



Cost of Injuries to Farmers and Ranchers in Central United States

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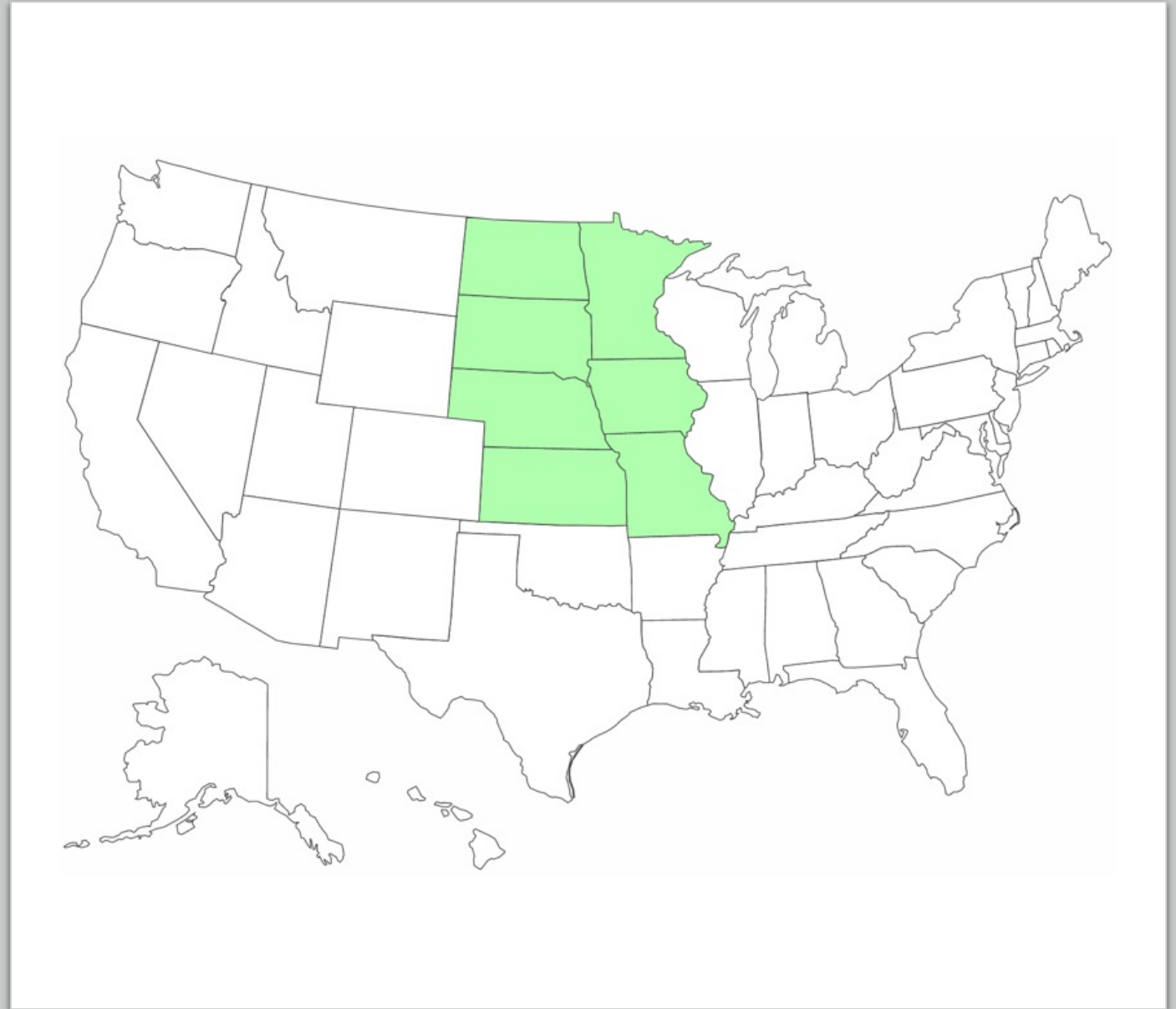
CS-CASH Farm and Ranch Health and Safety Survey

