

The New Jersey Firefighter Cancer Assessment & Prevention Study (CAPS): Lessons Learned from Interviews with Volunteer Fire Chiefs

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INTRODUCTION

Cancer Risk and Firefighters

- Previous studies show that firefighters (FFs) have an increased risk for certain cancers, compared to the general population
 - However, most research has focused on paid FFs
 - Volunteer FFs, who make up the majority of the US fire service, are understudied

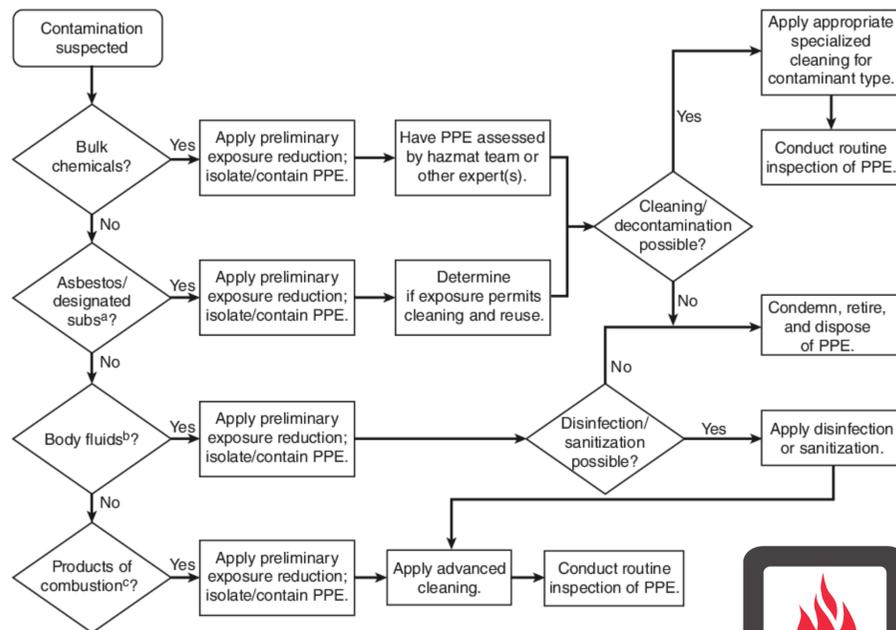
New Jersey Firefighter Cancer Assessment & Prevention Study (CAPS)

- CAPS is an integrated research program that focuses on assessing cancer risk and related risk factors in NJ volunteer FFs
 - Partnership between academic researchers and the fire service
 - Created in response to community concerns about cancer risk among members of a large, suburban volunteer fire department in NJ

Decontamination

- FFs should perform a decontamination process after a live fire response to clean off hazardous chemicals from their gear and bodies
 - This process is known as “decon” and can vary significantly between fire departments
 - Decon occurs both on-scene and at the fire station
 - Decon is an important cancer prevention strategy, since it removes carcinogens from FF’s bodies and gear
- The National Fire Protection Association (NFPA) sets standards for the selection, care, and maintenance of FF’s gear to reduce health and safety risks associated with the response-associated contamination

Figure 1. National Fire Protection Association (NFPA) Standard 1851 “Approaches for Addressing Specific Types of Contamination”



Notes:
^aAnd other designated substances
^bIncludes other microbial contamination
^cIncludes any significant structural fire exposure



METHODS

Qualitative Research Approach

- Semi-structured interviews were conducted with chiefs from a sample of volunteer fire departments across NJ
 - Information Collected: Department membership, operations, decon procedures
 - Sampling: NJ’s 21 counties were divided into 11 sampling regions, based on shared characteristics
 - One volunteer fire department was interviewed from each region.
- Due to the COVID-19 pandemic, interviews were conducted remotely over WebEx by the CAPS Project Coordinator
 - Interviews were transcribed using Temi; transcripts were revised by the student research assistant
 - Qualitative data analysis was conducted using Atlas.ti to identify shared themes and key phrases.

RESULTS

Table 1. Common Concerns and Themes Related to Decon Procedures in NJ Volunteer Fire Departments; Preliminary results from six CAPS interviews.

DECON SOPs & TRAINING	<ul style="list-style-type: none"> • Departments 1 & 4 do not: <ul style="list-style-type: none"> • Have extraction washers and dryers in every fire station • Have FFs doff their gear on-site, bag it, and transport back to the station • Department 4 is in the process of repurposing an older vehicle into a mobile decon unit • Department 6 had showers installed in their station so FFs could “shower within the hour” following a response • None of the departments include decon in their regular membership training
TURNOUT GEAR	<ul style="list-style-type: none"> • None of the departments had second sets of turnout gear for their active FFs • Departments 1 & 4 inspect and repair old gear so FFs can use them as second sets • Departments 3 & 5 allow FFs to use another FF’s gear if their set is unavailable, provided they are the same size • Department 6 was the only department that required FFs to wash their gear after every working fire and complete a wash slip to document the wash
FINANCIAL CONCERNS	<ul style="list-style-type: none"> • Departments 1, 2, 3, 4 & 5 discussed the financial barrier to purchasing second sets of turnout gear for active FFs • Department 4 is working with a neighboring department, who has received grant funding, to collaborate on decon and rehab • Department 1 cited the high cost of extraction washers as the main reason they do not have one at their station • Department 6 struggles to fund annual physical exams for their active FFs, right now only available for incoming FFs

DISCUSSION & FUTURE DIRECTIONS

Key Findings: Decon Procedures Among NJ Volunteer Fire Dpts:

- 33% of department’s interviewed do not have an extraction washer at their fire station.
 - This presents a challenge for FFs who need to wash their turnout gear after a live fire response
- All department’s interviewed shared financial concerns over the resources needed to provide each FF with a second set of turnout gear and obtain other equipment needed for adequate decon
- None of the departments interviewed incorporate decon procedures into their regular membership training
- There is significant variation among NJ volunteer fire departments in terms of decon procedures

Future Directions

- The CAPS team will complete the remaining interviews, summarize key findings, and prepare reports to be shared with stakeholders at the local, state, and national level
- The CAPS team will also leverage the connections made through this interview project to enhance their network of NJ volunteer fire departments who may want to participate in future research
- Future research will further explore adherence and barriers to recommended decon procedures among volunteer FFs

My Research Experience

- As a member of the CAPS team, I strengthened my skills in public health research and broadened my perspective on the scientific process
- I worked directly with the Principal Investigator, Project Coordinator, and graduate student assistants to develop outreach materials, create survey questions, revise interview transcripts, and gather community data
- Through my participation in the interviews, I gained insight into the unique challenges facing volunteer fire departments in my state

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