

EDUCATION TRAINING CONSULTING



CANCER AND THE FIREFIGHTER

MINIMUM ACTIONS TO TAKE

COMPILED BY: WILLIAM F. JENAWAY
PH.D., CFPS, CSP, CFO, CTO
VICE PRESIDENT VFIS

Cancer and the Firefighter

Minimum Actions to Take

When volunteers sign up to volunteer with their local fire and rescue services, the last thing on one's mind is the fact that they can be injured, contract an illness, lose time from work, or even die as a result of being a volunteer emergency responder. Yet, it happens and chief officers in today's emergency service organization have to be aware of the exposures, controls and protection methods to keep our responders as safe as possible to respond at the top of their game. When it comes to cancer though, it is a new issue to many chief officers – a topic they neither have training in, nor understand to a great degree. Firefighter cancer has come to be viewed as more impacting than any other safety issue we face.

The Hazard¹

Firefighter cancer is a looming personal catastrophe for each and every firefighter and their organization. Cancer is considered to be the most dangerous and unrecognized threat to the health and safety of our nation's firefighters. Multiple studies conducted by hospitals, institutions of higher learning, fire service agencies and NIOSH, have repeatedly demonstrated credible evidence and biologic creditability for statistically higher rates of multiple types of cancers in firefighters compared to the general American population including:

- Testicular cancer
- Multiple myeloma
- Non-Hodgkin's lymphoma
- Skin cancer
- Prostate cancer
- Malignant melanoma
- Brain cancer
- Colon cancer
- Leukemia
- Breast cancer in women

Controlling the Risk of Cancer

Risk control techniques widely used today include risk avoidance, loss prevention, loss reduction, segregation of exposure, and risk transfer. In the case of exposure to carcinogens, much of the general risk control practice centers upon avoiding the risk. Unfortunately an emergency responder is "rushing into the exposure area while others rush out". Therefore pre-planning as much as is possible provides critical information to understand before you enter a hostile environment, ripe with cancer causing agents. Once you enter the hot zone, the ability to

¹ Credits:

VFIS News "What is the Firefighter Cancer Problem"

VFIS News "Talking About Firefighter Cancer"

Firefighter Cancer Support Network resources www.fcsn.org

avoid the exposure is minimized as is prevention of exposure to the carcinogen. Therefore, **risk avoidance** is almost impossible if you are doing your job.

If it is necessary to enter, then education of personnel to recognize hazards is critical and all levels of personal protective equipment (PPE) must be used to protect any form of absorption, adsorption, inhalation, or ingestion. The various entry routes must be considered and protected to reduce the probability of any exposure to carcinogens.

Preventing exposure starts with understanding your own body. A physical exam to assure you are cancer free when starting the job is important to establish your personal baseline of health and monitor changes as you age and are exposed to various risks during your fire and EMS career. Physicals also assist with early detection of cancer and facilitate action to manage the cancer. In addition, for states with cancer presumption legislation, proving you were cancer free at one point in your career may be a component of proving cancer was contracted on the job. The same is true for documenting incident reports where any exposure to carcinogens may have occurred. Education is the next step, so that members can understand the types of cancers that can be contracted, what types of exposures may result in these cancers occurring, and what methods can be provided in order to prevent exposure or limit exposure. The Firefighter Cancer Support Network has developed 11 “Immediate Actions to Protect Yourself From Cancer.”

**WHAT IMMEDIATE ACTIONS
CAN I TAKE TO PROTECT MYSELF**

1. Use SCBA from initial attack to finish of overhaul. (Not wearing SCBA in both active and post fire environments is the most dangerous voluntary activity in the fire service today.
2. Perform gross field decontamination of PPE to remove as much soot and particulates as possible.
3. Use baby wipes to remove as much soot as possible from head, neck, jaw, throat, underarms and hands immediately and while still on the scene.
4. Change your clothes and wash them immediately after a fire.
5. Shower thoroughly after a fire.
6. Clean your PPE, gloves, hood, and helmet immediately after a fire.
7. Do not take contaminated clothes or PPE home or store it in your vehicle.
8. Decontaminate fire apparatus interior after fires.
9. Keep bunker gear out of living and sleeping quarters.
10. Stop using tobacco products.
11. Use sunscreen or sun block

Firefighter Cancer Support Network www.fcsn.org

Protecting members with PPE is a key form of **loss reduction**. While the PPE alone will not eliminate the exposure; knowing why it is used and using it properly will help prevent the

firefighter from being exposed to higher level of contaminants and related carcinogens. In addition, implementing and enforcing the performance of follow-up decontamination activities will help protect members from exposure.

In other workplaces and environments, isolating an area of hazard or separating the risk into smaller amounts (**segregating exposure**) may be beneficial to limiting risk. Segregating exposure is not possible when you enter a hostile environment because the environment is not controlled. Therefore, prevention, education and protection features play a dominant role in protecting personnel.

Also, while in some workplaces it may be feasible to **transfer risk**, the alternatives are limited in the fire and EMS community. The use of hazardous materials teams is a viable method to transfer operational risk for some situations. However, firefighting, vehicle related incidents, and exposure to vehicle exhaust in the station are unavoidable and necessitate an approach to prevention, education and protection of personnel. Financial risk can be transferred via insurance. Various insurance programs are now available to provide financial benefits for “critical illness” or “cancers” once members become affected. These programs vary in benefits and cost and require consultation with a qualified insurance professionals to determine applicability and value.

