

Background

The City of Philadelphia (Employer) hired Claimant as a firefighter in 1994. In 2006, Claimant developed a skin lesion on the back of his right thigh, which was diagnosed as malignant melanoma and removed surgically. The surgery did not cause Claimant to miss work.

In June of 2012, Claimant filed a claim petition alleging that his malignant melanoma was caused by his workplace exposure to carcinogens categorized by the International Agency for Research on Cancer (IARC) as Group 1 carcinogens. Claimant sought payment of the medical bills associated with his melanoma treatment. Employer filed an answer denying the allegations.² At the hearing before the WCJ, both Claimant and Employer appeared and presented evidence.

Claimant testified by deposition. He explained that during his work as a firefighter, he has been stationed in many different firehouses in the City. At each firehouse, he was exposed to diesel fuel emissions because the fire trucks are kept running inside the building. Claimant recalled seeing clouds of exhaust in the air and soot on the walls and windows, and smelling diesel fuel emissions. In addition, Claimant was exposed to the secondhand tobacco smoke of those firefighters who smoked inside the firehouses.

Claimant also testified about the carcinogens to which he was exposed while fighting fires. Claimant explained there are two phases to fighting a fire: suppression and overhaul. In the suppression phase, the engine company locates,

² Claimant also filed a penalty petition alleging that Employer violated applicable regulations because it did not comply with Claimant's discovery requests. The WCJ denied the penalty petition; it is not at issue on appeal.

confines, and extinguishes the fire; the ladder company places ladders, ventilates and does search and rescue. In the overhaul phase, firefighters are inside the structure, opening ceilings and walls to check for hidden fire. Firefighters are exposed to smoke during both phases. All City firefighters have been issued self-contained breathing apparatus (SCBA), but they do not always wear them, especially during overhaul. Following a fire, it was not unusual for Claimant to have soot in his hair and nose and on his gear, *i.e.*, his coat, pants, boots, gloves, hood and helmet.

In January 2007, Claimant had a malignant melanoma surgically removed from the back of his right thigh. Claimant testified that his dermatologist told him that sun exposure had probably caused his malignant melanoma and advised him to use sunscreen. Claimant described himself as an outdoor person, who enjoys yardwork and baseball, but he has never spent prolonged periods of time outside wearing shorts. Claimant testified he never had any sunburn on his legs that required medical care. Claimant also stated that he always wore long pants while at work, and that there was never a time on the job where the back of his thigh would have been exposed to sunlight.

Prior to his malignant melanoma, Claimant had not been diagnosed with any type of cancer. Claimant's family does not have a history of melanoma, but his mother has been treated for basal cell skin cancer.

In support of his claim petition, Claimant submitted a report from Virginia M. Weaver, M.D., M.P.H., who has studied the occupational diseases of firefighters. Dr. Weaver found that smoke typically contains the following IARC Group 1 carcinogens: arsenic; asbestos; benzene; benzo[a]pyrene; 1, 3-butadiene; formaldehyde; and soot. These carcinogens cause cancer in humans, and enter the

bloodstream by inhalation, absorption through skin and ingestion of contaminated nasopharyngeal secretions and fluids. In addition, Dr. Weaver noted that diesel engine exhaust is listed as an IARC Group 2A agent, meaning it is a probable agent of cancer in humans. Dr. Weaver did not specify the types of cancer caused by Group 1 or 2A carcinogens.

Finally, Claimant offered the deposition testimony of Barry L. Singer, M.D., an oncologist who is board certified in internal medicine and hematology. Dr. Singer has been diagnosing and treating cancer for 40 years, with a focus on breast, colon, and lung cancers. Dr. Singer is not an epidemiologist or toxicologist, and he does not specialize in the etiology of cancer. Likewise, he does not have training in meta-analysis, *i.e.*, the methodology used to analyze independent, but similar, studies to test the pooled data for statistical significance.

