Presentation to the Senate Standing Committee on Education, Employment and Workplace Relations Committee

Inquiry into the Safety, Rehabilitation and compensation Amendment (Fair Protection for Firefighters) Bill 2011

On July 2011 the Australian Senate referred the Safety, Rehabilitation and Compensation Amendment (Fair Protection for Firefighters) Bill 2011 to the Standing Committee on Education, Employment and Workplace Relations for inquiry and report.

A submission by Alex Forrest, BA, LLB

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Tab #1

Introduction:

It is an absolute honour for me to make a presentation to this committee on the issue of Presumptive Legislation for Fire Fighters on behalf of the firefighters of Australia.

I have been working with the issue of occupational disease in Fire Fighters for over fifteen years and I have had the honour of assisting many jurisdictions both in North America and the European Union, to understand the science and draft appropriate legislation.

I applaud the government of Australia for dealing with this issue that is vitally important to your firefighters, the men and women who serve your country. They have never let the citizens of Australia down and I know you will not let your firefighters down.

The connection between firefighting and occupational cancer is no longer debatable. Firefighters will encounter carcinogens throughout their careers and over time some will develop occupational cancer.

I know that if a firefighter in your country died in a fire while attempting a rescue of a child then that firefighter's family would be properly compensated for making the ultimate sacrifice. This issue is no different. With occupational cancer it is not one fire that injures or kills the firefighter, it is hundreds of fires over time that break down the firefighter's ability to deal with carcinogens. Firefighters will be diagnosed with occupational cancer, cancer that was caused by service to the citizens over throughout his or her career.

The North American Experience:

Presumptive legislation has been available for North American firefighters in a number of jurisdictions for many years, but with advancements in science and research we can now see the impact that occupational cancer has on firefighters.

In 2002 the first province in Canada passed legislation to ensure that certain cancers would be deemed to be occupational in regards to the profession of firefighting. Since that time nine of the twelve Canadian jurisdictions have passed presumptive cancer legislation recognizing the link between firefighting and certain cancers. In close to ninety percent of Canada and eighty percent of the United States firefighters have some form of coverage for occupational cancer.

The Science:

I could go on for weeks discussing the science that has driven this legislation across North America, but I will just touch on the most relevant of the studies so that you can understand the incredible amount of research and science involved in this issue.

It has been stated that firefighting is the most studied occupation in the world when it comes to cancer. There are literally dozens of major studies from around the world spanning over twenty years and they have made a definitive connection between firefighting and elevated cancer risk.

I am providing you with full transcripts of the studies that I will discuss in this report so that each person on the committee will be able to read the research for themselves.

I will point out the highlights.

Occupational Cancer in New York City Firefighters
Philip J. Landrigan, MD, MSc
Anne L. Golden, PhD
Steven B. Markowitz, MD

This report was done by the Mount Sinai School of Medicine, City University New York, New York.

This study is very important as it not only describes the links between cancer and firefighting but it also goes into why these cancers exist among firefighters. It shows a correlation between cancer and plastics, and there is and ever increasing use of these plastics. The same plastics that are used in Canada and the United States are also prevalent in Australia.

"In this report, investigators from the Mount Sinai School of Medicine of the City University of New York examine the risk of cancer among firefighters and its relevance for New York City firefighters. The report begins by discussing the nature of cancer. It reviews the literature on the chemical causation of cancer. It summarizes data on the chemical carcinogens encountered in firefighting. It reviews the epidemiological literature on cancer among firefighters. Finally, it concludes by summarizing the available evidence on the carcinogenic hazards of firefighting in New York City." [1.]

1. *Occupational Cancer in New York City Firefighters*
Philip J. Landrigan, MD, MSc
Anne L. Golden, PhD
Steven B. Markowitz, MD
Mount Sinai School of Medicine, City University New York, New York.

The study begins by describing the nature of cancer and how cancer manifests itself over time in firefighters. The cancer develops over time with exposure to carcinogens.

Plastics are now part of everyday society and every year plastics replace wood as our primary building block.