Finally, when someone is told that they have cancer, many thoughts will go through their mind, including; how do I tell my family, my friends, and my boss. Even before you begin treatment or surgery recommended by your physician, you will need to inform a few people what is happening to you. Some individuals will feel an urgent need to communicate, others will want to wait. In either scenario, people will inform others of their diagnosis when they are ready. In the fire service, we must be prepared to respond to and support those who contract cancer. You want to know what to do, as an officer, if someone came up to you and said – “Chief, I have cancer”? Demonstrating the leadership skills necessary to respond when someone advises you they have cancer helps everyone cope with the situation.

Cancer Presumption Law Impacts

On July 7, 2011, Act 46 of 2011 was signed into law in Pennsylvania. This law amended the Pennsylvania Workers Compensation Act providing a rebuttable presumption that cancers suffered by firefighters are related to the occupation of firefighting. If you do not have a copy of the law you are encouraged obtain a copy to fully understand the contents of the Act and the related requirement directed by the Act. Shortly after the Act was signed, PFESI released a statement which included the following:

The Firefighter Cancer Presumption Law will enable firefighters to receive workers compensation benefits if they develop cancer and can establish exposure to certain carcinogens at fire or hazmat incidents during their careers. The facts include:²

- The cancer presumption law applies to any cancer. Firefighters who have served four or more years will be entitled to a presumption that their cancer is job-related, similar to the

² PFESI, “Important Notice for PA Firefighters About New Cancer Law”, PFESI Harrisburg PA, 10-7-11.

process used when firefighters suffer from lung cancer, heart disease or more recently, Hepatitis C.

- Firefighter cancer claims may be brought on behalf of any active or retired, career or volunteer firefighter show he/she is being treated or has been treated for cancer, regardless of when their cancer was diagnosed or treated.
- The Cancer Presumption Law extends the period for filing claims to 600 weeks after separation from service. Firefighters who separated as long ago as January 2000 may be entitled to benefits.
- Firefighter cancer claims may also be brought on behalf of surviving family members of firefighters who died as a result of cancer. To qualify for benefits, surviving spouses or dependent children must file a claim within three years of the firefighter's death.
- Volunteer firefighters must participate in PennFIRS reporting to make a cancer claim and must have passed a physical exam before their service that did not reveal the presence of cancer.

The Act goes on to further state that “the cancer suffered by a firefighter which is caused by a known carcinogen which is recognized as a Group 1 carcinogen by the International Agency for Research on Cancer.”³ For those who do not know what Group 1 carcinogens are, they are listed in Appendix A.

There are a number of specifics within the Act that you are encouraged to review and fully understand, but two critically important conditions are:

1. The firefighter must have passed a physical exam before their service that did not reveal the presence of cancer.
2. Volunteer firefighters must participate in PennFIRS reporting to make a cancer claim;

Cancer Presumption Law Actions Required by Fire Departments

In the event a member is diagnosed with cancer and files a claim, the failure to have these two procedures in place will jeopardize the likelihood of success in demonstrating the cancer was job related.

The first item to discuss is:

The firefighter must have passed a physical exam before their service that did not reveal the presence of cancer.

This should begin before the member is even actively involved in fire service activities. The physician conducting the exam plays a critical role in helping to prevent the incidence of cancer and heart disease in firefighters. Firefighters face chronic exposure to smoke, vehicle exhaust, heat, and all of the contaminants within burning materials. These contaminants becomes inhaled, absorbed, adsorbed and ingested in the firefighters' body. In addition the failure to clean equipment and protective clothing creates a similar exposure. Thus an initial medical monitoring and annual follow-up exams are key factors to ensure personal safety and will provide the opportunity to diagnose any cancers or other developing health conditions.

³ House of Representatives, Commonwealth of Pennsylvania, “Workers Compensation Act – Cancer in the Occupation of Firefighters”, Act of July 7, 2011, P.L. 251, No. 46, Harrisburg, PA, 7-7-2011.

The Need for Emergency Responders to Have Physicals

Firefighters and emergency medical responder safety and health starts with knowing your level of personal health. This starts with a regular physical exam. No one disputes that fire and EMS personnel are exposed to hostile environments, hazardous situations, stressful situations, etc. That necessitates first responders being physically fit for duty.

Implementing such a program in your organization should include several specific components. While there is no model plan, these components appear to be consistent from program to program:

- Regular Health and Fitness Screening & Medical Evaluation
- A Fitness Program (that focuses on cardiovascular health, strength and flexibility training all to enhance physical fitness).
- Behavior Modification (finding ways to account or enable personnel to adopt healthy behavior or change bad behavior to more healthy activities will yield results as well and would help resolve items such as smoking, hypertension, diet, cholesterol, and diabetes).
- Education (such as reviewing this document)
- Records Management (each member should have a personal medical performance note – from each physical conducted - on file that they are physically fit to perform appropriate first responder duties)

In Pennsylvania, it is also important to have a document in each members' file stating the date of the initial physical and that the member is cancer free. Cancer presumption regulation suggests that anyone claiming they contracted cancer on the job (volunteer or career) must demonstrate they were at one period cancer free and that they were exposed to applicable carcinogens during their term of employment/membership.