Dr. Singer explained that in 2008 he was contacted by Claimant's counsel to evaluate the cancer history of a number of firefighters to determine whether their cancer was work-related and, thus, compensable under the Act. Dr. Singer estimated that since 2008, he has reviewed 40 to 50 cases on referral from Claimant's counsel.

Dr. Singer explained that with each referral, Claimant's counsel sends him the firefighter's medical history and treatment records along with an affidavit from the firefighter about his job duties, length of service and family medical history. Dr. Singer does not do a physical examination of the firefighter in conjunction with any referrals. Claimant's counsel also sends Dr. Singer medical journals and academic literature that relate to cancer in firefighters. Dr. Singer also does his own research in the medical literature relevant to the exposure to carcinogens experienced by firefighters.

Dr. Singer testified that he uses a “differential diagnosis” methodology to prepare his reports for Claimant’s counsel on the cause of a firefighter’s cancer. Reproduced Record at 619a (R.R. ____). Practitioners, including Dr. Singer, use this methodology to assess the history and symptoms of their patients. Dr. Singer acknowledged that he is unaware of any authority supporting the use of this methodology to determine a causal connection between a given agent and a given cancer.

Dr. Singer used this methodology to prepare his report on Claimant’s malignant melanoma. Dr. Singer explained that the IARC Group 1 carcinogens commonly found in smoke include arsenic; asbestos; benzene; benzo[a]pyrene; 1, 3-butadiene; formaldehyde; and soot. Dr. Singer identified three studies he received from Claimant’s counsel that associate skin cancer with firefighting:

1. LeMasters, Grace, et al., “Cancer Risk Among Firefighters: A review and Meta-analysis of 32 Studies”.
2. Bates, Michael N., Ph.D. “Registry-Based Case-Control Study of Cancer in California Firefighters”. *Am.J.of Ind. Med.*, 50:339-344, 2007.
3. King, John K., “Job Related Cancers in Firefighters”. Written for Gerald “Skip” Lawver, Director of The Fire School of Staff and Command, Class 5, 8/22/2003.

R.R. 399a. Dr. Singer opined that Claimant’s exposure to Group 1 carcinogens while working for Employer was “a substantial contributing factor in the development of his skin cancer malignant melanoma.” *Id.*

On cross-examination, Dr. Singer explained that his use of the words “substantial contributing factor” meant that if that factor did not exist, more likely than not the person would not have gotten the disease. R.R. 629a. In other words,

“but for that factor, the disease would not be there at that time. It doesn’t mean that they would never have the disease” but, rather, explains the timing of the disease’s onset. *Id.* Dr. Singer testified that skin cancers are caused by arsenic, soot and “some other chemicals,” but he could not say that was the case for asbestos; benzene; 1, 3-butadiene; formaldehyde; or benzo[a]pyrene. R.R. 146a-47a. Dr. Singer was unable to cite any authority linking soot to malignant melanoma; he acknowledged that the IARC relates soot to scrotal cancer. Dr. Singer was unable to point to any study relating arsenic to malignant melanoma. Nevertheless, it was his opinion that arsenic can cause malignant melanoma because the literature states that arsenic can cause skin cancer, and malignant melanoma is a type of skin cancer.

Dr. Singer explained that arsenic can be absorbed through skin and dispersed into the blood stream. Accordingly, the cancer it causes can appear anywhere on the skin. Dr. Singer acknowledged that he had no evidence that Claimant experienced either acute or chronic arsenic exposure.

Acknowledging the lack of authority for using the differential diagnosis methodology to determine causation, Dr. Singer also acknowledged that he had not considered the methodologies used by public health experts to determine what exposures cause cancer, including studies published by the EPA, Veteran’s Administration, National Academy of Science and the IARC. Dr. Singer also did not consider the American Medical Association’s Guides to the Evaluation of Disease and Injury Causation, the Federal Court handbook, or the Bradford Hill criteria.³ Dr. Singer did not do his own analysis of studies reported in the literature

³ Dr. Singer subsequently reviewed the American Medical Association’s Evaluation of Disease and Injury Causation and testified that he followed its steps on causation analysis.

or do any lab testing. The report that he prepared for Claimant did not rule out other potential causes of cancer or opine that firefighting was the precise cause of Claimant's melanoma. Rather, he opined that firefighting was a contributing factor.

