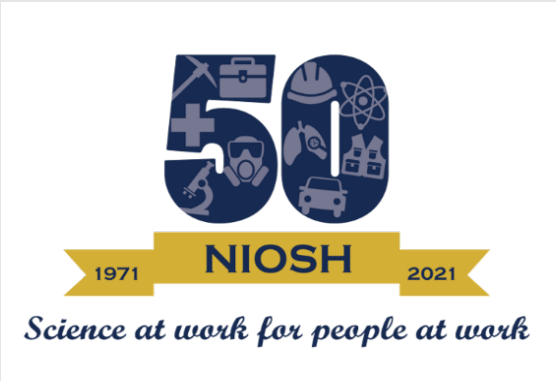
Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

NIOSH Science Blog

NTOF: Understanding Worker Deaths through Surveillance

Posted on March 26, 2021 by Suzanne Marsh, MPA

To accomplish the NIOSH mandate, "to assure so far as possible every man and woman in the Nation safe and healthful working conditions and to preserve our human resources," an accurate, comprehensive accounting of the number of workers who die at work is needed. These data help identify high-risk worker populations and describe the circumstances surrounding workplace fatalities. Prior to 1984, there was no national system for counting occupational fatalities. To fill this knowledge gap, NIOSH that year began collecting data to provide a more accurate, consistent count of traumatic occupational fatalities and continued collecting these data until 2001. Known as the National Traumatic Occupational Fatalities (NTOF) surveillance system, NTOF provided NIOSH and other organizations a reliable count of occupational fatalities which, in turn, informed prevention efforts leading to safer workplaces.



The National Traumatic Occupational Fatalities (NTOF) Surveillance System

In the early 1980s, several different organizations, both governmental and non-governmental, recognized that occupational fatalities were a continuing problem. At the time, there were multiple estimates of the number of annual occupational fatalities from various organizations and government agencies but these estimates varied tremendously. NIOSH identified the need for a consistently collected source of occupational fatality data and recognized that death certificates were the most complete and accurate national source for this information. However, no one was using death certificates in any of the available estimates. Therefore, in 1984, NIOSH proposed to create an electronic database of death certificate data to identify high-risk worker populations and better understand the characteristics and trends of fatalities in these high-risk populations.

Project Aims

The NTOF surveillance system was created with five primary aims:

1. To enumerate all occupational fatalities in the U.S. using standard death certificates;

2. To analyze trends in occupational fatalities according to industry, occupation, cause of death, age, sex, and location;
3. To disseminate occupational fatality information to federal, state, and local agencies charged with preventing injuries in the workplace;
4. To demonstrate the utility of a national occupational fatality surveillance system based on death certificates as part of more accurate, accessible, and timely mortality surveillance; and
5. To provide analyses that will suggest where improvements in workplace safety can be made and thereby help prevent thousands of untimely deaths of American workers.

Case Criteria

Through NTOF, NIOSH collected death certificates from all U.S. state vital statistics registries including New York City and the District of Columbia. Copies of death certificates meeting the following criteria were requested annually from each vital statistics agency:

1. A decedent 16 years of age or older;
2. An external cause of death based on the International Classification of Diseases external cause codes; and
3. A positive response to the “Injury at work?” item.

Project Activities and Impact

In a 1987 Morbidity and Mortality Weekly Report (MMWR) article, the CDC reported that approximately 7,000 workers died on the job annually from 1980 through 1984. Additionally, 42 percent of the approximately 1900 female workers who died on the job during this period were involved in a fatal workplace violence event. These data came from the first five years of the NTOF surveillance system and represented the first-ever national count of work-related deaths from traumatic injury. These data also represented new knowledge, demonstrating for the first time that workplace violence was the leading cause of death for female workers. CDC has recognized this as a significant accomplishment in its historical timeline.

After these initial findings, the NTOF data were extensively used to describe fatal workplace injuries and to identify specific research priorities for many high-risk worker populations. NTOF was used to identify and describe industries and occupations at highest risk, leading causes of occupational fatalities, and determine states that had the largest numbers and highest rates of death. NTOF data showed that Alaska had, by far, the highest rate of occupational fatalities in the U.S. Based on these data, Congress funded NIOSH to establish the Alaska Field Station in 1991 to study and implement prevention efforts for high-risk Alaskan industries such as commercial fishing, logging, and aviation.

From its inception until the early 1990s, NTOF remained the only source of fatal occupational injury data. In 1992, the Bureau of Labor Statistics introduced the Census of Fatal Occupational Injuries (CFOI) which used multiple state and federal sources (including death certificates) to identify occupational fatalities. For several years, both NTOF and CFOI were used, often in concert, to describe occupational fatalities. The NTOF surveillance system was discontinued in 2003 once it was clear that the CFOI would adequately report occupational injury fatalities. NIOSH and NTOF paved the way for what many take for granted today – the availability of accurate, reliable national data on traumatic occupational fatalities.

As we revisit our history during our 50th anniversary year, please share with us how you used NTOF data in the past to improve workplace safety and health.

Suzanne Marsh, MPA, is a Team Lead in the NIOSH Division of Safety Research

This blog is part of a series for the NIOSH 50th Anniversary. Stay up to date on how we're celebrating NIOSH's 50th Anniversary on our website.

Posted on March 26, 2021 by Suzanne Marsh, MPA
Categories 50th Anniversary Blog Series

Post a Comment

Your email address will not be published.

Comment

All comments posted become a part of the public domain, and users are responsible for their comments. This is a moderated site and your comments will be reviewed before they are posted. Read more about our comment policy »

Name

Email

Post Comment

Page last reviewed: March 26, 2021
Page last updated: March 26, 2021
Content source: Centers for Disease Control and Prevention