The Firefighter Cancer Support Network and Last Call Foundation have developed a set of recommended Firefighter Physical Exam and Screening Tests⁴

Annual Exam Recommendations for Firefighters

- Blood pressure
- Pulse
- Respiratory Rate
- Temperature
- Oxygen Saturation
- Weight and body-fat index
- Thorough skin exam
- Eye exam and hearing testing
- Oral exam
- Heart and lung exam
- Abdominal and testicular exam
- Prostate and rectal exam
- Fecal occult blood testing

⁴ Hamrock, Michael G. MD, "Firefighter Cancer Awareness and Prevention Program", FCSN & LCF, 2017.

- Pelvic and Pap for females
- Vascular and neurological exams
- Mental status exam
- Musculoskeletal exam

Annual Lab and Screening Tests

- Comprehensive metabolic and chemistry panel
- Liver function tests
- Hepatitis profile
- Complete blood county
- Thyroid panel
- Hemoglobin A 1 c (for diabetes monitoring)
- Fasting lipid profile and blood glucose
- Urinalysis and urine biomarkers
- EKG
- PSA (beginning at age 40 for prostate cancer)
- Pulmonary function test every three years
- Low-dose helical chest CT scanning (begin at age 50)
- Colonoscopy (begin at age 40 and every five years thereafter)
- Exercise stress echocardiogram test (begin at age 40 and every three years thereafter)
- Mammograms for females (begin at age 35)

The second item to discuss is:

Volunteer firefighters must participate in PennFIRS reporting.

This is simple, or at least it should be. Document your incidents and report the incidents in to the PennFIRS system. If you do not have the software program to accomplish this, then obtain it and use it. Document who responded to the call, the nature of the call and the exposures to any materials as indicated in the carcinogen list and the types of locations or occupancies that the carcinogen can be found in. Also, indicate if members were exposed to diesel exhaust at any time. This information helps document that the person(s) were exposed to smoke, fumes, etc. and the nature of activity at the occupancy or within the vehicle on fire. Record as much as you can. It is better to over document on this situation.

Today

Pennsylvania Act 46 of 2011 provides a rebuttable presumption that cancer suffered by firefighters is related to the occupation of firefighting – volunteer or paid.

Through the first six years since signing the Act into law, “one hundred fifty nine (159) firefighters or their widows, or dependents, filed two hundred sixty-one (261) petitions, of which one hundred forty-two (142) were claim petitions and forty six (46) fatal claim petitions with the Workers Compensation Office of Adjudication. Of those claim petitions and fatal petitions filed, 144 were for injury dates prior to July 7, 2011, 45 were for injury dates after July 7, 2011. Workers Compensation judges granted 23 claim petitions and 9 fatal claim petitions, resulting in

awards for the claimant. Of all claimants who filed, 131 were related to claims from paid firefighters, 19 for volunteer fire companies and nine (9) for companies with both volunteer and paid firefighters. The claimant age at the time of filing is frequently higher for the 56-65 age group (43%) than the next closest age brackets of over 65 (19%) and 46-55 years of age (18%).⁵

Taking It Home

Do not attempt to research this issue and develop a program by yourself. It is a daunting task and you can learn extensively about this subject from

- Your physician,
- The American Cancer Society, and
- The Firefighter Cancer Support Network.

All three have resources to help firefighters and their families cope with cancer; from diagnosis to treatment to recovery. Peer-support members can also play a critical role in working through the process. Remember: “Understanding how to respond when someone advises you they have cancer helps everyone cope with the situation.”

We are just beginning to understand the horrific magnitude of the problem, the depth of our naiveté, the challenges involved and the changes required in education, training, operations, medical screenings and personal accountability to effectively address cancer in the fire service.

The Firefighter Cancer Support Network has been extremely proactive in developing prevention programs, communication tools, and response efforts. You are encouraged to contact them for additional details.



⁵ Act 46 Report -2017, M.H. Vovakes, Deputy Secretary for Compensation and Insurance, Commonwealth of Pennsylvania.

APPENDIX A

Group 1 Carcinogens⁶

Substances

- 2-Naphthylamine
- Acetaldehyde (associated with consumption of alcoholic beverages)
- 4-Aminobiphenyl
- Aflatoxins
- Aristolochic acids, (and plants containing them)
- Arsenic and inorganic arsenic compounds¹
- Asbestos
- Azathioprine
- Benzene
- Benzidine, and dyes metabolized to
- Benzo[*a*]pyrene
- Beryllium and beryllium compounds²
- Chlornapazine (*N,N*-Bis(2-chloroethyl)-2-naphthylamine)
- Bis(chloromethyl)ether
- Chloromethyl methyl ether
- 1,3-Butadiene 1,4-Butanediol dimethanesulfonate (Busulphan, Myleran)
- Cadmium and cadmium compounds²
- Chlorambucil
- Methyl-CCNU (1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea; Semustine)
- Chromium(VI) compounds
- Ciclosporin
- *Clonorchis sinensis* (infection with)
- Cyclophosphamide
- 1,2-Dichloropropane
- Diethylstilboestrol
- Epstein-Barr virus
- Estrogen therapy, postmenopausal
- Ethanol in alcoholic beverages
- Erionite
- Ethylene oxide
- Etoposide alone, and in combination with cisplatin and bleomycin
- Fluoro-edenite fibrous amphibole
- Formaldehyde
- Gallium arsenide
- *Helicobacter pylori* (infection with)
- Hepatitis B virus (chronic infection with)
- Hepatitis C virus (chronic infection with)
- Human herpesvirus 8 (Kaposi sarcoma-associated herpesvirus)

