necessary. Ensuring that workers have access to both hazard protections and compensatory resources will help confront occupational health inequities for an employment sector that has long served as a vital economic niche for immigrants and racial minorities.

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### CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

### DISCLOSURE BY AJIM EDITOR OF RECORD

John D. Meyer declares that he has no conflict of interest in the review and publication decision regarding this article.

### AUTHOR CONTRIBUTIONS

Kevin Riley conceived of this study and oversaw the design and implementation of the study, including the securing of workers' compensation claims data and application of inclusion and exclusion criteria. Rosario Majano conducted data analysis and generated tables of the results. Both authors contributed to writing the manuscript, provided final approval of the version to be published, and agree to be accountable for the accuracy and integrity of this study.

### ETHICS APPROVAL AND INFORMED CONSENT

Human subjects' institutional review and approval were provided by UCLA (IRB#19-000124) to obtain data fields that identified employers and insurers.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the California Workers' Compensation Information System (WCIS). Restrictions apply to the availability of these data, which were used under license for this study. Data are available upon request from WCIS at <https://www.dir.ca.gov/dwc/WCIS.htm>.

### ENDNOTES

<sup>a</sup>See for example <https://gtm.com/household/resource-center/workers-comp-requirements/> (retrieved August 30, 2020). See also Riley and Gúzman.<sup>8</sup>

<sup>b</sup>The WCIS does not collect information on employer's race, ethnicity or immigration status.

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