

Overview of BLS's Work on Occupational Safety and Health

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Conditions**



Outline

- Brief Description of SOII
- Evidence of Under-reporting and Prior Research
- On-going research into a household survey of injuries and acute illnesses



Survey of Occupational Injuries and Illnesses (SOII)

- Mandatory annual establishment survey
- Counts OSHA-recordable nonfatal workplace injuries and illnesses
- Based on OSHA records employers keep during the year
 - ▶ Includes employers not otherwise required to keep records
- Collected soon after end of the year
- Approximately 250,000 establishments

SOII Outputs

- Annual establishment totals and rates by industry
 - ▶ “Summary” estimates
- Case circumstances and worker characteristics for cases requiring days away from work
 - ▶ “Case and demographic” estimates



Under-reporting: What do we know?

- Employers under-report occupational injuries and illnesses
- Undercount varies by industry and other factors
- Why?
 - ▶ Employers lack knowledge or decide not to report
 - ▶ Workers lack knowledge or decide not to report
- How do we know this?
 - ▶ BLS studies
 - ▶ Supporting the work of other researchers



Employer Re-contact Studies

- Interview employers to understand
 - ▶ Background/training of those who are responsible for maintaining the logs
 - ▶ Procedures used by establishments to maintain OSHA logs
 - ▶ Do those who maintain the logs understand the OSHA regulations
- Four state pilot test (MN, NY, OR, WA)
- FY2015-16 expanded to national re-contact study

SOI Household Survey

- Will not replace the establishment SOI
- Contact workers directly—outside of the employer/employee relationship
- Ask questions similar to the establishment-based SOI (for comparability)
- Add new questions



What's the goal?

- To produce a COMPLETE measure (counts and rates) of occupational injuries and acute illnesses in the US economy
- Identify the current gaps in the SOII estimates
- Better meet the data needs of the safety and health community



Potential benefits of adding a Household Survey

- Greater accuracy
- Attempt to capture ALL workers in US economy, such as—
 - ▶ Self-employed
 - ▶ Contract and “gig” workers
 - ▶ Household workers
 - ▶ Migrant laborers
 - ▶ Immigrant workers



Potential benefits (2)

- A statistically valid platform to ask occupational safety and health questions
 - ▶ Special studies
 - ▶ Rotating topics and questions
- Better demographic data
- Improved description of the event



Why should BLS do this?

- Successful record of collecting complicated and sensitive information using household surveys
- Basic infrastructure in place
- Results will be consistent over time, across states, etc.
- Results will be statistically valid and provide a measure of reliability



Activities in Support of Household Survey

- Contract to identify issues of concern
 - ▶ Review the literature and provide additional input on key issues
 - “rare events”
 - recall
 - Complex concepts
 - Sensitive topic
 - proxies
- Contract to assess sample design and cognitively test survey

Issue 1: Rare Events

- Occupational injury and illness rates are low

Total	3.2
DAFW	1.0
DJTR	0.7
Other	1.5

- SOII has a large sample and publishes detail on injury type, industry, and occupation
- Under-reporting likely to vary along these dimensions

What does this imply about sample size?

- Effective sample size of 5,100 person years
 - ▶ 80% power to detect difference
 - ▶ Assume household survey 20% higher injury rate
- Sampled persons is ~2.0 effective sample size

Implications for sample size

- Current level of detail in estimates is not possible for a household survey
- Alternatives
 - ▶ Collapsing to 7 similar industry groupings:
 - 72,000 sampled persons
 - ▶ Collapsing to five high incidence industry groupings and one “other”
 - 62,000 sample persons



Issue 2: Recall Error

- Goal: to produce estimates for comparison with the SOII (injuries/100 FTE per year)
- Recall bias
 - ▶ Warner et al (2005) medically attended injuries
 - Recall varies by injury type, time lost
 - All episodes 8% lower in weeks 6-13 than 1-5
 - No difference for fractures, time lost injuries
 - ▶ Large increases in required sample size for shorter recall period

Issues 3: Complex Concepts

- Will individual respondents understand “OSHA-like” concepts?
 - ▶ Concept of a recordable injury
 - ▶ Details of injury (source, nature, part, etc.)



Issue 4: Sensitive Topic

■ How to balance this?

