

Richard A. Mathews, CPCU, ARM  
10069 Oakridge Drive  
Wexford, PA 15090  
Home: (724) 935-4875  
Email: [mmathews@consolidated.net](mailto:mmathews@consolidated.net)

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*Ref: Testimony to House Veterans Affairs and Emergency Preparedness  
Committee and House Labor and Industry Committee Joint Public Hearing on the  
Implementation of Act 46 of 2011 (Cancer Presumption)*

Respected Chairman Barrar and honorable members of the Joint Committee:

I deeply appreciate the privilege of testifying today for the purpose of presenting amending enabling language to partially mitigate the unintended consequences of Act 46 of 2011 (Cancer Presumption.)

Respecting the Committee's time and its significant knowledge of Act 46 of 2011's unintended consequences; default of VFD coverage to SWIF, rapid increase in Workers' Compensation premium for VFD and other actions of concern, I will not dwell on past actions which have created unanticipated liabilities.

Yet as a CPCU, Chartered Property Casualty Underwriter, I am bound by our professional canons, to present to this committee amending language to the Cancer Presumption amendments of 2011 which can mitigate its unintended consequences while preserving intended coverage expansion.

Fortunately, the wisdom of the legislature in developing the 2011 Act 46 Cancer Amendments opens up viable enabling language which would fulfill its intent while reducing unintended liabilities due to the tail coverage enacted. The fact the World Health Association's International Agency of Research on Cancer is sourced in the 2011 Act 46 amendment supports the following proposed amendment,

- 1) Section 108 replace, " following diseases," with "testicular cancer, prostatic cancer, non-Hodgkin lymphoma and cancers of the respiratory system as defined by World Health Organizations International Agency for Research on Cancer in their paper 10-2-2007 IARC Monographs on the Evaluation of Carcinogenic Risk to Humans as the only statically noted cancers with a high causation correlation from fire fighting exposures.

Recent amendments of other State's amending language of their Workers' Compensation Cancer Presumption legislation supports the committee's

consideration to follow the action's of the 2013 session of Idaho legislature.

2) Replace in 2011 Act 46 legislation Section 301(2), "four or more years," requirement for exposures to similar exposure terms of the 2013 Idaho W.C. legislation specifically 72-438 subsections (14) (a)

(v) - Non-Hodgkin's lymphoma after fifteen (15) years of exposure  
(viii) - Testicular cancer after five (5) year exposure if diagnosed before the age of forty (40) years with no evidence of anabolic steroid or human growth hormone use.

(x) - Esophageal cancer after ten (10) years exposure.

Lastly, to mitigate the medical expense of the Act's "tail coverage," it is suggested for the committees consider an amendment which would stipulate,

- 2) "only claimant's unpaid tail covered medical expenses can be recovered."

This amendment would preclude the unintended consequence that claimants are being liened by their Health Care providers for the purpose of subrogation recovery from Workers' Comp. providers.

In closing, few deny the intended extension of Cancer Presumption benefits to the Commonwealth's Paid and Volunteer Firemen represented outstanding bi-partisan cooperation representing decades of intelligent discourse in achieving this historic legislation.

I hope I have addressed to the Committee's satisfaction fiscally and politically acceptable enabling amendments which will partially mitigate the Act's unintended consequences. Limiting types of cancers covered while establishing unique terms of exposure mandated to develop a presumed occupational disease filing and limiting medical expense recovery for, "tail related" claims filings will have a major impact on future Worker's Compensation premiums.

The legislature can fulfil the intent of the 2011 Act 46 amendments and mitigate many of its unintended consequences.

Respectfully in common cause,

Richard A. Mathews, CPCU, ARM

**WORLD HEALTH ORGANIZATION  
INTERNATIONAL AGENCY FOR RESEARCH ON CANCER**



***IARC Monographs on the Evaluation of  
Carcinogenic Risks to Humans***

**VOLUME 98**

**Painting, Firefighting, and  
Shiftwork**

**This publication represents the views and expert opinions  
of an IARC Monographs Working Group on the  
Evaluation of Carcinogenic Risks to Humans,  
which met in Lyon,**

**2–9 October 2007**

**2010**

## 5. Summary of Data Reported

### 5.1 Exposure data

Several types of firefighters exist, including municipal, wildland, industrial, aviation, and military firefighters. Municipal firefighters may be assigned to combat firefighting units only or to unexposed activities such as fire prevention or technical support. Firefighters may also be fire-scene investigators who are exposed during fires or shortly following a fire. Many firefighters work in shifts (see the monograph in this Volume).

