



On-site decontamination can reduce firefighters' risk of cancer

By Gord Woodward

The health hazards for firefighters aren't extinguished when the flames go out.

Cancer has become the leading cause of death for firefighters across the country. A new study by the University of the Fraser Valley says they are two to three times more likely to die from cancer when compared with the general population — even though they tend to lead healthier lifestyles as a requirement of their work.

“It was shocking,” Surrey fire chief Len Garis says of the findings. “We had some notion of risk but not to this level.”

The culprits are concentrated carcinogens in the air, soot and tar released during structure fires and live training exercises. Repeated exposure to the contaminants through inhaling or skin contact increases the health risk.

The research found that cancer causes more than 86 percent of firefighter fatalities in Canada. “That

became a defining moment for me,” says Garis, who co-authored the study. “The likelihood of dying from cancer becomes extremely prevalent the longer you spend in this industry.”

Most time-loss claims for cancer are at ages 55 to 59. And most cancer deaths occurred over age 65. Four fatal claims were accepted in B.C. for firefighter-related exposure diseases in 2017, including one for an 88-year-old volunteer.

Assessment helps contain contamination

Decontamination of gear and equipment is one way to reduce exposure to the carcinogens. And decontamination becomes even more effective when it's started on site, rather than when crews get back to the fire hall.

“If you can see it or smell it, there's a chance you're bringing contaminants into your body,” says captain Bryan Erwin of Colwood Fire Rescue, a team of

8 career firefighters and 32 volunteers near Victoria. “We’re trying to eliminate them at the source.”

His department has developed several post-fire decontamination best practices that include:

On-site assessment

Firefighters keep on their self-contained breathing apparatus (SCBA) while they assess the contamination threat. If it is deemed low, they thoroughly scrub and rinse their gear and tools at the scene. Higher levels of contamination require firefighters to seal turnout gear in heavy-duty bags. “We use our medical gloves so guys aren’t grabbing their stuff with their bare hands,” says career firefighter Kyle Smith, who helped create the decontamination protocols.

Containing truck contamination

Bags with dirty gear go in the back of a utility vehicle, in the open air, for the trip to the hall. Crews don painter’s suits with booties and hoods when they climb into the firetruck, further reducing the risk of cross-contamination. “I haven’t been in a truck that smelled like a house fire for years,” Smith says.

Containing hall contamination

Turnout gear stays in the bays only; it’s not allowed in offices or washrooms.

Two washing machines are available, each with a specific purpose. One is for uniforms and other items that haven’t been used at fire scenes. The second machine is reserved for dirty turnout gear, which is stored in a back garage until wash day. Crews wear masks and gloves to load the machine. The second machine is regularly cleaned by running it empty, to flush away any built-up contaminants.

Showering after every incident

This recommendation is especially important for volunteers, who may want to head home directly after a call-out. “We encourage them to wash and clean here so they’re not bringing that stuff into their houses,” Smith says.

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—Captain Bryan Erwin, Colwood Fire Rescue

Awareness helps overcome attitude

Raising awareness of the need for decontamination is a matter of education and training, says Colwood fire chief John Cassidy. Attitude also factors in: “It’s really about changing the culture and mindset of firefighters.”

Long-time veterans often take pride in having dirty gear and a dirty helmet, he says. They see it as a sign of doing a good job. Pointing out the risks of that outdated thinking is the first step in putting it to rest.

Another step, says Surrey’s Garis, is to be proactive. His department promotes a healthy workplace, advising its crews on nutrition, exercise, fitness, and personal wellness. It also gives firefighters a letter they can take to their physicians, explaining the need for early cancer screening. Garis recommends firefighters start screening 10 years earlier than they ordinarily would.

There’s one other important step, adds Colwood’s Erwin: Having firefighters follow decontamination procedures whether they are suppressing a fire or investigating one.

“Fire inspectors are exposed to just as many contaminants,” he notes. His department mandates that inspectors wear SCBA rather than P100 masks, and Level B suits or coveralls depending on the type of fire and structure.

For more information

- The Fraser Valley University study can be found at cjr.ufv.ca by searching for “determinants of injury and death in Canadian firefighters.”
- [Section 5.82](#) of the Occupational Health and Safety Regulation outlines the employer’s responsibility to provide effective means of removing hazardous substances from a worker’s skin or clothing.
- [Section 5.1](#) of the OHS Regulation defines hazardous substances and how they are designated. ☺



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