

Comprehensive study reveals patterns in firefighter fatalities

April 12 2011

While the number of fires is on the decline, firefighter deaths are not—and a new University of Georgia study helps explain why.

Researchers in the UGA College of Public Health found that cultural factors in the work environment that promote getting the job done as quickly as possible with whatever resources available lead to an increase in line-of-duty firefighter fatalities.

"Firefighting is always going to be a hazardous activity, but there's a general consensus among firefighting organizations and among scientific organizations that it can be safer than it is," said study co-author David DeJoy, of the Workplace Health Group in the College of Public Health. "As a society, we ought to make the effort to make it safer."

The research, published in the May edition of the journal *Accident Analysis and Prevention*, examined data gathered from 189 firefighter fatality investigations conducted by the National Institute of Occupational Safety and Health between 2004 and 2009. Each NIOSH investigation gives recommendations directed at preventing future firefighter injuries and deaths. The researchers looked at the high-frequency recommendations and linked them to important causal and contributing factors of the fatalities.

The four major causes they identified were under-resourcing, inadequate preparation for adverse events during operations, incomplete adoption of incident command procedures and sub-optimal personnel readiness.

DeJoy and his colleagues analyzed the investigations in terms of the core culture of the firefighting profession. Firefighting culture should not be construed as one of negligence, said DeJoy, but one based on a long-standing tradition of acceptance of risk. A job that relies on extreme individual efforts and has too few resources leads to the chronic condition of doing too much with too little, he said.

"If you get used to taking risks, it's easy to take a little more risk," DeJoy said. "Most of the time when we take risks, like walking across the street or driving a car, nothing bad happens. This level of risk gets ratcheted up and becomes part of normal activity." Acceptance of risk becomes extremely perilous in a situation in which adverse events can happen at any time and margins of safety are very thin, he added.

Firefighter deaths dropped in the 1970s and 1980s, largely due to improvements in protective clothing, breathing equipment and radio communication, explained DeJoy. In the last decades, fatality numbers actually edged upward while the number of fires has gone down, he said. On average, more than 100 firefighters die on the job in the U.S. each year, which is three times higher than the fatality rate for the general working population. "There's a lot of interest to see what is going on," DeJoy said.

The number one cause of [death](#) identified in the study was not smoke inhalation or traumatic injury, but cardiovascular events. Eighty-seven of the 213 deaths examined in the study were cardiac-related. Deaths from cardiovascular events resulted in two predominant recommendations from the researchers: the need for improvements in medical screening and the need for wider adoption of mandatory fitness/wellness programming.

Many of the recommendations can be traced to a lack of finances, said DeJoy. Not only does under-resourcing affect the ability of a fire

department to acquire innovative technology, it can lead to a shortage of personnel at a fire, compromising rapid intervention and the ability to maintain command and control functions during operations, he said.

DeJoy acknowledged that there is a certain amount of subjective interpretation that goes into analyzing incident investigations. In addition, NIOSH investigations are not mandatory and can be refused by a [fire](#) department. NIOSH also mostly investigates deaths involving career, or paid, firefighters, although a majority of firefighters in the U.S. are volunteers and a majority of line-of-duty deaths involve volunteers. DeJoy said he hopes NIOSH will do more investigations of volunteer [firefighter](#) fatalities, as those organizations may have the greatest need for evaluation and technical assistance.

Provided by University of Georgia

Citation: Comprehensive study reveals patterns in firefighter fatalities (2011, April 12) retrieved 5 May 2024 from

<https://medicalxpress.com/news/2011-04-comprehensive-reveals-patterns-firefighter-fatalities.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--