

## **Part B. Statistical Methods**

### **1. Universe**

Due to difficulties in producing reliable and detailed estimates for fatal occupational injuries from a sample survey, the Bureau of Labor Statistics (BLS) compiles a census of these fatalities using multiple data sources, primarily solicited from Federal and State agencies. States match source documents to ensure that each fatality will be counted only once.

The BLS receives information for approximately 8,000 fatalities (injuries plus illnesses) a year nationwide. About 21 percent of the fatalities need to have a followback questionnaire sent either to be substantiated or to obtain missing information needed to compile the data.

### **2. Information collection procedures**

The Census of Fatal Occupational Injuries (CFOI) is a Federal/State cooperative program. The State partner in each State:

- arranges with the various State agencies involved to obtain, on a flow basis, source documents on all occupational fatalities in the State during the reference year;
- matches source documents to ensure that each fatality is counted only once;
- conducts followback on fatalities identified by only one source document as being work related and fatalities for which work-relationship is questionable;
- clarifies data with employers when certain information is missing or inconsistent between source documents;
- codes data elements;
- key enters the data; and
- submits the data to BLS.

Attachment 2 contains the introductory letter and structured questionnaire for the followback.

BLS trains State CFOI staff and provides a procedural manual for operating the program. (See the “2004 Program Guide for the Census of Fatal Occupational Injuries Program.”) This manual establishes processing standards to ensure comparability among State data and to generate verifiable nationwide counts of fatal workplace injuries. To satisfy the desired accuracy in the CFOI data, the program guide details the following quality assurance measures:

- Each fatality will be substantiated by two or more independent sources or a source document and a followback questionnaire.
- Data are key entered using BLS-provided software that includes standardized edits to ensure valid entries and consistency between data elements.
- BLS performs an annual Data Acceptance inspection of the State data.

### **3. Maximizing the response**

With the use of diverse data sources and followback techniques, the CFOI program compiles the most complete count of fatal occupational injuries possible.

When a second source document is unavailable to substantiate that the fatality is work related or if certain data are missing, a followback questionnaire will be sent to the employer, the informant named on the death certificate, or the certifying physician or coroner/medical examiner. A telephone followup is conducted when the questionnaire has not been returned or is incomplete. If repeated attempts to reach a contact fail, the State agency tries to reach an alternative person named on the source documents for the needed information. Only after an additional source document or a completed followback questionnaire is received to substantiate work relationship is the case considered useable.

At the end of the data collection cycle, BLS reviews available documentation for unsubstantiated cases (less than 2 percent of the file) and together with the State partner determines whether to include the fatality on the database. This procedure ensures that all legitimate work-related injury fatalities are included in the fatality counts each year. In addition, States are given up to one year after the reference year to update the State file with corrections or additional cases not previously identified or substantiated. Revised counts are published. Generally, an average of 100 additional fatalities is added to the initial published counts.

#### **4. Tests of procedures**

The procedures were tested successfully by Colorado and Texas in 1989 and 1990. (See Windau and Goodrich, "A census approach to compiling data on fatal work injuries," *Monthly Labor Review*, December 1990 available on the BLS Website at <http://www.bls.gov/opub/mlr/1990/12/rpt2full.pdf>). State and regional office recommendations were incorporated into the BLS CFOI questionnaire and data collection procedures that were used to collect reference year 1991 data from 31 States. A national conference was held in September 1992 to present preliminary data for 1991 and to discuss various data collection issues. Research papers presented at the conference are included in BLS Report 845, "Fatal Workplace Injuries in 1991: A Collection of Data and Analysis," dated April 1993. These papers discussed various data sources used (death certificates, toxicology reports, farm bureau reports, and information from the next-of kin) as well as the usefulness of CFOI data in studying occupational fatalities (highway fatalities, homicides, occupational fatality rates, length of tenure of the fatally injured worker). Another paper studying the CFOI program (See Connie Austin, "An evaluation of the Census of Fatal Occupational Injuries as a system for surveillance," in BLS Report 891, "Fatal Workplace Injuries in 1993: A Collection of Data and Analysis," June 1995) also concluded that the procedures used in data collection achieve the program objectives:

- Accuracy: Work-related injury fatalities are substantiated by two or more independent source documents or a source document and followback questionnaire.
- Timeliness: Procedures have been established for quick access to source documents to ensure availability of current data to users. Data are published approximately eight months after the calendar year.
- Usefulness: The database contains information useful for developing injury prevention strategies, including characteristics of the incident, the employer, and the deceased.
- Completeness: Diverse data sources are used to compile a more complete roster of fatal work injuries, including those to private and public sector employees and the self-employed.

BLS updates the CFOI State operating manual and computer system periodically to incorporate State and user recommendations for more efficient data collection as well as additional edits to improve data quality.

## **5. Statistical contact person**

The data collection is a complete census of fatal work injuries and is not probability based. Organizations involved in various aspects of occupational safety and health--statistics, research, injury prevention--were consulted about the data collection design. Gwyn Ferguson (202-691-6941), chief of the Statistical Methods Group in the Office of Compensation and Working Conditions, is the contact person at BLS.

One agency in each of the State partners is designated the data collection organization for the CFOI program. A list of participating State partners and agency contacts is available on request.