

Occupational Amputations in Illinois

Data Linkage to Target Interventions

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Background

- Amputations are obviously bad injuries
- Amputations cluster in certain sectors and workplaces
- Hispanics and immigrants suffer a disproportionate number/rate of amputations
- Amputations are preventable
- Amputations are good to study

Objectives

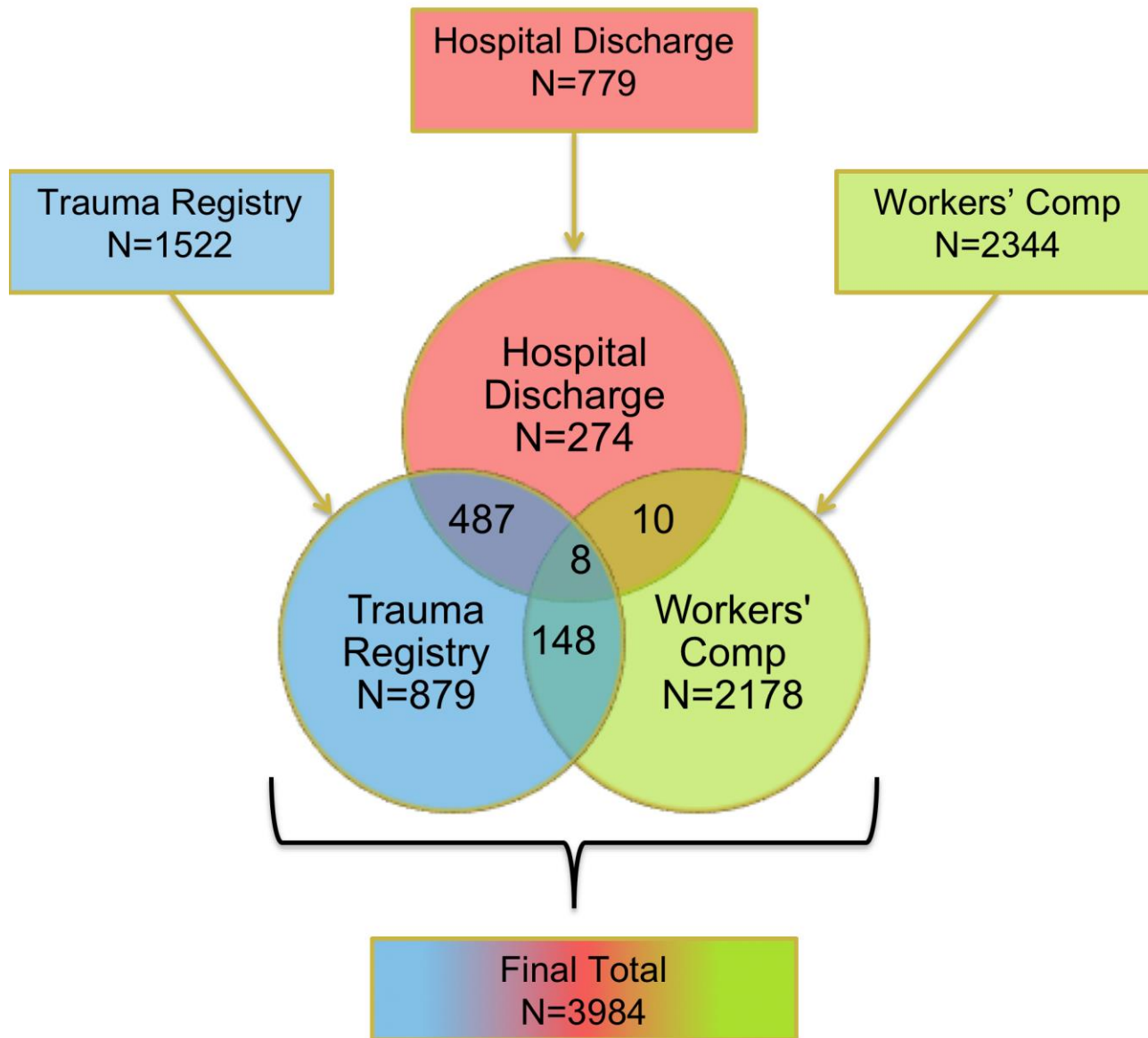
- To determine the numbers, rates, trends of amputations in Illinois
- To compare state-based data with BLS SOII
- To determine the extent of OSHA investigation/citation of known amputations
- To foster a dynamic, statewide intervention program based on surveillance using WC data

