

Hand Eczema Workers' Compensation Claims: Real-World Data Analysis in the United States

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Conclusions

- Hand Eczema (HE) related workers' compensation (WC) claims were associated with significant lost work time and costs.
- Costs approached \$30,000 per HE workers' compensation claim among those in the manufacturing industry.
- Average lost time from work per claim in the Healthcare and social assistance industry approached four years.
- These findings underscore the severe burden of occupational hand eczema and thus the need for early diagnosis and treatment to limit disability.

Objectives

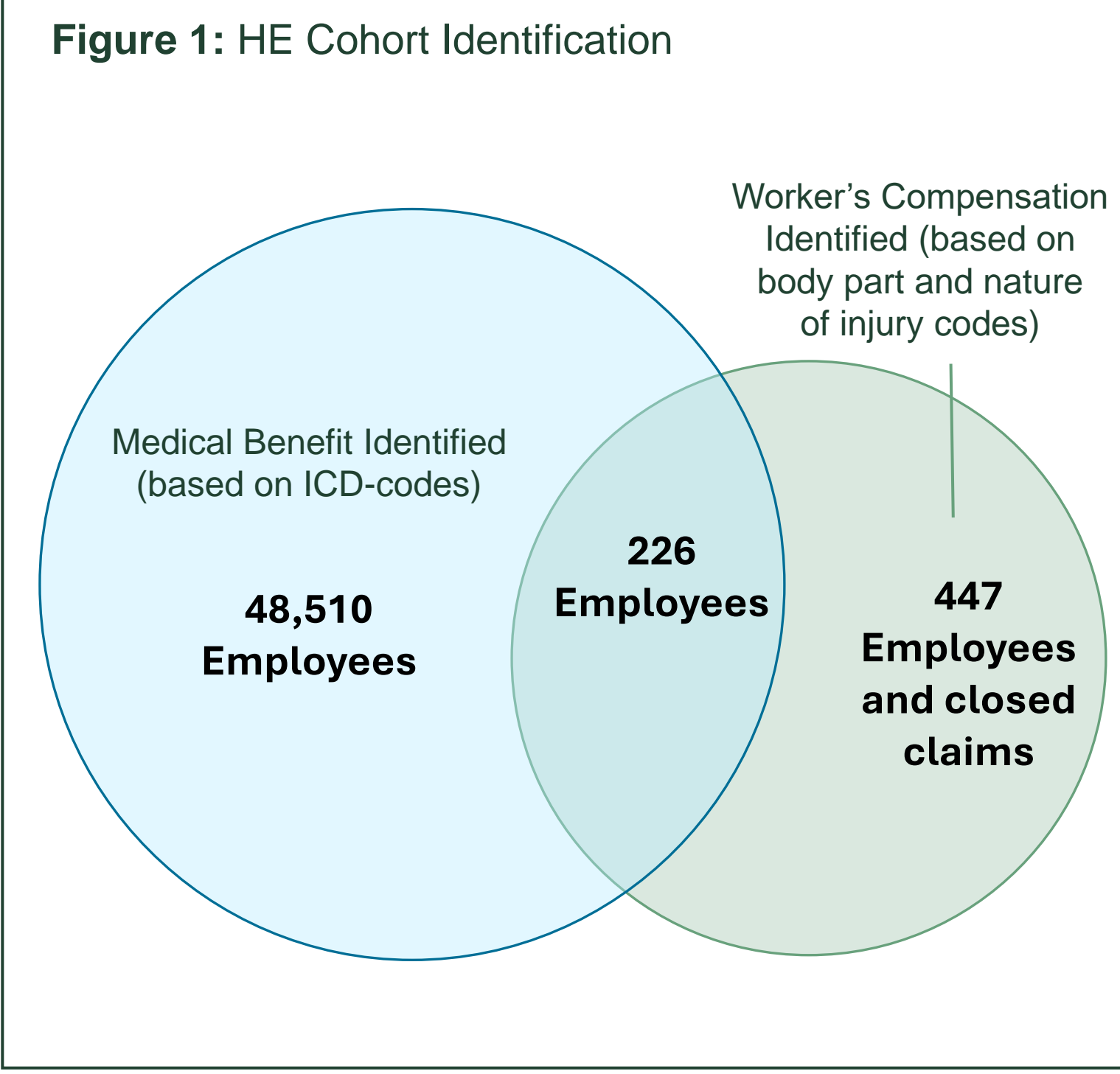
- This study aimed to understand Hand Eczema (HE) related workers' compensation (WC) claim patterns using real-world data from a US employer database.