Both municipal and wildland firefighting involve two phases: in an initial phase (knockdown and attack, respectively), the fire is extinguished; in a second phase (overhaul and mop-up, respectively), small fires and hot-spots are extinguished.

All fires generate an enormous number of toxic combustion products, including known and possible carcinogens, long-lived free radicals, and particulate matter. Smoke particles may serve as vehicles for adsorbed volatile organic compounds. Peak exposures to some carcinogens may be very high, notably for benzene, 1,3-butadiene, and formaldehyde. The concentrations of respirable particulate matter to which firefighters may be exposed during overhaul can reach  $50 \text{ mg/m}^3$ , or up to  $1000 \text{ mg/m}^3$ , and above in the case of coarser particles. Exposures of firefighters to volatile organic vapours have generally been in the low parts-per-million range.

Firefighters may be exposed at different levels depending on crew assignment, tasks and/or the time spent at fires. Wildland firefighters appear to spend more time at fires during a fire season than municipal firefighters spend during an entire year. In municipal firefighting, overhaul also involves pulling down ceilings and walls, which may entail exposures to substances other than combustion products. Both municipal and wildland firefighters engage in heavy work levels when combating fires, and the increased respiration rate results in an increase in absorbed dose. In recent decades, very effective respiratory protection equipment has been made available to municipal firefighters. In most jurisdictions, wildland firefighters generally do not use respiratory protection.

### 5.2 Human carcinogenicity data

The Working Group reviewed 42 studies of cancer in firefighters that included 19 cohorts, 11 case-control studies, and 14 studies that used other designs. The studies that were most relevant to the assessment of the risk for cancer among firefighters were the larger historical cohort studies.

Elevated relative risks for cancer at many different sites were identified by one or more studies, but few were observed consistently. A recent meta-analysis evaluated 32 studies and found that the risk for cancer in firefighters was significantly elevated for ten sites, four of which showed the strongest evidence of an association. Since that analysis, two more large epidemiological studies of cancer in firefighters have been

reported. Therefore, another meta-analysis that included these two studies was performed by the Working Group for the four primary cancer sites. Three types of cancer showed significant summary risk estimates: the incidence of testicular cancer was ~50% in excess based on six studies and approximately 150 cases, that of prostatic cancer was ~30% in excess based on 17 studies and approximately 1800 cases, and that of non-Hodgkin lymphoma was ~20% in excess based on seven studies and more than 300 cases.

Four cohort studies that investigated testicular cancer in firefighters yielded risk estimates that ranged from 1.2 to 2.5 and one case-control study gave odds ratios that ranged from 1.5 to 4.3. One of three studies found a positive trend between duration of exposure and the increased risk for testicular cancer.

Of 20 studies of prostatic cancer, 17 reported elevated risk estimates that ranged from 1.1 to 3.3; however, only two reached statistical significance and only one study showed a trend with duration of employment.

The studies that investigated non-Hodgkin lymphoma in firefighters used different definitions of this tumour. Five cohort and one case-control studies that evaluated non-Hodgkin lymphoma reported risk estimates that ranged from 0.9 to 2.0. Only one study evaluated exposure-response with duration and did not find a positive relationship.

Although firefighters are exposed concurrently to a multitude of chemical compounds that include numerous carcinogens, human epidemiological studies at best used indirect (poor) measurements of exposure to such agents. Also, exposures of firefighters vary considerably depending on their job activities, and only crude measures of exposure, such as duration of employment and number of runs, have been used in these studies. Despite these limitations, increased risks for some cancers were found for firefighters in the meta-analysis.

### **5.3 Animal carcinogenicity data**

No data were available to the Working Group.