Methods

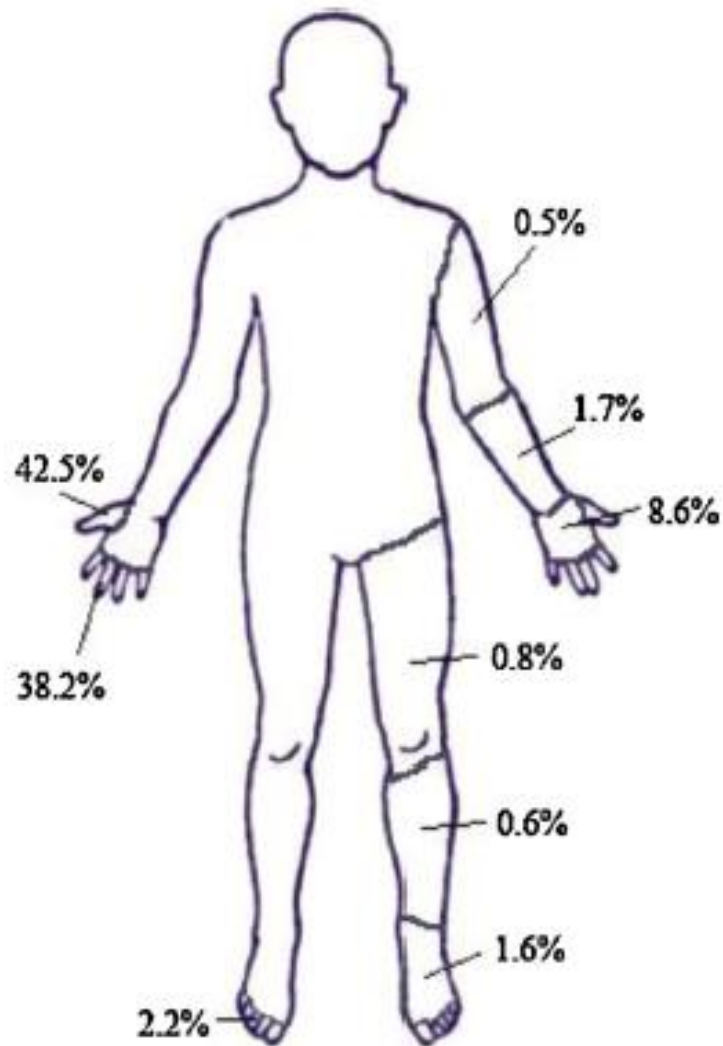
- Linked amputation cases across 3 IL databases
- Conducted a descriptive analysis
- Compared IL-captured cases with BLS-SOII
- Reviewed OSHA citations
- Brought cases to the attention of State agencies

Important Data Elements

Database	Inclusion Criteria	Data Elements			
		Demographics	Exposure Data	Health Data	Economic Variables
Trauma Registry (ITR)	Persons treated in level 1 or 2 trauma unit for ≥12 h (~45,000/yr)	Name SSN Gender Age Race/Ethnicity	ICD9 E-codes E849', showing locations where injury occurred Time, day, date of injury	ICD9N & E-codes Body site Severity Hospital procedures Treatment Disability status on discharge Blood alcohol	Cost of hospitalization Hospital procedures Hospital days
Hospital discharge (HD)	All individuals hospitalized in Illinois	Gender Age Race/Ethnicity	ICD-9N and E-codes	ICD9 codes Hospital procedures Hospital cost Discharge status	Cost of hospitalization Hospital days Payer source
Workers Compensation on Claims (WCC)	Persons filing workers compensation claims for arbitration through IWCC (~70,000/yr)	Name SSN Gender Age	Employer Name Nature of injury Narrative of injury circumstances	ICD9 codes Hospital procedures Level of disability	Total medical costs Lost wages Cost of compensation Payer source



Number of amputation cases in Illinois by source, 2000-2007.