Background

- Hand Eczema (HE) is the most common occupational skin disease, with prevalence that is increased in high-risk occupations.^{1,2}
- Injuries at work are covered by workers' compensation (WC).
- Medical claims include International Classification of Diseases (ICD) diagnosis codes but lack specificity for the body location affected.
- WC claims include detailed codes for body location / part, nature of injury, and cause of the injury, but lack diagnosis codes.
- There is limited published research on the indirect costs associated with HE:
 - There were no US publications on this topic.
 - Published studies were from Italy³ and Germany⁴ and did not use real-world objective data.

Methods

- Retrospective observational database analysis using real-world claims data from the Workpartners Research Reference Database (RRDb).
- Employees were identified for the analysis with:
 - Closed (fully paid) WC claims:
 - Involving body locations: hands, wrists, or fingers
 - With injuries classified as allergic reaction, dermatitis/rash/skin disease, or irritation/inflammation/swelling
 - Medical claims with one or more of the following ICD codes:
 - Atopic Dermatitis (ICD-9=691.x, ICD-10=L20.x)
 - Allergic Contact Dermatitis (ICD-10=L23.x)
 - Irritant Contact Dermatitis (ICD-10=L24.x)
 - Unspecified Contact Dermatitis (ICD-10=L25.x)
 - Other and Unspecified Dermatitis (ICD-10=L30.x)
- The index date was the date the WC claim was initiated.
- Primary outcomes included:
 - Number of WC claims per claimant
 - Duration of WC claims
 - Cost of WC medical and other payments
- Industry type using North American Industry Classification System.
- Costs inflation-adjusted to December 2024 using the Consumer Price Index.
- HE cohort identification is shown in **Figure 1**.



Results

226 employees met the study criteria

- Demographic characteristics of the HE cohort are provided in **Table 1**.
- Other and Unspecified Dermatitis was the most frequent diagnosis within the cohort (**Figure 2**).

Hand Eczema WC claims were filed by employees in a variety of industries

- Overall, the study incidence was 6.06 HE-related WC claims per 100,000 eligible person-years (**Table 2**) with the highest incidences for those in:
 - Manufacturing: 40 claims, incidence 11.20 / 100,000 eligible person years
 - Retail trade: 100 claims, incidence 10.49 / 100,000 eligible person years
 - Health Care and Social Assistance: 58 claims, incidence 8.7 / 100,000 eligible person years

Hand Eczema WC claims had an average cost of \$10,197 (SD=\$45,172), a median cost of \$477, and were most expensive for those (Figure 4):

- In the following industries:
 - Manufacturing: mean \$29,587 (SD=\$94,790), median \$1,028
 - Finance & Insurance: mean \$11,238 (SD=\$25,627), median \$1,319
 - Retail trade: mean \$8,476 (SD=\$28,472), median \$613
- With affected location of Fingers:
 - 31 overall claims, mean cost of \$37,792 (SD=\$109,547), median cost of \$1,666
 - 22 claims with Irritation / Inflammation / Swelling, mean cost of \$52,553 (SD=\$127,875), median cost \$4,592

11.5% of Hand Eczema WC claims had lost work time, averaging 277 (SD=692) days, median 121 days

- The Health Care and Social Assistance industry had 2 claims (**Table 2**) averaging 1,443 (SD=2,013) days of work absences (**Figure 5**).
- Location of Hands had 6 claims (**Table 3**) averaging almost 1.5 years of work absences (**Figure 5**), with a median of 81 days.
 - Hand location with Irritation/ Inflammation/ Swelling had 5 claims (**Table 3**), averaging almost 1.8 years of work absences, with a median of 93 days.