Approximately one thousand new chemicals are registered every year in the United States and these plastics contain carcinogenic chemicals that are released during combustion

The study lists all of the chemicals in plastics that are known to be carcinogenic and it discusses the known carcinogens and their connection to specific cancers.

Finally this study goes into an epidemiological discussion of relevant studies:

1. Evaluating Causation for Occupational Cancer Among Firefighters: Report to the Workers' Compensation Board of Manitoba

   Tee L. Guidotti, MD, MPH, FRCPC, CCBOM, FFOM

2. Evaluating the Association Between Selected Cancers And Occupation as a Fire fighter

   Tee L. Guidotti, MD, MPH, FRCPC, CCBOM, FFOM

These two studies were done by Dr. Tee Guidotti, one of the foremost experts on occupational cancer and firefighting.

Within these studies Dr. Guidotti discusses the relevant studies and the causation of occupational cancer in firefighters.

These studies were done for Canadian jurisdictions and they were likely highly influential for Canadian provinces in creating cancer legislation for firefighters.

The province of Manitoba WCB Study Executive Summary reads as follows:

Executive Summary

The occupational health problems of firefighters have been extensively studies, to the point that the world epidemiological literature on this topic is among the most complete and detailed available for any occupation. Even so, many unresolved issues remain, especially whether firefighters are at increased risk for certain cancers. These issues are unlikely to be definitively resolved any time soon with new studies, because they primarily deal with rare outcomes and few studies are likely to have sufficient statistical power. Meta-analysis, while useful as an analytical tool, depends on the underlying data and cannot overcome the power limitations of individual studies if most of the studies involved in the analysis have already incurred a Type II error (missing a true association) or are subject to uncorrectable bias that obscures the association.

There is currently a movement across Canada, led by Manitoba, to adopt legislation establishing rebuttable presumptions for compensation of firefighters who develop certain types of cancer. Such presumptions must meet legal standards of the weight of evidence, in two ways. Assessing the occupational cancer risk of firefighters presents methodological problems common to the interpretation of epidemiological data for other rare outcomes. These problems are common in occupational epidemiology. We discuss criteria for inferring causation in such situations, both in general and by examining of the published policy of the Workers' Compensation Board of British Columbia. The WCB of BC has accepted most

claims for cancer of the type under review and has developed a set of criteria that is unusually explicit and therefore worthy of examination as a model. [2.]

In the second study for the British Columbia Firefighters Guidotti goes further into assessing the risk of occupational cancer in firefighters.

This study again states that it really is no longer a debate in regards to cancer risk to firefighters over time and it also mentions that the cancer risk is likely underestimated and the risk to firefighters is actually much greater than studies normally conclude.

Many scientists believe that cancer rates among firefighters would be higher if it were not for the Healthy Worker Effect. Firefighters as a group may be more resistant to disease because they are healthier than the general population. When they are hired they are at a level of fitness and health that would likely fall within the top ten percent (10%) of physical fitness of the general population. Also cancer may be under-reported among firefighters because many firefighters retire at fifty-five (55) or sixty (60) years of age, and there is a long latency period for several cancers. As a result, firefighters who are diagnosed with cancer after retirement may not be included in the statistics on firefighter cancer.

The healthy worker effect is very strong for firefighters as a group due to the selection process and the medical screening of recruits.

I am including a study concerning the impact of the healthy worker effect, “A review of the healthy worker effect in occupational epidemiology”, by C. Li and F. C. Sung of the Department of Public Health, College of Medicine, Fu-Jen Catholic University, Hsinchuang, Taipei. [2.]