- ▶ Household survey completely removed from employer
 - Decided against contractor suggestion of employer based study
- ▶ Placing a module of questions within a larger, well-known survey may increase respondent comfort with confidentiality

Issue 5: Use of Proxies

■ Use of proxies

- ▶ Likely recall is lower for proxies than sampled adults
- ▶ No existing empirical evidence for injuries



On-going Survey Design Work

- Sample Design Considerations
 - ▶ Representativeness
 - ▶ Allow national level estimates by employment relationship, sector, broad industry and occupation



Existing Surveys/Sampling Frames Assessment

■ Sampling Frame Options

1. Add supplemental HSOII module to existing survey
2. Screen for eligible persons from existing survey, conduct follow-on survey for HSOII
3. Select HSOII sample from existing survey/sampling frame
4. Utilize multiple surveys

■ Sample Design Options

- ▶ Independent samples each year
- ▶ Rotating panel survey
- ▶ Multi-year survey

Surveys Considered

Survey	Organization	Sampling Frame
American Community Survey (ACS)	Census	Census Master Address File (MAF)
Current Population Survey (CPS)	BLS, Census	Census Master Address File (MAF)
National Health Interview Survey (NHIS)	NCHS, Census	Census data for selecting segments; Listing of housing units (HUs) within sampled segments
Behavioral Risk Factor Surveillance System (BRFSS)	CDC, States	RDD landline and cell phones
Medical Expenditure Panel Survey - Household Component (MEPS-HC)	AHRQ	NHIS Respondents
National Health and Nutrition Examination Survey (NHANES)	NCHS	Census data for selecting segments; Listing of dwelling units (HUs) within sampled segments
National Longitudinal Survey of Youth (NLSY)	BLS	Census data for selecting segments; Listing of housing units (HUs) within sampled segments
National Immunization Survey (NIS)	CDC, NORC	RDD landline and cell phones
Survey of Income and Program Participation (SIPP)	Census	Census Master Address File (MAF)
Survey of Consumer Finance (SCF)	FRB, NORC	US Postal Service Delivery Sequence File (USPS DSF); IRS tax return administrative listing
National Survey of Family Growth (NSFG)	NCHS, ISR	US Postal Service Delivery Sequence File (USPS DSF)
General Social Survey (GSS)	NORC	US Postal Service Delivery Sequence File (USPS DSF)
AmeriSpeak (AS)	NORC	US Postal Service Delivery Sequence File (USPS DSF)
KnowledgePanel (KP)	GfK	US Postal Service Delivery Sequence File (USPS DSF)

Sampling Frames Considered

Sampling Frame	Surveys
Census Master Address File (MAF)	ACS, CPS, SIPP
Census Data plus Listing within Sampled Segments	NHIS, NHANES, NLSY
US Postal Service Delivery Sequence File (USPS DSF)	GSS, SCF, AS, KP
RDD Frame of both Landline and Cellular Numbers	BRFSS, NIS
IRS tax return administrative listing	SCF
NHIS	MEPS-HC



Existing Surveys/Sampling Frames Assessment

■ Factors Assessed

- ▶ Population representation
- ▶ Survey mode and use of proxy respondents
- ▶ Availability of information key to Household SOII
- ▶ Timeliness of calendar year estimates
- ▶ Availability of auxiliary data for sample design efficiency

Existing Surveys/Sampling Frames Assessment

■ Conclusions

- ▶ Least expensive option: field Household SOII as supplement to existing survey
- ▶ Second, more expensive option: screen for and select HSOII from existing survey and conduct follow-on survey
- ▶ Third, most expensive option: utilize existing sampling frame to implement Household SOII-specific sample design

Option 1: Supplemental module

■ Benefits

- ▶ Lower cost method with sufficient sample size
- ▶ Partial screening

■ Drawbacks

- ▶ Need to reorient to prior year
- ▶ Would likely require 12 month recall period
- ▶ Little flexibility

Option 2: Follow-on Survey

■ Benefits

- ▶ Provides data for sample design stratification by employment relationship, industry and occupation
- ▶ Greater flexibility in timing

■ Disadvantage

- ▶ Greater respondent burden
- ▶ Higher data collection costs

Questionnaire development

■ Topics covered

- ▶ Screener questions
- ▶ Injury/illness: event, nature, source
- ▶ Medical attention
- ▶ Effect on work
- ▶ Compensation
- ▶ Demographics

■ Cognitive testing

Next steps: Pilot test

- Conduct a pilot test with a nationally representative sample of workers
- Sample size: 5,000+
- Test collection to be done by contractors
- Contract in development

- Expecting results in 2018
- Full evaluation; plan future steps



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