Table 1 Baseline Characteristics of the HE Cohort

Characteristic	HE Cohort (N=226)
Age, years	Mean (SD) 41.2 (13.4) Median (IQR) 39.3 (28.6, 53.2)
Age category N (%)	< 18 years 0 (0.0%) 18-49 years 155 (68.6%) 50-64 years 71 (31.4%)
Sex N (%)	Male 99 (43.8%) Female 127 (56.2%)
Marital Status N (%)	Married 21 (9.3%) Single 62 (27.4%) Other/Unknown 143 (63.3%)
Race N (%)	White 59 (26.1%) Black 13 (5.8%) Asian 6 (2.7%) Other 24 (10.6%) Unknown (or not uniquely identified) 124 (54.9%)
Ethnicity N (%)	Hispanic 23 (10.2%) Non-Hispanic 78 (34.5%) Unknown 125 (55.3%)
Region (1 st digit Zip code) N (%)	New England (Zip codes starting with 0) 20 (8.8%) East North Central (Zip codes starting with 1) 62 (27.4%) Mid-Atlantic (Zip codes starting with 2) 8 (3.5%) South-East (Zip codes starting with 3) 11 (4.9%) East Central (Zip codes starting with 4) 31 (13.7%) North Central (Zip codes starting with 5) 10 (4.4%) Central (Zip codes starting with 6) 13 (5.8%) South Central (Zip codes starting with 7) 9 (4.0%) Mountain (Zip codes starting with 8) 24 (10.6%) Pacific (Zip codes starting with 9) 36 (15.9%)

Figure 2 Number of Employees with Medical Diagnosis in the HE Cohort

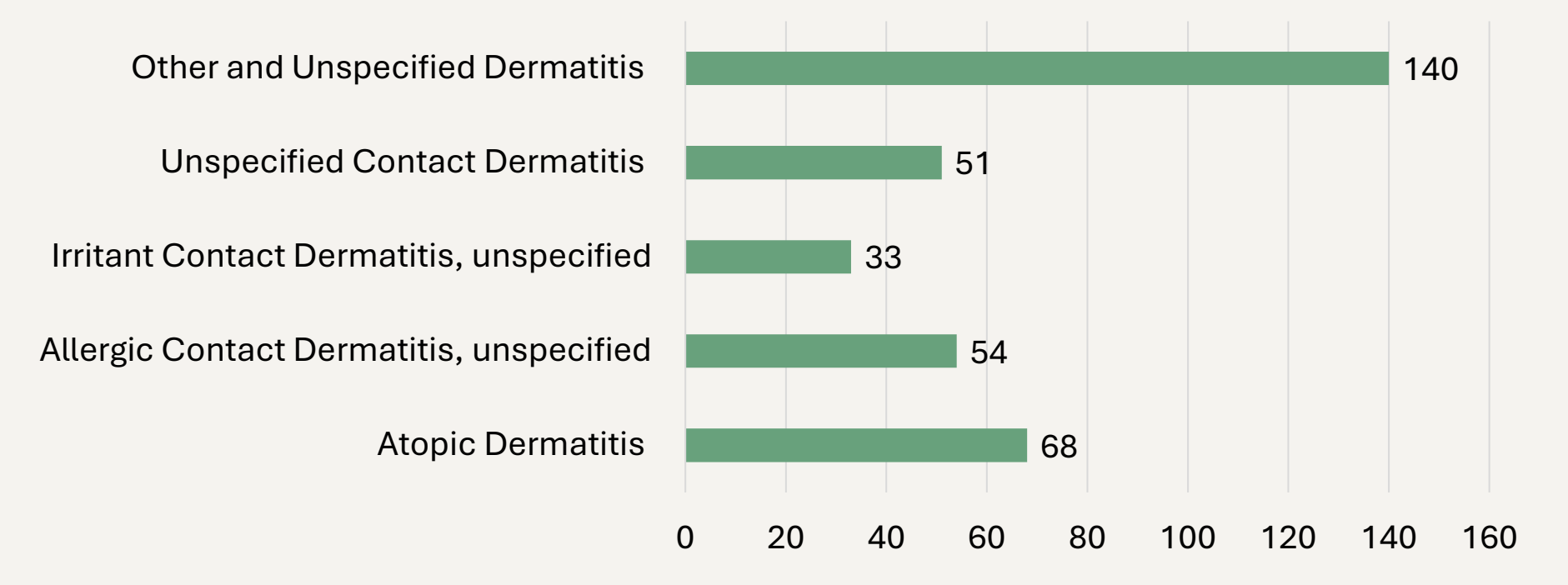


Table 2 WC Claim Utilization by Industry

Industry*	HE WC Claims	Full-time Eligible Employee Years	Claims per 100,000 Member Years	Median Duration of WC Claims in Days	Number of Claims With Lost Time
Retail Trade	100	953,681	10.49	155	8
Health Care and Social Assistance	58	666,990	8.70	81	2
Manufacturing	40	357,088	11.20	109	13
Utilities	9	333,094	2.70	194	--
Administration and Support and Waste Management and Remediation Services	8	336,056	2.38	194	2
Finance and Insurance	7	382,024	1.83	109	1
Transportation and Warehousing	3	58,915	5.09	56	--
Professional, Scientific, & Technical Services	1	425,387	0.24	476	--
Total	226	3,729,724			26
Median			6.06	121	