2. *Evaluating Causation for Occupational Cancer Among Firefighters: Report to the Workers’ compensation Board of Manitoba*
   Tee L. Guidotti, MD, MPH, FRCPC, CCBOM, FFOM

This study states:

"The HEW (Healthy Worker Effect) has long been considered as a source of selection bias. It is true that there is a selection process of excluding unhealthy individuals from the workforce, and this selection process leads to a difference in health status between workers and the general population. From this perspective, in an industry free of significant life-shortening hazards, both morbidity and mortality rates within the workforce of interest are likely to be lower than that in the general population. In addition to bias due to the selection process at employment, occupational studies of both morbidity and mortality, which compare workers and the general population, appear to be influenced by additional sources of biases. For example, healthier workers are more likely to stay in the workforce than those who are sick, which may also give rise to a healthier occupational cohort. From this perspective, the HWE can be viewed as a consequence of selecting an occupational cohort with a process based on health and /or survival effects. This review classifies the HWE and the other biases related to the comparison of workers and general population into election bias, information bias, and confounding bias as addressed below." [3.]

3. *A review of the healthy worker effect in occupational epidemiology*
C. Li
F. C. Sung
Department of Public Health, College of Medicine, Fu-Jen Catholic University, Hsinchuang, Taipei.

The study I would like to concentrate most on today is:

Cancer Risk Among Firefighters: A Review and Meta-analysis of 32 Studies.
November 2006
Grace K. LeMasters, PhD
Ash M. Genaidy, PhD
Paul Succop, PhD
James Deddens, PhD
Tarek Sobeih, MD, PhD
Heriberto Barriera-Viruet, PhD
Kari Dunning, PhD
James Lockey, MD, MS.

This study was done at the University of Cincinnati. I will refer to it as the LeMasters study

This was the largest study done of its type, a meta-analysis of more than thirty two (32) studies looking at dozens of fire departments and over one hundred thousand (100,000) firefighters.

I have included this study because it makes two definitive conclusions, that firefighters are exposed to harmful substances, both at fire scenes and at fire halls and that firefighters will have an increased risk of occupational cancer over their careers.

There are two other studies that I would also like to include in this report:

“Retrospective cohort study of mortality and cancer incidence in New Zealand fire fighters”

Michael Bates
Jackie Fawcett
Nick Garrett
Richard Arnold
Neil Pearce
Alistair Woodward

and

“Cohort Mortality Study of Philadelphia Firefighters”

Dalsu Baris, MD, PhD
Thomas J. Garrity
Joel Leon Telles, PhD
Ellen F. Heineman PhD
Andrew Olshan, PhD
Sheila Hoar Zahm, ScD

Both of these studies are limited due to their sample size but, even with their small sample size, they clearly show connections between firefighting and certain cancers.

We have requested that these seven cancers to be within the scope of this legislation:

- Brain
- Bladder
- Kidney
- Non-Hodgkin’s Lymphoma
- Leukemia
- Breast
- Testicular

There are other cancers that are covered in North America although, with the exception of breast cancer, these are the most common. I would like to explain why these seven cancers were chosen.

These cancers have an undeniable link to the profession of firefighting. When Canada first past presumptive legislation it was a very cautious piece of legislation and it only covered five cancers. These were brain, bladder, kidney, non-Hodgkin's lymphoma and leukemia.

The province of Manitoba commissioned a report and, based on the work of Dr. Tee Guidotti, these five cancers were shown to have a strong scientific connection to firefighting. I hope you will read Dr. Guidotti's report to the Province of Manitoba, which is included as an attachment to this presentation.

What these cancers have in common is that they all concern the filters of the body. The exception is brain cancer, but because of the high rate of blood flow tumors can result in this area due to firefighting. In the attached studies you will see that these cancers are common in the results of almost every study.

Testicular cancer is one that shows some of the highest rates of cancer in firefighters and this is explained in the New Zealand study that is included as an attachment to this presentation. These results are largely due to the sensitive areas that are prone to absorption of carcinogens into the body and they are supported by studies that were done in Germany, the United States and Canada.

Breast cancer is a very important cancer to be recognized as recent studies such as the Cornell Study concludes that women firefighters are at risk due to the vulnerability of women in regards to the impact that carcinogens have on breast cancer rates. There have not been as many studies done for this cancer because women in the fire service are not a large enough group to do a study of any consequence. However, this cancer needs to be covered because women firefighters should not be put at a disadvantage for protective cancer coverage simply because there are not as many of them in the fire service as their male counterparts.

