2022 Urban Fire Forum Position Statement

Support for the Fire Fighter Cancer Cohort Study

Introduction

The International Agency for Research on Cancer (IARC) determined in June 2022, that occupational exposure as a firefighter causes cancer.\(^1\) IARC is the specialized cancer agency of the World Health Organization (WHO), which is part of the United Nations. IARC determined that there was sufficient evidence of increased risk for mesothelioma and bladder cancer, but more limited evidence for cancers of the colon, prostate, testicles, skin (melanoma), and non-Hodgkin lymphoma. Their conclusions were supported by strong mechanistic evidence that exposure as a firefighter increases cancer risk through genotoxic damage, epigenetic alterations, oxidative stress, chronic inflammation, and receptor-mediated effects.

Importantly, these findings apply to all firefighters - including any type of career or volunteer firefighter who has prepared for and taken part in fire control activities. So, reducing cancer risk is vital across the fire service. However, there is currently only limited information on effective cancer prevention interventions in the fire service. The IARC determination that firefighters are at increased risk for cancer confirms the need for research on cancer prevention in the fire service, including identification of effective exposure prevention interventions and limiting or potentially reversing the toxic mechanistic effects of firefighting.

The Fire Fighter Cancer Cohort Study (FFCCS) was established in 2016 to identify the exposures and mechanisms leading to increased cancer risk in firefighters, and to evaluate the effectiveness of cancer prevention interventions. The FFCCS goal is to enroll 10,000 firefighters, the number necessary to evaluate risks for both more and less common cancers and follow them for up to 30 years, given the latency period between exposure and onset of cancers. Currently, over 2,600 firefighters from more than 50 U.S. fire departments have been enrolled in the study, and the results to date include the identification of effective interventions to reduce firefighter exposure\(^2\) as well as providing mechanistic information\(^3\text{--}8\) to support the recent IARC determination that occupational exposure as a firefighter causes cancer. The FFCCS is a research partnership whereby firefighters and academics work together to answer questions posed by the fire service.

The FFCCS is a separate national research platform, yet it is complementary and synergistic with the National Firefighter Registry (NFR). The FFCCS is different from the NFR in that FFCCS collects biological and exposure samples (predominantly blood and urine), to be analyzed for mechanistic changes and to be used as biomarkers to evaluate intervention effectiveness. The NFR will be much larger (goal of 200,000 firefighters), collects largely survey data, and will provide much more detailed cancer rates for firefighters, but it will not collect biological samples. The two studies are collaborating and plan to have FFCCS long-term follow-up for cancer outcomes provided through linkage with the NFR. Participation in both the FFCCS and NFR is voluntary.
**Initiatives**

With full participation (10,000 firefighters for up to 30 years), the FFCCS will be able to:

- Determine which exposures (e.g., combustion products, per- and polyfluoroalkyl substances (PFAS), flame retardants) are increasing cancer rates in firefighters.
- Identify the specific toxic mechanism(s) by which specific exposures increase cancer rates in firefighters.
- Evaluate the effectiveness of interventions to reduce firefighter exposures to carcinogens.
- Measure the effectiveness of interventions to prevent or reverse the toxicity of chemical exposures (e.g., testing of nutraceuticals to reduce the formation of toxic metabolites of combustion products).
- Expand the study to include additional outcomes (e.g., reproductive effects) as requested by our fire service partners.

Protecting the health and safety of our firefighters is one of a fire chief’s most important responsibilities. The Urban Fire Forum understands that additional funding is required for the expansion of the FFCCS to full capacity and to support long-term follow-up of participants including studies of cancer prevention interventions. The Urban Fire Forum expects the FFCCS to provide essential information to guide fire departments and other fire service organizations in the implementation of effective cancer prevention policies.

**Recommendations**

The Urban Fire Forum expresses its support for the FFCCS and encourages all fire chiefs to take the following steps:

- Support the communication and messaging strategies that underscore the importance of the Fire Fighter Cancer Cohort Study (FFCCS) and clarify its synergistic role with the National Firefighter Registry (NFR).
- Express political support for the FFCCS in funding venues for medical research, to reach its targeted cohort goals needed to credibly address the lack of evidence of firefighter cancer.
- Communicate with firefighters that all information in the FFCCS about individual firefighters is confidential and will not be released.
- Encourage participation of your fire departments and your individual members when the opportunity and FFCCS resources allow.

**Sources**