⁶ Wikipedia, "Class 1 Carcinogens", https://en.wikipedia.org/wiki/List_of_IARC_Group_1_carcinogens

- Human immunodeficiency virus type 1 (infection with)
- Human papillomavirus type 16, 18, 31, 33, 35, 39, 45, 51, 52, 56, 58, 59 and 66
- Human T-cell lymphotropic virus type 1 (HTLV-I)
- Lindane
- Melphalan
- Methoxsalen (8-Methoxypsoralen) plus ultraviolet A radiation
- 4,4'-Methylenebis(2-chloroaniline) (MOCA)
- MOPP and other combined chemotherapy including alkylating agents
- Mustard gas (Sulfur mustard)
- 2-Naphthylamine
- Neutron radiation
- Nickel compounds²
- 4-(*N*-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone (NNK)
- *N*-Nitrosornicotine (NNN)
- *Opisthorchis viverrini* (infection with)
- Outdoor air pollution
- Particulate matter in outdoor air pollution
- 2,3,4,7,8-Pentachlorodibenzofuran
- 3,4,5,3',4'-Pentachlorobiphenyl(PCB-126)
- Phosphorus-32, as phosphate
- Plutonium
- Radioiodines, short-lived isotopes, including iodine-131, from atomic reactor accidents and nuclear weapons detonation (exposure during childhood)
- Radionuclides, α -particle-emitting, internally deposited
- Radionuclides, β -particle-emitting, internally deposited
- Radium-224 and its decay products
- Radium-226 and its decay products
- Radium-228 and its decay products
- Radon-222 and its decay products
- *Schistosoma haematobium* (infection with)
- Silica dust, crystalline (inhaled in the form of quartz or cristobalite from occupational sources)
- Talc containing asbestiform fibres
- Tamoxifen⁶
- 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin (TCDD)
- Thiotepe (1,1',1''-Phosphinothioylidynetrisaziridine)
- Thorium-232 and its decay products, administered intravenously as a colloidal dispersion of thorium-232 dioxide
- Treosulfan
- Trichloroethylene
- *o*-Toluidine
- Vinyl chloride

Radiations

- Ionizing radiation (all types)

- Ultraviolet radiation including solar radiation
- X-Radiation and gamma radiation