We know that any type of new legislation has to be approached with caution and so we have put forward a list of cancers that are undeniably connected to firefighting. We have no doubt that this list will be expanded as the legislation gets replicated in other state jurisdictions.

Conclusion

I applaud the government of Australia for looking at this issue but it is long overdue.
The science supports this legislation and it needs to be passed because it is the right thing to do.

The sad reality is that because of the nature of firefighting and a fire fighter's inability to protect him/herself from constant contact with carcinogens at fires many of your firefighters in Australia have already has been diagnosed with occupational cancer and many have died. They have died without being properly recognized for the ultimate sacrifice they have given to the citizens of Australia. That is wrong.

The constantly increasing use of plastics in our society means that cancer rates will rise for firefighters. Even though the safety factors of our protective equipment and clothing has increased by five times what it was ten years ago, the toxicity level of fires may have gone up twenty times in the same time frame.

Firefighters do not have the same right to refuse unsafe work as other employees. Every time we fight a fire or attempt a rescue as a house burns around us we are going into an unsafe workplace. We never refuse, we always go in when life safety is an issue.

Our workplace is a place that is unknown to us. We know that there are carcinogens present, but to what level we never know.

There will be opposition to this legislation based not on science or any other argument but because of cost. That is morally wrong. Looking after the families of firefighters who die as a result of their profession is the cost of doing business. It is the moral thing to do.

Opposition groups will be cowardly. They will not admit that their opposition is due to cost but they will use the very nature of science to stall the issue and say that more studies need to be done. They will even say that fires in Australia are different than fires in North America or Europe. They will use the same tactic that tobacco companies used for decades to fight off the claims that smoking causes lung cancer. They will claim that the studies are not definitive or that we need more studies, knowing that studies take years and that many can even be manipulated.

This legislation has been supported by over ninety five percent (95%) of the population of Canada and the United States and I know that Australian firefighters will receive the same level of support from their citizens. You were all elected by these citizens and we ask you to go with the will of the people.

Tab #2

LITERATURE CITED

Dalsu Baris, MD, PhD, Thomas Jl. Garrity, Joel Leon Telles, PhD, Ellen F. Heineman, PhD, Andrew Olshan, PhD and Sheila Hoar Zahm, ScD; Cohort Mortality Study of Philadelphia Firefighters, American Journal of Industrial medicine 39:463-476 (2001)

Michael Bates, Jackie Fawcell, Nick Garrett, Richard Arnold, Neil Pearce, Alistair Woodward: Retrospective cohort study of mortality and cancer incidence in New Zealand fire fighters, Institute of Environmental Science and Research Ltd. And Wellington School of Medicine, April 2000

Tee L. Guidotti and David F. Goldsmith, Report to the Workers Compensation Board of Manitoba on the Association Between Selected Cancers and the Occupation of Firefighter, March 28, 2002

Tee L. Guidotti, MD, MPH, FRCPC, CCBOM, FFOM, Division of Occupational Medicine and Toxicology, Department of Medicine, School of Medicine and Health Sciences, The George Washington University Medical Centre: Report to the British Columbia Professional Fire Fighters Association, Evaluating the Association Between Selected Cancers And Occupation as a Fire Fighter. March 26, 2003

Tee L. Guidotti, MD, MPH, FRCPC, CCBOM, FFOM, Division of Occupational Medicine and Toxicology, Department of Medicine, School of Medicine and Health Sciences, The George Washington University Medical Centre: Evaluating Causation for Occupational Cancer Among Firefighters: Report to the Workers' Compensation Board of Manitoba. Final Version 2.1 7 March 2005

Philip J. Landrigan, MD, MSc, Anne L. Golden, PhD, Steven Ba. Markowitz, MD: Occupational Cancer in New York City Firefighters, A report by The Department of Community Medicine, Division of Environmental and Occupational Medicine, Mount Sinai School of Medicine, City University of New York