Dr. Singer was questioned about the studies that he cited as support for the proposition that there exists a correlation between firefighting and skin cancer. He acknowledged that the Bates study dealt only with California firefighters and that there might be a difference between the amount of exposure to sunlight experienced by California firefighters and Philadelphia firefighters. Dr. Singer admitted that he did not have any knowledge about Claimant's exposure to sunlight while working as a firefighter. Dr. Singer conceded that the King report had limited value because King is not a scientist but a firefighter. Further, given King's occupation, Dr. Singer acknowledged that his report may be tainted by bias. In any case, Dr. Singer agreed that the King report cannot be called a scientific study. Dr. Singer acknowledged that the LeMasters report found no correlation between malignant melanoma and firefighting. Rather, it found that the mortality rate for firefighters afflicted with melanoma is significantly lower than in the general population.

Dr. Singer testified that he did not know that there had been a period of time in Claimant's career with the City when he did not fight fires; that fact had not been disclosed to him. Dr. Singer acknowledged that because he did not examine Claimant, he was unable to question the accuracy of the information in Claimant's affidavit. Finally, Dr. Singer acknowledged that most firefighters do not get cancer and that firefighters get cancer for reasons unrelated to the job.

At the request of Claimant's counsel, Dr. Singer reviewed Claimant's testimony, and on April 1, 2013, issued another report opining that Claimant's exposure to carcinogens at work was a substantial contributing factor in his malignant melanoma diagnosis. Dr. Singer stated that soot and arsenic "are specifically related to malignant neoplasms of the skin by the IARC." R.R. 885a.

In opposition to Claimant's claim petition, Employer submitted the deposition testimony of Tee L. Guidotti, M.D., M.P.H., D.A.B.T., who is board certified in internal medicine, pulmonary medicine, occupational medicine, and has a degree in toxicology.⁴ Dr. Guidotti is also trained in epidemiology, which he described as the "science of the patterns of diseases in populations."⁵ R.R. 898a. Dr. Guidotti has undertaken a number of research projects that have been published in peer-reviewed journals. For the past 20 years, Dr. Guidotti has been investigating the relationship between environmental exposures associated with firefighting and cancer. Dr. Guidotti has testified as an expert on the etiology of various diseases related to occupations.

Dr. Guidotti testified that specific carcinogens cause specific cancers. Stated otherwise, the IARC Group 1 carcinogens do not cause all types of cancer in all organs. Dr. Guidotti explained that there are three main types of skin cancer: squamous cell, basal cell and malignant melanoma. Squamous cell and basal cell skin cancers behave very differently than malignant melanoma. All skin cancers have some etiologic connection with ultraviolet radiation. Squamous and basal

⁴ Dr. Guidotti explained that toxicology is the science of how chemicals affect the body and how the body responds to those chemicals.

⁵ Dr. Guidotti stated that epidemiology "has to do with patterns of risk factors, patterns of diseases and how they all match up." R.R. 898a.

cell types are associated with sunlight exposure in adulthood as well as chemical exposure, which is not “a clear characteristic in melanoma.” R.R. 954a. The typical profile for malignant melanoma is sunburn early in life, and it has the unusual characteristic of “appearing sporadically without association with ultraviolet in certain parts of the body.” *Id.* Dr. Guidotti testified that inhalation, of any substance, does not cause malignant melanoma. Dr. Guidotti acknowledged that squamous and basal cell skin cancers have been associated with arsenic exposure, but malignant melanoma has not.

Dr. Guidotti reviewed a number of Dr. Singer’s reports prepared for Claimant’s counsel on other firefighters. He also reviewed Dr. Singer’s testimony on the methodology he employed to reach his opinion about causation of cancer in a particular firefighter’s case.