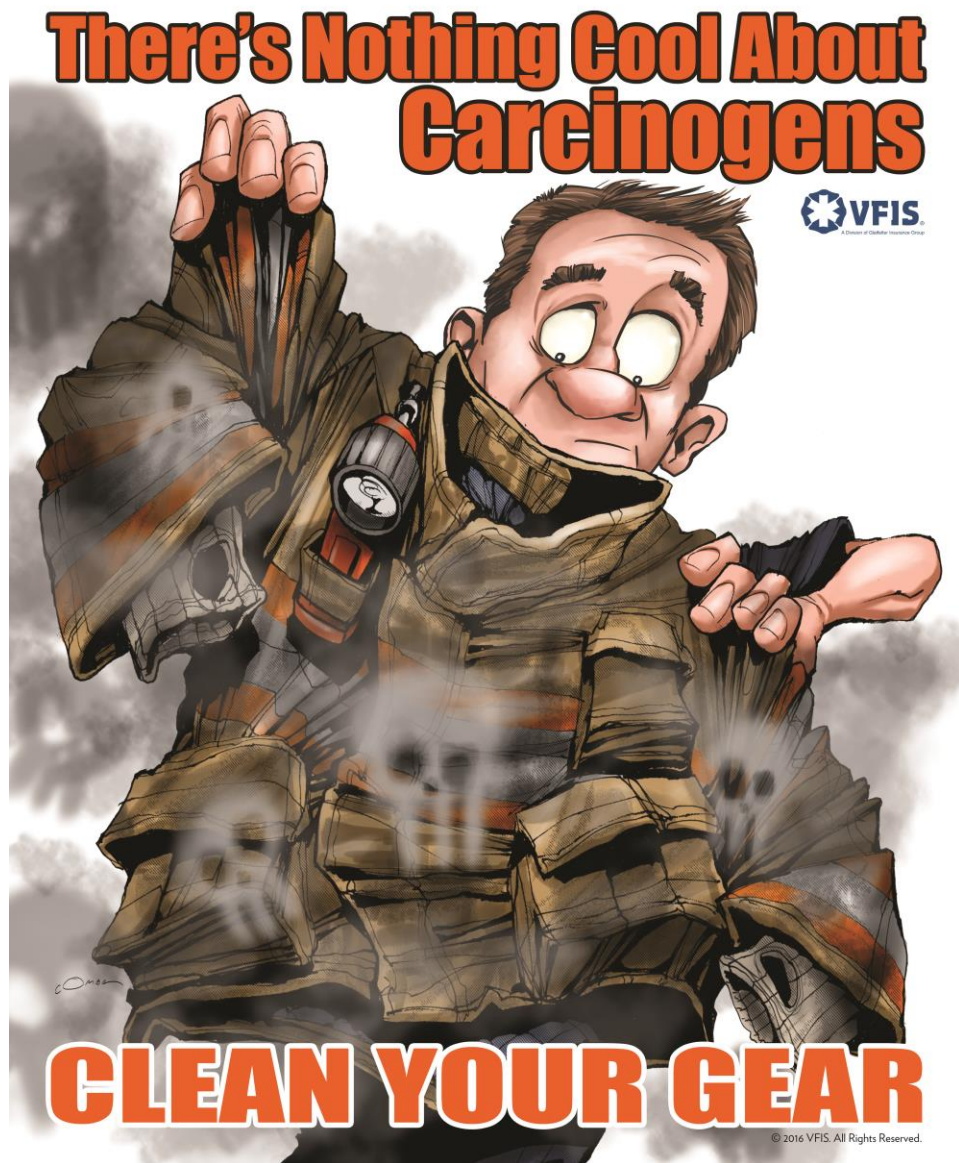
Mixtures

- Aflatoxins (naturally occurring mixtures of)
- Alcoholic beverages
- Areca nut
- Betel quid with tobacco
- Betel quid without tobacco
- Coal-tar pitches
- Coal-tars
- Coal, indoor emissions from household combustion of
- Engine exhaust, diesel
- Estrogen-progestogen menopausal therapy, (combined)
- Estrogen-progestogen oral contraceptives (combined)
- Fission products, including Strontium-90
- Leather dust
- Mineral oils, untreated and mildly treated
- Paints containing benzene
- Phenacetin, analgesic mixtures containing
- Plants containing aristolochic acid
- Polychlorinated biphenyls, dioxin-like
- Processed meats, consumption of^{f31}
- Salted fish (Chinese-style)
- Shale-oils
- Soot (as found in occupational exposure of chimney sweeps)
- Wood dust

Exposure circumstances (occupancies where firefighters may be exposed)

- Acheson process, occupational exposure associated with
- Acid mists, strong inorganic
- Aluminium production
- Auramine production
- Boot and shoe manufacture and repair (see leather Dust and benzene)
- Chimney sweeping (see Soot)
- Coal gasification
- Coal tar distillation
- Coke (fuel) production
- Processed meats
- Furniture and cabinet making (see wood dust)
- Haematite mining (underground) with exposure to radon
- Iron and steel founding (occupational exposure to)
- Isopropanol manufacture (strong-acid process)
- Glass, making of

- Magenta dyes, manufacture of
- Painting (see benzene)
- Paving and roofing with coal tar pitch
- Rubber manufacturing industry
- Sandblasting (see silica dust)
- Smokeless tobacco
- Tobacco smoke, second hand
- Tobacco smoking
- Ultraviolet-emitting tanning devices



APPENDIX B-1

Volunteer Medical Clearance⁷

(Please refer to "Physicians' Guidance Regarding Medical Clearance as a Fire Rescue Volunteer")

Name: _____

To be completed by physician's office:

Date of Examination: _____

Date of Payment: _____ Amount of Payment: \$ _____

I have reviewed the "Physicians' Guidance Regarding Medical Clearance as a Fire Rescue Volunteer." I have examined the above individual, reviewed his/her medical history, and make the following recommendations for his/her participation as a volunteer with _____.

- Full Participation
- No Participation
- Limited Participation
- Additional Evaluation Required

If not full participation, please provide limitations: _____

Physician's Signature

Date

Physician Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Telephone: _____ Please send additional information on NFPA 1582

To be completed by volunteer applicant:

I am requesting reimbursement for the examination noted above. I understand reimbursement will be paid for the amount of my insurance co-pay or out-of-pocket expense up to a maximum of \$_____.

Signature of Individual _____ Date _____

NOTE: THIS FORM IS AN EXAMPLE. THE ACTUAL CRITERIA YOU USE SHOULD BE DEVELOPED BY YOUR DEPARTMENT/COMPANY MEDICAL DIRECTOR.

⁷ Credit for format and special thanks to Albemarle County Fire-Rescue Department, Charlottesville, Virginia

APPENDIX B-2

Volunteer Medical Clearance – Cancer Statement

(Please refer to "Physicians' Guidance Regarding Medical Clearance as a Fire Rescue Volunteer")

Name: _____

To be completed by physician's office:

Date of Examination: _____

Date of Payment: _____ Amount of Payment: \$ _____

I have reviewed the "Physicians' Guidance Regarding Medical Clearance as a Fire Rescue Volunteer." I have examined the above individual, and reviewed his/her medical history

Medical Screening Included Cancer Screening Tests

Medical Screening Did NOT Include Cancer Screening Tests

As a result of these screenings, I make the following recommendations for his/her participation as a volunteer with _____.

Full Participation

No Participation

Limited Participation

Additional Evaluation Required

If not full participation, please provide limitations: _____

Physician's Signature

Date

Physician Name: _____

Address: _____

City: _____ State: _____ ZIP Code: _____

Telephone: _____ Please send additional information on NFPA 1582

To be completed by volunteer applicant:

I am requesting reimbursement for the examination noted above. I understand reimbursement will be paid for the amount of my insurance co-pay or out-of-pocket expense up to a maximum of \$_____.

Signature of Individual _____ Date _____

NOTE: THIS FORM IS AN EXAMPLE. THE ACTUAL CRITERIA YOU USE SHOULD BE DEVELOPED BY YOUR DEPARTMENT/COMPANY MEDICAL DIRECTOR.

