

# Designing a Survey to Collect Data on Occupational Injuries and Illnesses from Households

Nicole Nestoriak  
Elizabeth Rogers

Technical Advisory Committee Meeting  
June 17, 2016



# 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



# What do we know?

- Employers under-report occupational injuries and illnesses
- Undercount varies by industry and other factors
- Why?
  - ▶ Employers lack knowledge
  - ▶ Employers decide not to report

# What's a possible solution?



# SOII Household Survey

- Does not replace the establishment-based SOII
- Contact workers directly—outside of the employer/employee relationship
- Ask questions similar to the establishment-based SOII (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
  - ▶ “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



# Outline

- Issues with a household survey
  - ▶ Sample size needed
  - ▶ Measurement error
- Potential survey designs
  - ▶ Module
  - ▶ Follow-on
- Questionnaire development
- Next steps



# Issues: Sample size

- 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
- Undercount likely to vary along these dimensions

# Issues: Sample size

- Effective sample size of 5100 person years
  - ▶ 80% power to detect difference
  - ▶ Assume HH survey 20% higher injury rate
- Sampled persons is ~2.0 effective sample size
  - ▶ Assumes 75% yield rate
  - ▶ Design effects account for weighting and clustering

# Issues: Sample size

- Current level of detail in estimates not possible HH 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

# Issues: Measurement 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: Measurement Error

- Will HHs understand “OSHA-like” concepts?
  - ▶ OSHA rules are complete
  - ▶ Concept of a recordable injury
  - ▶ Also interested in
    - Details of injury
    - Report to employer, receive pay, etc



# Issues: Measurement Error

- Sensitivity of topic
  - ▶ HH survey completely removed from employer
  - ▶ Decided against contractor suggestion of employer based study
  - ▶ Injury survey potentially part of a larger survey minimizing issues with concealment

# Issues: Measurement Error

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



# Potential: Survey module

## ■ Benefits

- ▶ Low cost
- ▶ Concealment less of an issue

## ■ Drawbacks

- ▶ Have not identified willing survey with sufficient sample size
- ▶ Unlikely to pursue

# Potential: 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

# Potential: Follow-on

## ■ 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: 5000+
- Test collection to be done by contractors
- Funding is in place; contract in development
- Expecting results in 2018
- Full evaluation; plan future steps



# Next steps

- Spanish language version
- Feedback
  - ▶ NAS panel: to evaluate the value of the proposed BLS household survey of occupational injuries and acute illnesses in meeting the surveillance needs of the safety and health community
  - ▶ Solicit feedback from additional stakeholders
- Develop future plans



# Questions

- Are there additional obstacles to collecting injury and illness information from HHs that we should be considering?
- Are there other approaches that might be suitable for collecting this type of data?
- Given our constraints, which approach would you recommend?

# Contact Information

**Nicole Nestoriak**

(202)691-7408

[nestoriak.nicole@bls.gov](mailto:nestoriak.nicole@bls.gov)

**Elizabeth Rogers**

(202)691-5098

[rogers.elizabeth@bls.gov](mailto:rogers.elizabeth@bls.gov)