Grace K. LeMasters, PhD, Ash M. Genaidy, PhD, Paul Succop, PhD, James Deddens, PhD, Tarek Sobeih, MD, PhD, Heriberto Barriera-Viruet, PhD, Kari Dunning, PhD. And James Lockey, MD, MS: Cancer Risk Among Firefighters: A Review and Meta-analysis of 32 Studies, JOEm, Volume 48, Number 11, November 2006

C. Li, F.C. Sung: A review of the healthy worker effect in occupational epidemiology, Occupational Medicine, Vol 49, No. 4, 225 – 229, 1999

Tab #3

Alex Forrest, BA., LLB

Alex Forrest joined the military (Combat Arms) in 1983 and after being honourably discharged in 1986 he served with the Royal Canadian Mounted Police in Northern Manitoba before joining the Winnipeg Fire Department in 1989.

Alex obtained a Bachelor of Arts and then worked as a full time fire fighter while he pursued a Bachelor of Laws at the University of Manitoba. He was called to the Bar in 1996 but rather than going into private practice he became President of the United Fire Fighters of Winnipeg, an organization representing over fifteen hundred active and retired firefighters in the City of Winnipeg. He has remained an active Fire Fighter throughout his years as President of UFFW.

Alex has close to twenty-two years of experience as a Fire Fighter with the Winnipeg Fire Department and has been President of the United Fire Fighters of Winnipeg, Local 867 of the International Association of Fire Fighters for more than fourteen years. He is a First Responder and has completed courses in Hazardous Materials and High Angle Response. He has also completed the Officer's Training Course of the Winnipeg Fire Department and is currently called upon to Act as an Officer.

Alex continues to be President of UFFW and he is also Canadian Trustee of the International Association of Fire Fighters, an organization that represents twenty-two thousand Canadian Fire Fighters. The I.A.F.F. represents three hundred thousand fire fighters across Canada and the U.S.A. Alex is Chair of the UFFW Political Action Committee and as such he has been very involved in lobbying to attain Presumptive Legislation for Fire Fighters across Canada. He has a passion to ensure that firefighters diagnosed with occupational disease receive proper compensation and recognition. Alex worked hard to make Manitoba the first Canadian province to receive Presumptive Legislation, and assisted in drafting that legislation, which was passed in 2002. Since that time he has lobbied governments and met with and advised Premiers, and Ministers not only to extend the "Manitoba Model" to other

provinces and other countries but also to improve the coverage provided to Manitoba Fire Fighters. Seven Canadian Provinces now have Presumptive Legislation and Alex has been instrumental in this expansion. In several jurisdictions, including almost every Province in Canada, Alex has assisted in drafting legislation and amendments to the Workers Compensation Acts to provide Presumptive Legislation to Fire Fighters.

During the course of the last two years Alex has been involved in assisting members of the European Union in their pursuit of Presumptive Legislation for Fire Fighters. He has spoken to large gatherings of Fire Fighters and Political Leaders in Finland, Sweden and Ireland to name just a few. He was instrumental when the European Health and Safety Award that was given to Sweden.

Alex has represented the IAFF as Policy Committee Member, EMS Representative for Ontario and Manitoba and Provincial District Service Representative for the Province of Manitoba. He is the International Representative of the 13th District (Manitoba and Ontario). He has been involved in medical studies and has helped to educate medical doctors on the issues surrounding Occupational Diseases.

Alex Forrest is the Vice-President, Prairie Region, for the Canadian Fallen Fire Fighter Foundation and has served on the Board of the Centre for Disease Control, Animal and Human Health, the Hazardous Materials Corporation and the CGSB / CSA Technical Committee on the Protection of First Responders from CBRN Events. He has served as Director of the Manitoba Hazmat Corporation and the Joint Chair of the Winnipeg Fire Department Safety Committee and is the Media Spokesperson and Negotiations Chair for UFFW.

Mr. Forrest has instructed seminars and has been a guest lecturer for many Fire Fighter organizations across both North America and Europe. He continues to assist Fire Fighter Locals and to educate government officials in many jurisdictions about the science that proves a connection between occupational diseases and the occupation of firefighting.

Tab #4