APPENDIX C

Physicians' Guidance Regarding

Medical Clearance as a Fire-Rescue Volunteer⁸

NOTE:

THIS IS AN EXAMPLE TAKEN FROM RESPONSIBLE SOURCES. THE ACTUAL CRITERIA YOU USE SHOULD BE DEVELOPED BY YOUR DEPARTMENT/COMPANY MEDICAL DIRECTOR.

Firefighting and emergency medical response remain the most dangerous occupations in the United States. Research has repeatedly shown the need for high levels of fitness to perform safely in the fire rescue service. The individual's long hours, shift work, sporadic high intensity work, strong emotional involvement, and exposure to human suffering places the job among the most stressful occupations in the world. High levels of stress, intense physical demands, and long term exposure to chemicals and infectious disease contribute to heart disease, lung disease, and cancer – the three leading causes of death and occupational disease disability.

This information is provided as a courtesy to physicians who may be asked to complete a physical for a potential volunteer firefighter or emergency medical technician. This information is based on the National Fire Protection Association (NFPA) Standard 1582: Standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 Edition. The department will be happy to provide a complete copy of the Standard if requested. Please e-mail wellness@ACFireRescue.org to request a complete copy of NFPA 1582.

Essential Job Functions

5.1.1 The fire department shall evaluate the following 13 essential job tasks against the types and levels of emergency services provided to the local community by the fire department, the types of structures and occupancies comprising the community, and the configuration of the fire department to determine the essential job tasks of fire department members and candidates:

- 1) *Performing fire-fighting tasks (e.g., hose line operations, extensive crawling, lifting and carrying heavy objects, ventilating roofs or walls using power or hand tools, forcible entry), rescue operations, and other emergency response actions under stressful conditions while wearing personal protective ensembles and self-contained breathing apparatus (SCBA), including working in extremely hot or cold environments for prolonged time periods
- 2) Wearing an SCBA, which includes a demand valve–type positive-pressure face piece or HEPA filter masks, which requires the ability to tolerate increased respiratory workloads

⁸ References for this include:

- National Fire Protection Association Standard 1582: standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 edition.
- Albemarle County Department of Fire Rescue, Charlottesville, Virginia

- 3) Exposure to toxic fumes, irritants, particulates, biological (infectious) and non-biological hazards, and/or heated gases, despite the use of personal protective ensembles and SCBA
- 4) Depending on the local jurisdiction, climbing six or more flights of stairs while wearing fire protective ensemble weighing at least 50 lb. (22.6 kg) or more and carrying equipment/tools weighing an additional 20 to 40 lb. (9 to 18 kg)
- 5) Wearing fire protective ensemble that is encapsulating and insulated, which will result in significant fluid loss that frequently progresses to clinical dehydration and can elevate core temperature to levels exceeding 102.2°F (39°C)
- 6) Searching, finding, and rescue-dragging or carrying victims ranging from newborns up to adults weighing over 200 lb (90 kg) to safety despite hazardous conditions and low visibility
- 7) Advancing water-filled hose lines up to 2 1/2 in. (65 mm) in diameter from fire apparatus to occupancy [approximately 150 ft. (50 m)], which can involve negotiating multiple flights of stairs, ladders, and other obstacles
- 8) Climbing ladders, operating from heights, walking or crawling in the dark along narrow and uneven surfaces, and operating in proximity to electrical power lines and/or other hazards
- 9) Unpredictable emergency requirements for prolonged periods of extreme physical exertion without benefit of warm-up, scheduled rest periods, meals, access to medication(s), or hydration
- 10) Operating fire apparatus or other vehicles in an emergency mode with emergency lights and sirens
- 11) Critical, time-sensitive, complex problem solving during physical exertion in stressful, hazardous environments, including hot, dark, tightly enclosed spaces, that is further aggravated by fatigue, flashing lights, sirens, and other distractions
- 12) Ability to communicate (give and comprehend verbal orders) while wearing personal protective ensembles and SCBA under conditions of high background noise, poor visibility, and drenching from hose lines and/or fixed protection systems (sprinklers)
- 13) Functioning as an integral component of a team, where sudden incapacitation of a member can result in mission failure or in risk of injury or death to civilians or other team members

5.1.2 The fire department physician shall consider the physical, physiological, intellectual, and psychological demands of the occupation when evaluating the candidate's or member's ability to perform the essential job tasks.

5.1.3 Medical requirements for candidates and members shall be correlated with the essential job tasks as determined by 5.1.1.

5.1.4 The fire department shall provide the fire department physician with the list of essential job tasks to be used in the medical evaluation of members and candidates.

Medical Evaluation

6.1. A medical evaluation of a candidate shall be conducted prior to the candidate being placed in training programs or fire department emergency response activities.

6.1.1 * The medical evaluation of a candidate shall include a medical history, examination, and any laboratory tests required to detect physical or medical condition(s) that could adversely affect his/her ability to safely perform the essential job tasks outlined in 5.1.1.

6.1.2 If a candidate presents with a condition that temporarily interferes with his/her ability to safely perform essential job tasks, the pre- placement medical evaluation shall be postponed until the candidate has recovered from that condition.