### **5.4 Other relevant data**

Smoke is a complex mixture of suspended particulate matter, gas, and vapour. The lack of data on toxicokinetics and toxicity of the adsorption of chemical components onto particles prevents a full understanding of the effects of smoke on firefighters. The toxicokinetics of chemical mixtures are not well understood but are probably of significant importance because of the multiplicity of chemicals in smoke. For individual smoke components, inhalation was considered to be the major source of exposure; however, dermal absorption is also an important route of exposure for polycyclic aromatic hydrocarbons and polychlorinated biphenyls.

There are insufficient studies to evaluate genotoxic effects in firefighters.

There is clear evidence of chronic and acute inflammatory respiratory effects in firefighters, which provides a potential mechanism for carcinogenesis, although the major effect would be expected in the respiratory system.

No genotoxicity studies in animals were found that involved exposure to smoke from the combustion of structural materials. Smoke causes lipid peroxidation, which may be associated with cancer. Wood smoke suspensions has been shown to cause DNA strand breakage and lipid peroxidation in cell cultures.

**Richard A. Mathews, CPCU, ARM**  
10069 Oakridge Drive  
Wexford, PA 15090

**Home: 724-935-4875**  
**Cell: 412-855-9297**  
**Email: mmathews@consolidated.net**

**Career Objective:**

*To enhance operational efficiencies while facilitating long-term expansion opportunities while furthering my educational and professional growth.*

**Present - MRM Inc., Assistant Treasurer, Risk Manager**

MRM, Inc. is the administrating corporation of two Pennsylvania exclusive, non-profit, participating pools - MRM Workers' Comp. Trust & the PLT Trust. I joined MRM Inc. with a triple mandate of market expansion, lowering operating costs and improving risk management functions.

All three MRM, Inc. mandates have been exceeded.

- 1) Market growth included growth from a six count base to membership in 51 counties while net adjusted W.C. rates have doubled annual premium. I developed Ad copy using Microsoft Publisher, authored trade and association articles and promoted programs at conventions.
- 2) Operating cost loads are now at record program lows due to upgrading accounting systems, data management systems and bringing in-house claims adjusting functions.
- 3) Risk Management functional improvements resulted from improved underwriting criteria advancement in loss control efforts and efficiencies in claims handling process producing historic low loss ratios.
- 4) Additionally, the growth of MRM, Inc. led me to further my professional education. I have earned the ARM and CPCU designations as an Associate in Risk Management and a Chartered Property Casualty Underwriter.

**Prior Professional Employment Accomplishments:**

**Institutional Public Food Service Management**

Commonwealth of Pennsylvania – Dept. of Military & Veterans Affairs, Dept. of Corrections.

- 1) Developed operating policies and implemented food handling procedures for proto-type Veterans long-term care nursing home facility from startup to full resident capacity.
- 2) Supervised 45 prisoners and staff in preparation of 1,400 meals per serving in corrections facility.

**Private Food Service Management**

- 1) Operations Manager for National Restaurant Chain, unit ranked in top 10 for YTY increase in same store sales and improvement in food costing ratio partially due to local unit marketing..
- 2) General Manager for Fortune 100 company ranking #12 nationwide for unit profitability among 354 locations largely due to creative product marketing.
- 3) Operations Manager for National Restaurant Chain which achieved #1 Regional same store sales increase and top 10% national ranking due to rollout of in-store marketing.

**Private and Public Sector Accounting, Finance Accomplishments.**

- 1) Acting Controller for successful Chapter 11 bankruptcy reorganization.
- 2) Acting Controller for start-up interior construction company that led to a merger.
- 3) Certified Tax Auditor/Revenue Investigator Commonwealth of Pennsylvania.

**Personal Interests and Accomplishments:**

My family is my greatest personal interest. From taking dance class with my wife to having proudly worked with my twin sons as they earned Eagle Scout to coaching my youngest daughter's basketball team, my free time is always rewarding on multiple levels. Additionally, I was first published as a High School student and remain active pursuing my passion for writing as an author of non-fiction and fiction.

**Education:**

Graduated from Pennsylvania State University, 1981 B.S. – Major Finance, Minors Statistics, Economics