Dr. Guidotti testified that the reports were all alike and did not reveal any methodology, explaining:

In all of the statements from Dr. Singer that I saw, I could not really discern that any methodology was, in fact, used. They were all essentially identical.

The language was almost rubber-stamped. The conclusions were identical. There was no weighing of evidence or discussion of individual studies. There was no discussion of alternative explanations or potential exposures to rule them out or rule them in in any particular case.

It was like they were Xerox’d and only the names were changed.

R.R. 909a. Dr. Guidotti explained that in the field of epidemiologic research, researchers universally use the Bradford Hill criteria for evaluating whether the data support causation of cancer by a particular agent.

Dr. Guidotti testified that Dr. Singer's approach to causation did not match the generally accepted standard of practice in the field, and it did not conform to generally accepted scientific principles. Dr. Singer stated that he never heard of the Bradford Hill criteria, which suggested to Dr. Guidotti that he was "not familiar with mainstream epidemiology methodology." R.R. 920a. Dr. Guidotti also observed that what knowledge of etiology Dr. Singer has was "probably derived from his experience as an oncologist, which is all treatment-oriented." *Id.* Specifically, Dr. Guidotti stated:

Q. Doctor, do you have an opinion within a reasonable degree of medical certainty as to whether Dr. Singer selected and appropriately applied generally accepted scientific methodologies for the purpose of offering an opinion on etiology of cancer at a general causation level?

A. Based on the evidence and the opinions that he wrote and in his deposition and everything else I have seen, my opinion is that it does not conform to the usual standard.

R.R. 960a.

Also, Dr. Guidotti was asked about Dr. Singer's review of the epidemiologic literature:

Q. Dr. Singer testified that he can draw some inferences from the number of studies for a proposition and the number of studies against a proposition.

Specifically, when asked about prostate cancer as an example, he said there were 16 or 17 articles for an association and two against, therefore he could [con]clude that there was an association.

Is that an appropriate methodology for an expert to use in determining the strengths and weaknesses of epidemiological studies?

A. No. And I'm speechless that in this day and age somebody would think it is.

R.R. 913a. Dr. Guidotti explained that when reviewing epidemiological literature, one needs to analyze the quality of the studies, including their statistical work, which Dr. Singer testified he did not do.⁶ Simply counting the articles “for” and “against” a particular conclusion on the cause of cancer is a meaningless exercise.

Employer then offered Claimant's medical records of his treatment with Mitchell A. Anolik, M.D., a dermatologist. Dr. Anolik's August 2008 notes reported that the malignant melanoma had been removed, the area had healed and there was no recurrence of melanoma. Dr. Anolik's notes observed that Claimant had “a deep tan on the face, neck, scalp and ears.” R.R. 1226a. Dr. Anolik advised Claimant to use sunscreen all year long and to avoid sun exposure as much as possible. *Id.*

Finally, Employer offered an IARC publication entitled World Health Organization Classification of Tumors. The publication explains that malignant melanoma affects predominantly fair-skinned Caucasians and states that “[i]ntermittent exposure to UVR [ultraviolet radiation] is the major environmental risk factor for melanoma, especially in combination with endogenous factors (skin types I and II, immune deficient status, genetic predisposition).” R.R. 1158a. The publication further explains that “[i]ntermittent exposure to UVR in white people, especially during childhood, has been postulated to be the main risk factor for the development of melanoma, although exposure in adulthood also plays a part.” *Id.*

⁶ For example, regarding Dr. Singer's reliance on the King report, Dr. Guidotti stated that it is not a scientific paper; it was a firefighter's essay presented for a class. As such, it lacked any probative value and could not be used to correlate a risk factor to a given disease.