Medical Exam Components Provided by the Department's Occupational Healthcare Provider for Pre-Employment and Annual Career Physicals

1. Health Questionnaire and OSHA Respiratory Questionnaire
2. Drug Screening (pre-employment only)
3. Immunizations
 - Screening for protection against Hepatitis-A, Hepatitis-B, Hepatitis-C, polio, HIV, measles, mumps, rubella, tuberculosis, tetanus/diphtheria, and chicken pox (Varicella) will be performed for all pre-employment exams. These screenings and needed boosters/titers will be conducted and administered as needed.
 - Influenza vaccinations are provided annually.
4. Hands-On Physical
 - Vital Signs
 - Blood Pressure
 - Pulse
 - Respiratory Rate
 - Temperature
 - Height/Weight

Hands-On Physical (continued)

- Head, Eyes, Ears, Nose, & Throat
 - Vision Screening
 - Color Assessment
 - Distance Assessment
 - Near-Vision Assessment
 - Audiology Screening
 - Hearing Test (500-1000-2000-3000-4000-6000-8000Hz)
- Neck
 - General Evaluation
- Cardiovascular
 - Chest X-Ray
 - EKG
- Pulmonary
 - Pulmonary Function Test (Spirometry)
- Gastrointestinal
 - General Evaluation
- Genitourinary

- Men: Testicular & Hernia Evaluation*
 - Evaluation & Prostate-Specific Antigen (PSA) tests required for all males
- Women: Pap-Smear, Clinical Breast Exam, Mammography*
 - Required for all females
- Rectal
 - Digital Rectal Exam*
 - Fecal Occult Blood Testing*
- Lymph Nodes
- Neurological
 - Mental Status Exam
 - Cranial & Peripheral Nerves
 - Motor
 - Sensory
 - Reflexes
- Musculoskeletal
 - General Range-of-Motion Evaluation
- Skin Exam
 - Cancer Screening
- Body Composition**
- Additional Components for Hazardous Materials Team Members and/or Technicians:
 - Acetylcholinesterase Screening
- 5. Laboratory Testing: Urinalysis, Complete Blood Count, Chemistry Metabolic, Lipid Profile (all).
- 6. **The blood analysis or urinalysis is not intended and will not be used for drug use screening at any time.**
 - White Blood Cell Count with differential
 - Red Blood Cell Count (hematocrit)
 - Platelet Count
 - Liver Function Test
 - Triglycerides
 - Glucose
 - Blood Urea Nitrogen
 - Creatinine
 - Sodium
 - Potassium
 - Carbon Dioxide
 - Total Protein
 - Albumin
 - Calcium
 - Cholesterol
 - Heavy Metal & Special Exposure Screening
- ❖ Aerobic/Cardiopulmonary Testing (Stress Test)
 - Required for at-risk individuals and individuals over age 40.
- ❖ Follow-Up/Referral

- Annual physical exam results will be forwarded to you and/or your primary care provider (PCP).
 - You will complete a HIPAA Release in order to release the results to you and/or your PCP.
- ❖ Data Collection
- The HIPAA Release will also authorize the release of some medical component data points for data collection and reporting. The data will not have any identifiers (name, date of birth, Social Security Number, etc.); the data will only be raw data used for research and data reporting.
 - Date of Exam
 - Medical and Family Medical History
 - Alcohol Use
 - Vital Signs
 - Height/Weight
 - Body Composition**
 - Blood Analysis/Urinalysis Results
 - Vision
 - Hearing
 - Spirometry
 - Chest X-Ray
 - EKG
 - Cancer Screening Results
 - Immunizations

*Individual may opt out of this element provided his/her PCP conducts this element as part of an annual exam.

The results of the exam must be forwarded to the Occupational Healthcare Provider.



APPENDIX D
Pennsylvania Act 46 of 2011
Workers' Compensation Act
Cancer in the Occupation of Fire Fighter⁹

WORKERS' COMPENSATION ACT - CANCER IN THE OCCUPATION OF FIREFIGHTER

Act of Jul. 7, 2011, P.L. 251, No. 46

Cl. 77

Session of 2011

No. 2011-46

HB 797

AN ACT

Amending the act of June 2, 1915 (P.L.736, No.338), entitled, as reenacted and amended, "An act defining the liability of an employer to pay damages for injuries received by an employe in the course of employment; establishing an elective schedule of compensation; providing procedure for the determination of liability and compensation thereunder; and prescribing penalties," further defining "occupational disease"; and providing for cancer in the occupation of firefighter.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. Section 108 of the act of June 2, 1915 (P.L.736, No.338), known as the Workers' Compensation Act, reenacted and amended June 21, 1939 (P.L.520, No.281), is amended by adding a clause to read:

Section 108. The term "occupational disease," as used in this act, shall mean only the following diseases.

* * *

(r) Cancer suffered by a firefighter which is caused by exposure to a known carcinogen which is recognized as a Group 1 carcinogen by the International Agency for Research on Cancer.

Section 2. Section 301(c) of the act, amended December 5, 1974 (P.L.782, No.263) and July 2, 1993 (P.L.190, No.44), is amended and the section is amended by adding a subsection to read:

Section 301. * * *

(c) (1) The terms "injury" and "personal injury," as used in this act, shall be construed to mean an injury to an employe, regardless of his previous physical condition, **except as provided under subsection (f)**, arising in the course of his employment and related thereto, and such disease or infection as naturally results from the injury or is aggravated, reactivated or accelerated by the injury; and wherever death is mentioned as a cause for compensation under this act, it shall mean only death resulting from such

⁹ Session of 2011 Legislature of the Commonwealth of Pennsylvania.