Surveillance covers

- Injuries
- Illnesses
- Exposures
- Preventive practices

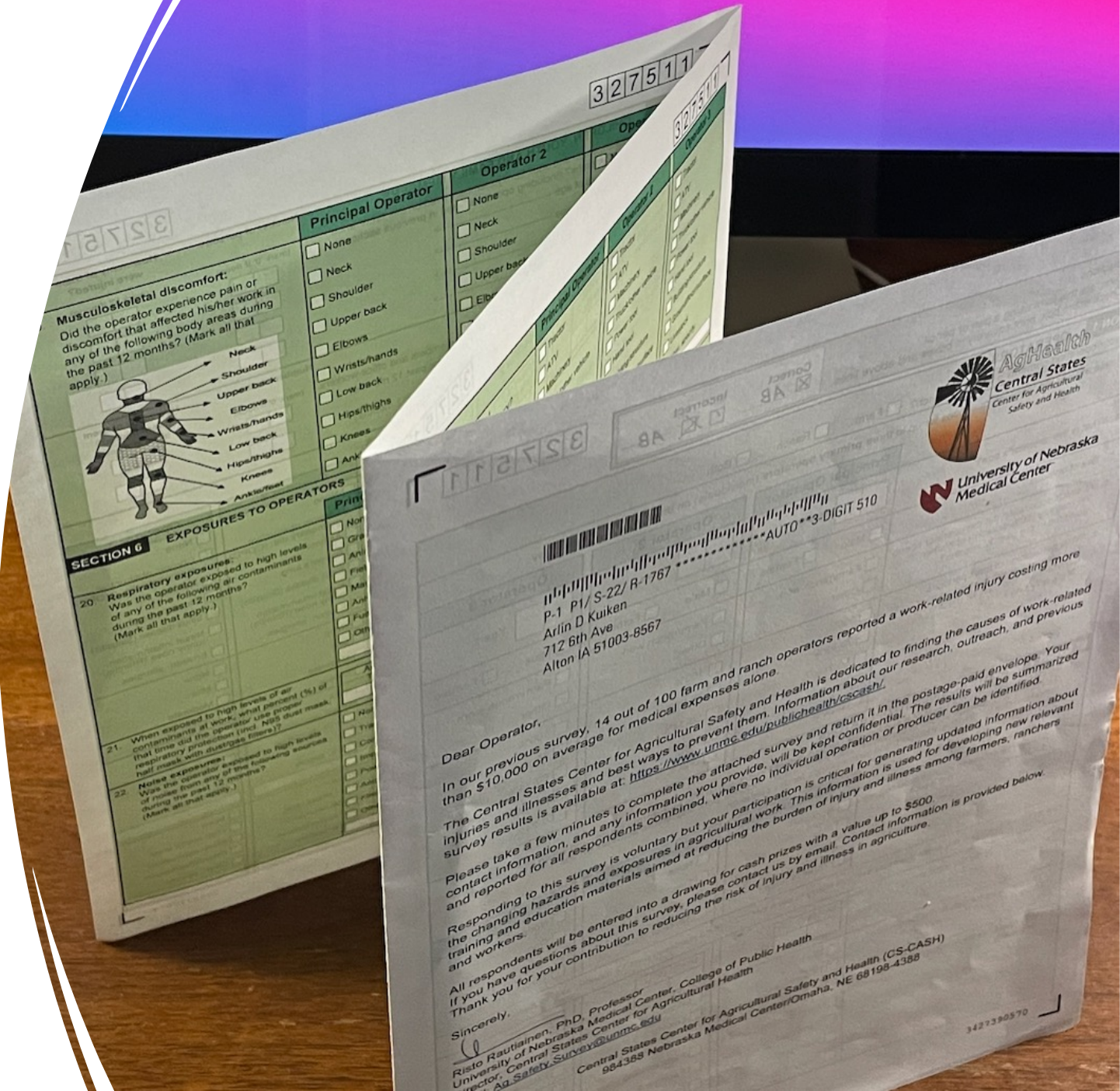
Region

- Iowa
- Kansas
- Minnesota
- Missouri
- Nebraska
- North Dakota
- South Dakota



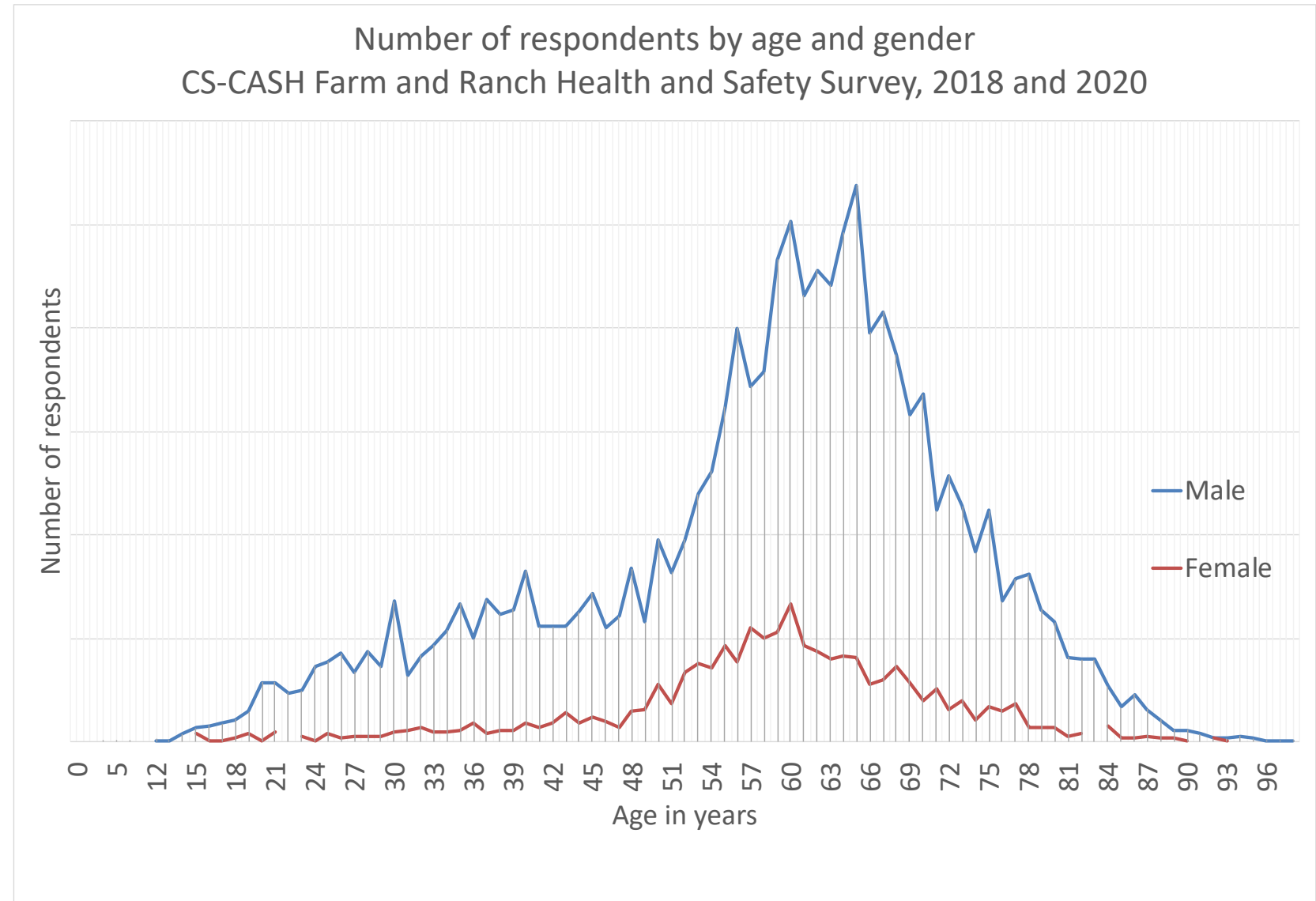
Methods

- Surveys conducted in 2018 and 2020
- Random samples, stratified by state, from Farm Market iD (FMiD)
- Surveys mailed: 16,826 in 2018 and 17,328 in 2020
- Surveys received, total: 5,428 (response rate 15.9%)
- 38 farm production variables from FMiD merged with survey data



Operations and operators

- Operations: 5,428
 - 77% farm
 - 12% ranch
 - 11% both
- Operators (producers): 7,778
 - 5,959 FTE
 - 73% male, 27% female
 - Avg. age 58
 - Primary operator 69%
 - Second operator 24%
 - Third operator 7%



Injuries and injury rates

- Operators reporting injuries:
 - Injured operators n = 792
 - Injury proportion = 10.2% reported one or more
- Injuries reported:
 - All injuries = 1,205
 - Serious injuries (comparable to OSHA recordable) n = 583
 - Injury rate = 15.5 injuries/100 person-years; 20.2 / 100 FTE
 - Serious injury rate = 7.5 / 100 person-years; **9.8 / 100 FTE**
- BLS SOII rates in 2019:
 - Private industries 2.8 / 100 FTE (our rate is **3.5** times higher)
 - Agriculture: 5.2 / 100 FTE (our rate is **1.9** times higher)