Decision on Claim Petition

The WCJ accepted as credible the testimony of Claimant and Dr. Singer.⁷ Relying on Dr. Singer's testimony, the WCJ found that Claimant's workplace exposure to arsenic and soot, which are Group 1 carcinogens, was a significant contributing factor to his malignant melanoma. WCJ Decision, 10/1/2013, at 7, Finding of Fact No. 30. The WCJ rejected Dr. Guidotti's testimony, finding it "not relevant or material" to this case because he did not opine, specifically, on Claimant's cancer. WCJ Decision, 10/1/2013, at 7; Finding of Fact No. 31. Based upon these findings, the WCJ granted the claim petition and ordered Employer to pay for Claimant's medical expenses by reimbursing "Claimant's primary health care plan" for treatment of Claimant's malignant melanoma. WCJ Decision, 10/1/2013, at 8.

Employer appealed to the Board. It argued, *inter alia*, that the WCJ erred in admitting Dr. Singer's report because it did not satisfy the *Frye* standard.⁸ Further, she did not explain whether, or how, she used the statutory presumption to reach her decision. Nor did she address whether Employer had rebutted the

⁷ The WCJ has responsibility for questions of credibility, conflicting medical evidence and evidentiary weight. *Sherrod v. Workmen's Compensation Appeal Board (Thoroughgood, Inc.)*, 666 A.2d 383, 385 (Pa. Cmwlth. 1995).

⁸ *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923). As our Supreme Court stated in *Grady v. Frito-Lay, Inc.*, 839 A.2d 1038 (Pa. 2003): "The *Frye* test ... is part of [Pennsylvania Rule of Evidence 702 and u]nder *Frye*, novel scientific evidence is admissible if the methodology that underlies the evidence has general acceptance in the relevant scientific community." *Id.* at 1043-44. The proponent of scientific evidence must demonstrate that the "methodology an expert used is generally accepted by scientists in the relevant field as a method for arriving at the conclusion the expert will testify to at trial." *Id.* at 1045. However, the proponent of the evidence is not required to "prove that the scientific community has also generally accepted the expert's conclusion." *Id.* Also, the testimony must be given by "a witness who is qualified as an expert by knowledge, skill, experience, training or education..." *Id.*

presumption. With the exception of the WCJ's directive that Claimant's health insurer be reimbursed, the Board affirmed the decision.⁹

The Board reasoned that because Claimant was exposed to IARC Group 1 carcinogens at work, his malignant melanoma met the definition of occupational disease set forth in Section 108(r) of the Act. The Board held that Claimant did not need to show that the carcinogens to which he was exposed caused his particular cancer. The Board acknowledged Employer's challenge to "the competency and sufficiency" of Dr. Singer's testimony, but it concluded that these alleged shortcomings were irrelevant by reason of Section 108(r) of the Act. Board Adjudication, 3/13/2015, at 15-16. Once Claimant proved exposure to Group 1 carcinogens at work, the burden shifted to Employer to show that Claimant's cancer was not caused by firefighting, and Dr. Guidotti's testimony did not meet that burden. Although Dr. Guidotti opined that the only known cause of malignant melanoma is ultraviolet radiation, he did not opine that this is what caused Claimant's malignant melanoma. Board Adjudication, 3/13/2015, at 14. Employer then petitioned for review to this Court.¹⁰

Appeal

On appeal, Employer argues that the Board erred in affirming the WCJ's grant of the claim petition. First, it contends that the Board erred in holding

⁹ The Board reversed the WCJ's decision awarding reimbursement to Claimant's health insurer (Independence Blue Cross) because nothing in the record suggested that Claimant's attorney represented the health insurer. Board Adjudication, 3/13/2015, at 17. It is not an issue on appeal.

¹⁰ This Court's review of an agency's adjudication determines whether the necessary findings of fact are supported by substantial evidence, whether constitutional rights were violated or whether an error of law was committed. *Cytemp Specialty Steel v. Workers' Compensation Appeal Board (Crisman)*, 39 A.3d 1028, 1033 n.6 (Pa. Cmwlth. 2012).

that Claimant met his burden of proving that malignant melanoma is an occupational disease under Section 108(r) of the Act. Second, it contends that the Board erred in holding that Employer's evidence did not prove that Claimant's malignant melanoma was not caused by exposure to arsenic or soot. Third, it contends that the Board erred in refusing to consider whether Dr. Singer's opinions satisfied the *Frye* standard and, thus, were even admissible.¹¹

We begin with a review of the statutory provisions relevant to occupational disease. Section 301(c)(2) of the Act states that a compensable "injury" includes "occupational disease as defined in section 108 of this act." 77 P.S. §411(2). In turn, Section 108 lists a number of occupational diseases. In 2011, the General Assembly enacted Act 46,¹² which, *inter alia*, added cancer to the list of occupational diseases for individuals employed as firefighters. This addition is found in Section 108(r), and it states:

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.