<http://www.legis.state.pa.us/WU01/LI/LI/US/HTM/2011/0/0046..HTM?58>

injury and its resultant effects, and occurring within three hundred weeks after the injury. The term "injury arising in the course of his employment," as used in this article, shall not include an injury caused by an act of a third person intended to injure the employe because of reasons personal to him, and not directed against him as an employe or because of his employment; nor shall it include injuries sustained while the employe is operating a motor vehicle provided by the employer if the employe is not otherwise in the course of employment at the time of injury; but shall include all other injuries sustained while the employe is actually engaged in the furtherance of the business or affairs of the employer, whether upon the employer's premises or elsewhere, and shall include all injuries caused by the condition of the premises or by the operation of the employer's business or affairs thereon, sustained by the employe, who, though not so engaged, is injured upon the premises occupied by or under the control of the employer, or upon which the employer's business or affairs are being carried on, the employe's presence thereon being required by the nature of his employment.

(2) The terms "injury," "personal injury," and "injury arising in the course of his employment," as used in this act, shall include, unless the context clearly requires otherwise, occupational disease as defined in section 108 of this act: Provided, That whenever occupational disease is the basis for compensation, for disability or death under this act, it shall apply only to disability or death resulting from such disease and occurring within three hundred weeks after the last date of employment in an occupation or industry to which he was exposed to hazards of such disease: And provided further, That if the employe's compensable disability has occurred within such period, his subsequent death as a result of the disease shall likewise be compensable. The provisions of this paragraph (2) shall apply only with respect to the disability or death of an employe which results in whole or in part from the employe's exposure to the hazard of occupational disease after June 30, 1973 in employment covered by The Pennsylvania Workmen's Compensation Act. The employer liable for compensation provided by section 305.1 or section 108, subsections (k), (l), (m), (o), (p) [or], (q) **or (r)**, shall be the employer in whose employment the employe was last exposed for a period of not less than one year to the hazard of the occupational disease claimed. In the event the employe did not work in an exposure at least one year for any employer during the three hundred week period prior to disability or death, the employer liable for the compensation shall be that employer giving the longest period of employment in which the employe was exposed to the hazards of the disease claimed.

* * *

(f) Compensation pursuant to cancer suffered by a firefighter shall only be to those firefighters who have served four or more years in continuous firefighting duties, who can establish direct exposure to a carcinogen referred to in section 108(r) relating to cancer by a firefighter and have successfully passed a physical examination prior to asserting a claim under this subsection or prior to engaging in firefighting duties and the examination failed to reveal any evidence of the condition of cancer. The presumption of this subsection may be rebutted by substantial competent evidence that shows that the firefighter's cancer was not caused by the occupation of firefighting. Any claim made by a member of a volunteer fire company shall be based on evidence of direct exposure to a carcinogen referred to in section 108(r) as documented by reports filed pursuant to the Pennsylvania Fire Information Reporting System and provided that the member's claim is based on direct exposure to a carcinogen referred to in section 108(r). Notwithstanding the limitation under subsection (c) (2) with respect

to disability or death resulting from an occupational disease having to occur within three hundred weeks after the last date of employment in an occupation or industry to which a claimant was exposed to the hazards of disease, claims filed pursuant to cancer suffered by the firefighter under section 108(r) may be made within six hundred weeks after the last date of employment in an occupation or industry to which a claimant was exposed to the hazards of disease. The presumption provided for under this subsection shall only apply to claims made within the first three hundred weeks.

Section 3. The Department of Labor and Industry shall submit data on the amount of successful claims processed under section 301(f) to the chairman and minority chairman of the Labor and Industry Committee of the Senate and to the chairman and minority chairman of the Labor and Industry Committee of the House of Representatives two years following the adoption of this act and every two years thereafter.

Section 4. The provisions of this act shall apply to claims filed on or after the effective date of this section.

Section 5. This act shall take effect immediately.

APPROVED--The 7th day of July, A.D. 2011.

TOM CORBETT

Credits and Acknowledgements:

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VFIS News “Talking About Firefighter Cancer”

Firefighter Cancer Support Network resources www.fcsn.org

PFESI, “Important Notice for PA Firefighters About New Cancer Law”, PFESI Harrisburg PA, 10-7-11.

Act 46 Report -2017, M.H. Vovakes, Deputy Secretary for Compensation and Insurance, Commonwealth of Pennsylvania.

“Class 1 Carcinogens”, https://en.wikipedia.org/wiki/List_of_IARC_Group_1_carcinogens

Albemarle County Fire-Rescue Department, Charlottesville, Virginia

National Fire Protection Association Standard 1582: standard on Comprehensive Occupational Medical Program for Fire Departments, 2007 edition/ Albemarle County Fire-Rescue Department, Charlottesville, Virginia

Session of 2011 Legislature of the Commonwealth of Pennsylvania.

<http://www.legis.state.pa.us/WU01/LI/LI/US/HTM/2011/0/0046..HTM?58>



**183 Leader Heights Road
P.O. Box 2726
York, PA 17405
1-800-233-1957
www.vfis.com**