Direct (medical) and indirect (lost time) costs from injuries

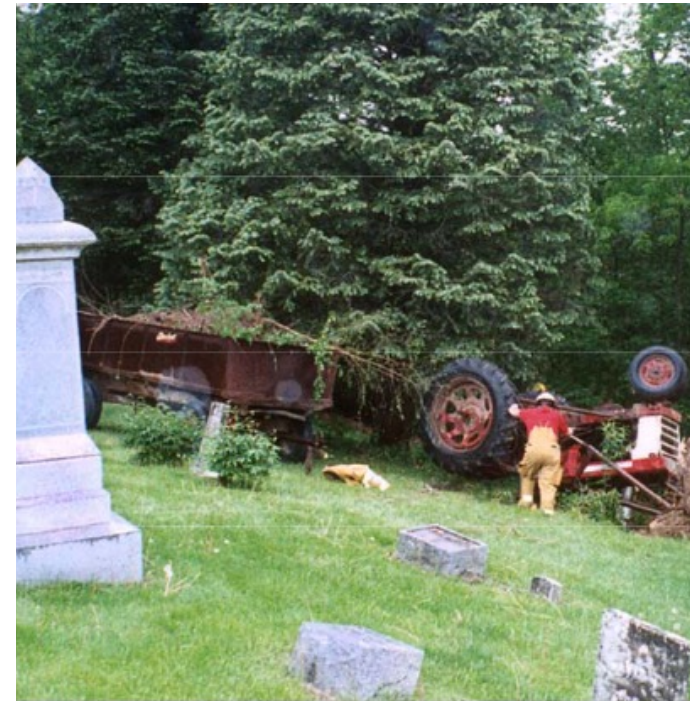
	Medical, self	Medical, insurance	Medical, total	Lost days	Lost time costs	Total costs
Total reported	2,906,927	7,677,464	10,584,391	5,337	1,750,290	12,334,681
Per injury case	3,670	9,694	13,364	6.74	2,210	15,574
Per operator	374	987	1,361	0.69	225	1,586
Per FTE operator	488	1,288	1,776	0.90	294	2,070

Cost of second and third injuries

Injuries reported	Operators	Injury count	Cost per injury	Total cost
0	6,868	0		
1	792	792	15,574	12,334,681
2	124	248	7,787	1,931,187
3	55	165	3,894	642,431
Total	7,841	1,207		14,908,300

Cost of fatalities

- 6 fatalities reported in the surveys
- 3 cases included as likely farm/ranch-related
 - 11, 16, and 52 year-old males
- BLS CFOI 2019: 23.1 cases/100,000 FTE → Expected number of fatalities in our study (5959 FTE): 1.4
- Estimation method: value of lost work time:
 - (70 years – age at time of fatal injury, excluding years under 20) * 2000 h/year * \$41 /h
- Total cost of lost time from 3 cases: \$9,676,000



National estimate of total injury costs to self-employed farmers and ranchers

	Operators	Injury costs
CS-CASH Surveillance respondents	7,778	24,584,300
USA producers (operators)	3,399,834	10,746,019,297

Adjustments needed for National estimate?

Exclude fatalities to children / minors



Potential response/self-selection bias



Average hourly wage used (\$41)



Include hired agricultural employees



Include forestry and fishing workers



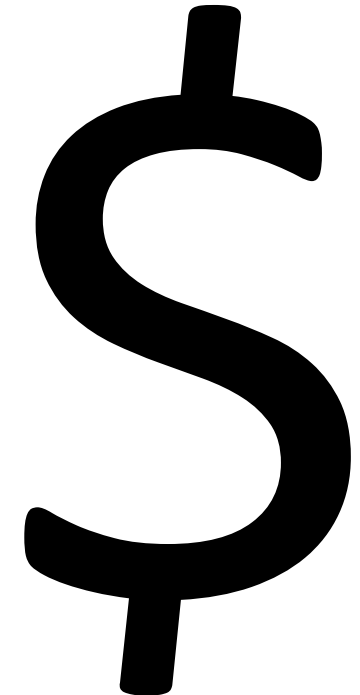
Future cost of long-term (>30 days) disability cases



Potential recall bias (incl. costs paid by insurance)



Include work-related chronic health conditions





Thank you!