*The "Educational Services", "Other Services (except public Administration)" and "Other (not included above)" industries were evaluated and omitted from the above table because no employees met the study criteria

Figure 3 Average Duration of WC Claims

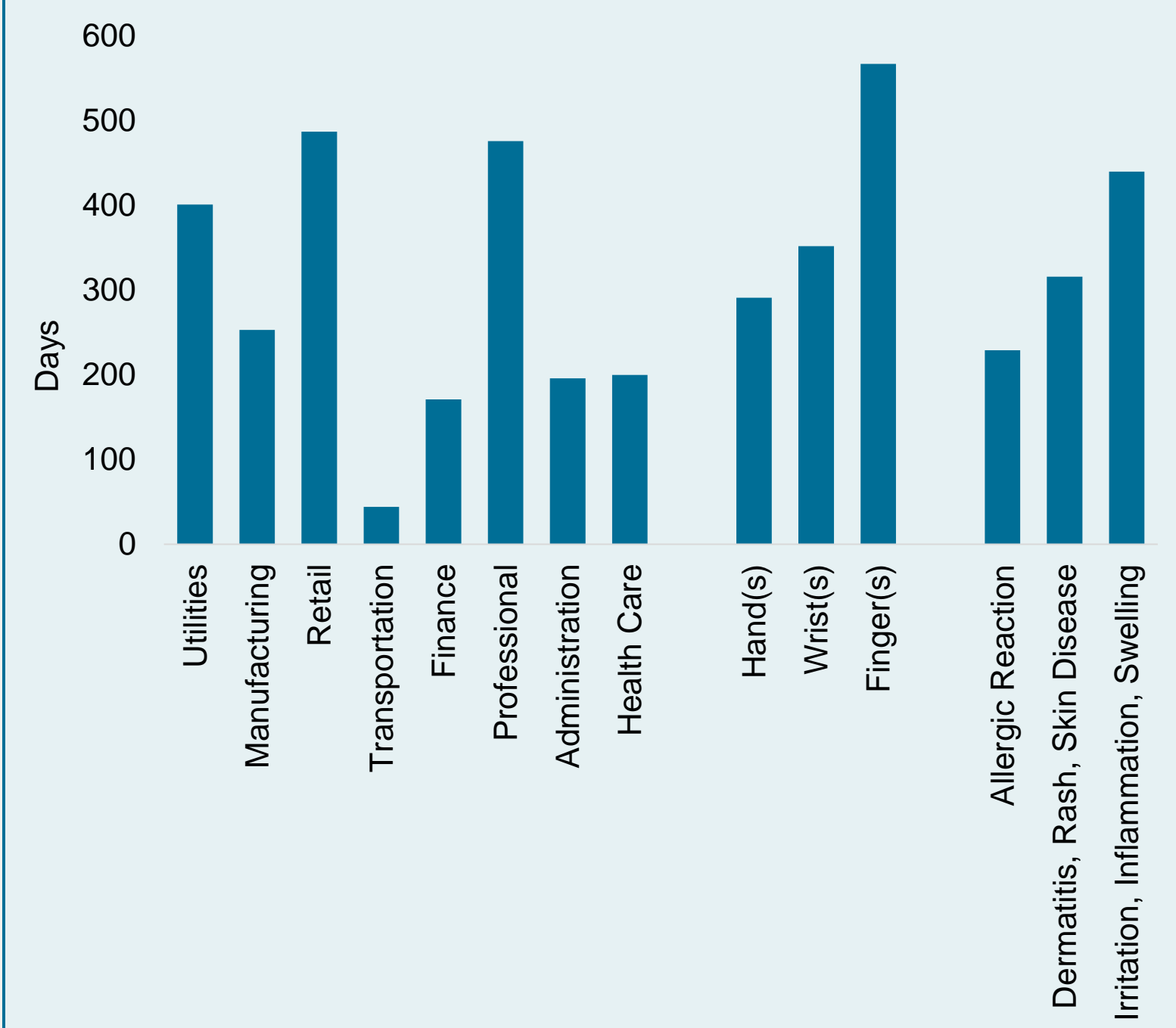


Figure 4 Average Cost per Claim

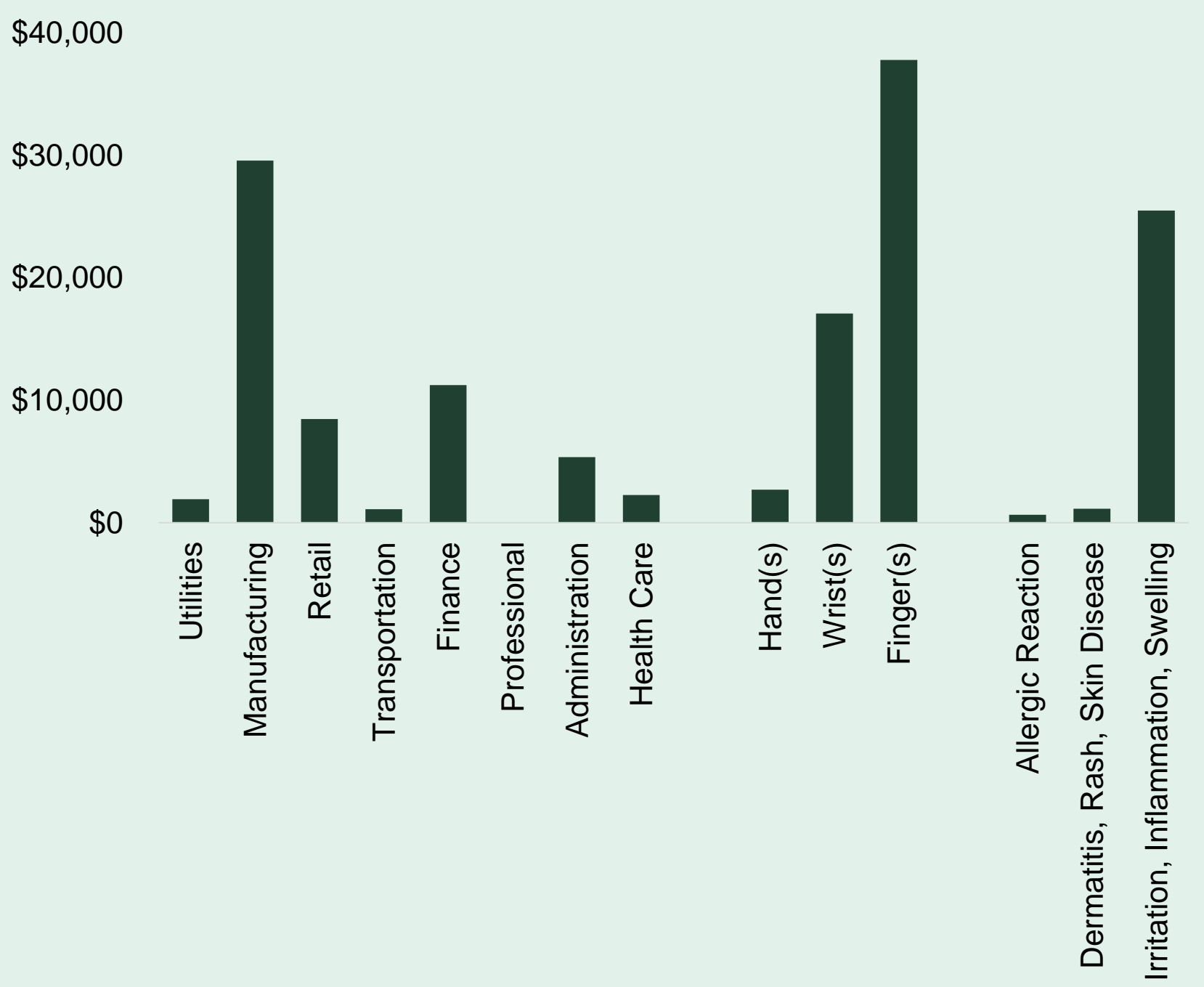
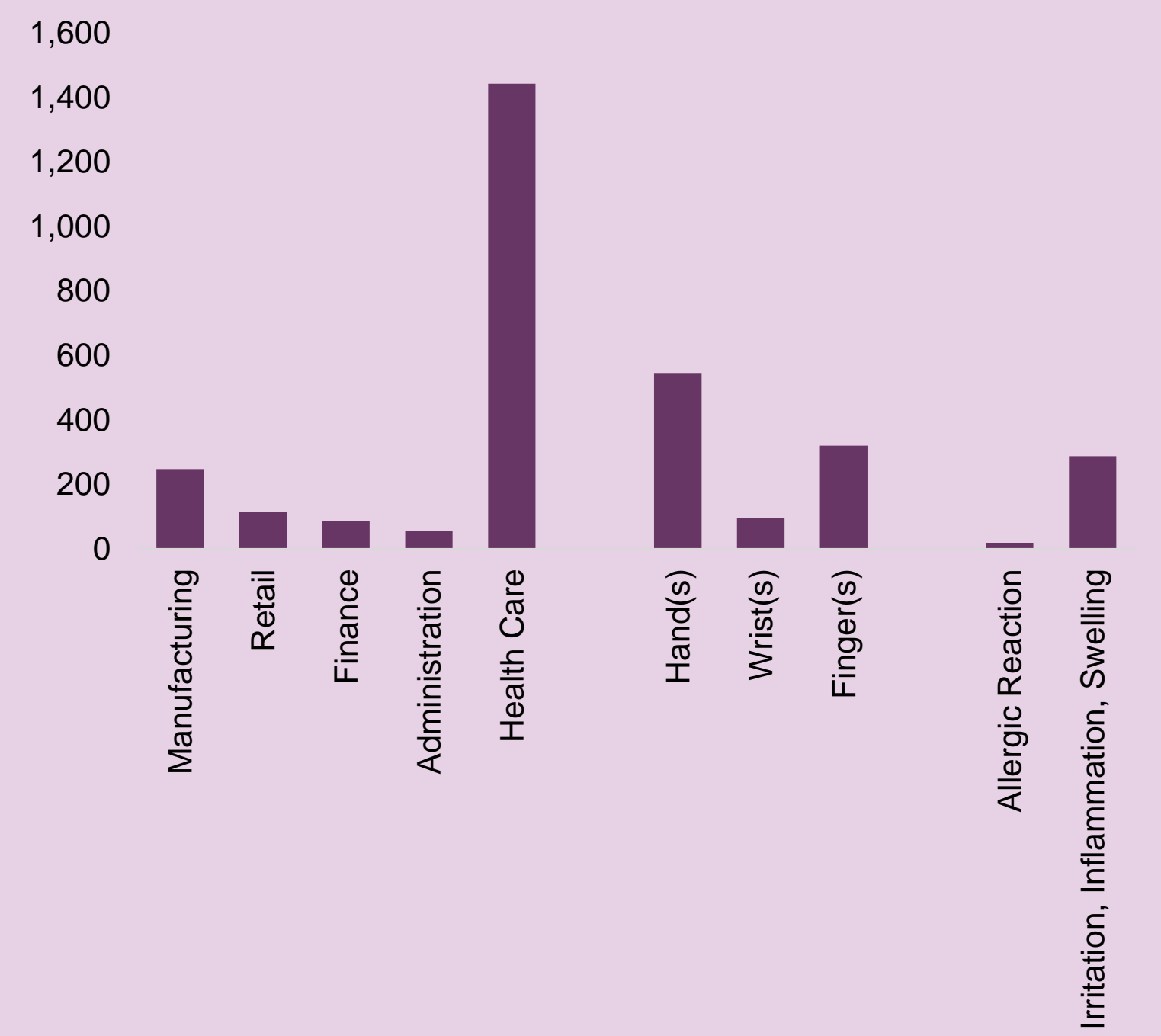


Figure 5 Average Days of Lost Time per Claim



Abbreviations WC, Workers' Compensation; HE, Hand Eczema; RRDb, Research Reference Database; ICD, International Classification of Diseases; SC, standard deviation; NAICS, North American Industry Classification System (www.census.gov/naics).

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- Potential limitations**
- Claims data may contain inaccuracies.
 - WC covers accidents, injuries, or events that happen in the workplace. Employees who identify a condition such as HE and do not report the incident as occurring at work would not have claims within the WC system.
 - Employees previously diagnosed with HE may not seek medical care or may self-treat and may use disability and not use their WC benefit.

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This sample size of employees with WC and medical claims was limited.
The RRDb represents self-insured employers offering comprehensive benefits and may not reflect the broader US workforce.
Industries reported are based on the employer. Workers within an industry, such as healthcare, may include doctors, healthcare practitioners, pharmacists, janitors, administrative staff, security and other staff.