Amputations in Illinois by Body Part, 2000-2007

Workers Comp Claims, N=2344

- **Males: 88.8%**
- **Ages 25-54: 70.4%**
- **Married: 54%**
- **1+ dependents: 36.9%; 11.2% ≥ 3 dependents**
- **Wages: Median weekly: \$500**
Interquartile wage: \$347 - \$736
- **Pro se: 52.6% (all other claims, 18%)**

Details re: employers

- Top 10 employers with the most amputations
 - 5 employment service or temp employment agencies
 - Food manufacturers
 - State of Illinois
 - Heavy manufacturing
 - Grocery store chain
- Employers w highest number of major amputations
 - State (n=8; 5 arm or hand, 3 leg)
 - One temp agency (n=6; 4 arm or hand; 2 leg)
 - Two heavy manufacturers (n=9; 6 arm or hand; 2 leg; 1 foot)
 - One food manufacturer (n=4; 4 arm or hand)
 - **One waste disposal** (n=3; 3 arm or hand)

Amputations from Illinois sources vs SOII estimates, 2000 - 2007

Year of Amputation	Total Cases	Private sector ^a	SOII estimated CASES	Percent error ^b total cases	Percent error ^b private sector only
2000	689	674	696	-1.0%	-3.2%
2001	576	563	658	-12.5%	-14.4%
2002	507	496	453	11.9%	9.5%
2003	481	470	540	-10.9%	-12.9%
2004	467	457	280	66.8%	63.1%
2005	471	461	450	4.7%	2.4%
2006	437	427	230	90.0%	85.8%
2007	356	348	330	7.9%	5.5%
Total	3984	3896	3637	9.5%	7.1%

^a Private sector cases is estimated based on subset of cases with employer information (n=2344), of which 2.2% were employed in the public sector.

^b *Percent error formula*: Linked dataset (experimental) minus Survey of Occupational Injuries and Illnesses estimate (accepted value) divided by the accepted value.

Capture of Illinois Data Sources vs. BLS-SOII & solutions for identifying missed cases in each

	Illinois linkage data (TR, HD, WC)	BLS-SOII data
Body part injured	80% fingers	94% fingers
Which cases are missing?	<ul style="list-style-type: none"> • Minor amputations - e.g., fingertips, those treated as outpatient • Injuries that led to amputation after hospitalization or acute period • Those not filing WC claim • Those whose filing is in progress - Lag time to filing and establishing case 	<ul style="list-style-type: none"> • Small farms <10 employees • Public sector • Self-employed, independent contractor • Case not reported by employer • Non-representative sampling
Solution for identifying missed cases	<ul style="list-style-type: none"> • Obtain ED records • Obtain outpatient records • Get insurance data from work comp carriers • Conduct chart reviews of suspected cases • Review all amputation cases for possible work-relatedness • Link state-based data sources with BLS 	<ul style="list-style-type: none"> • Improve record keeping - Audit • Change weighting system-use more accurate correction factor • Require universal, web-based reporting • Expand system to cover more segments of the workforce • Link with state-based data sources

OSHA Investigations, 2000-7

- 2712 amputation investigations
- Top 5 employers with 30 amputations had a total of 12 inspections
- 3 of the 5 employers cited for known amputation hazards (LO/TO, machine guarding)
- Only one had an investigation/citation within 60 days of the event (60 d is statute of limitations for referrals and complaints)
- None had advanced notice
- **Problems mostly remediated in 30 days**

Interventions

- IL DOL oversees government and temp agencies, 2009
- UIC is bona fide agent of State health department for occupational surveillance (IOSP)
- Community member of IOSP Advisory Board saw presentation; organized meeting with IDOL
- IDOL was provided a list of state and temp agencies with amputations—checking on the investigations
- Interagency agreement btwn IDOL & UIC to share data and collaborate on interventions is now in draft form



Stay tuned....

Thank you!

Illinois Occupational Surveillance Program