77 P.S. §27.1(r) (emphasis added).

Section 301(e) of the Act establishes a "presumption regarding occupational disease" that applies to any occupational disease. It states:

¹¹ The WCJ held that "Dr. Singer's methodology of causation – his use of a differential diagnostic assessment method is specifically found to be competent and an acceptable method of evaluating a causal relationship between Claimant's exposure in his job duties of firefighting and malignant melanoma." WCJ Decision, 10/1/2013, at 7, Finding of Fact No. 30. The Board concluded that "any alleged shortcomings in Dr. Singer's opinions" did not affect Claimant's entitlement to benefits. Board Adjudication, 3/13/2015, at 15-16.

¹² Act of July 7, 2011, P.L. 251, No. 46.

If it be shown that the employe, at or immediately before the date of disability, was employed in any occupation or industry in which the occupational disease is a hazard, *it shall be presumed that the employe's occupational disease arose out of and in the course of his employment, but this presumption shall not be conclusive.*

77 P.S. §413 (emphasis added).¹³ Stated otherwise, where a claimant has an occupational disease listed in Section 108 of the Act, the claimant need not prove this occupational disease was caused by workplace exposure, as opposed to another exposure. It is the employer's burden at that point to prove, for example, that it was not workplace pollution that caused the claimant's lung cancer but, rather, his three-pack a day cigarette habit.

Act 46 added another condition to the presumption where the occupational disease is cancer suffered by a firefighter. It did so in Section 301(f) of the Act, which states, in relevant part, as follows:

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.

77 P.S. §414 (emphasis added).

¹³ Section 301(e) was added by the Act of October 17, 1972, P.L. 930, No. 223.

In sum, to establish that a firefighter's cancer is an occupational disease, the firefighter must show that he has been diagnosed with a type of cancer "*caused by* exposure to a known carcinogen which is recognized as a Group 1 carcinogen." 77 P.S. §27.1(r) (emphasis added). Once a firefighter establishes that his type of cancer is an occupational disease, then he may take advantage of the statutory presumption in Section 301(e) and (f) of the Act. The presumption relieves the firefighter of the need to prove that his cancer was caused by his workplace exposure and not another cause. *See* Section 301(e) of the Act, 77 P.S. §413. So long as the firefighter can show four years of continuous service and the absence of cancer prior to that service, he is entitled to compensation under Section 301(f) of the Act, 77 P.S. §414.

The Board interpreted Section 108(r) of the Act to mean that the legislature has established that there is a causal relationship between a firefighter's exposure to any Group 1 carcinogen and any cancer. Specifically, the Board stated, "Claimant was not required to prove that he was exposed to a particular carcinogen in Group 1 or prove that the Group 1 carcinogens to which he was exposed specifically cause malignant melanoma as part of his initial burden." Board Adjudication, 3/13/2015, at 13. It reached this conclusion by reading Section 108(r) together with Section 301(e).

Employer argues that the Board erred. Section 108(r) defines occupational disease as a cancer *caused by* Group 1 carcinogens. The Board simply skipped over this important language in the definition of occupational disease. The presumption in Section 301(e) of the Act does not come into play until the claimant has established that he has an occupational disease. In the case of a firefighter claimant, he does this by showing that his cancer is a type caused

by Group 1 carcinogens.¹⁴ Claimant did not do this. Claimant responds that the Board correctly interpreted Section 108(r) and that, in any case, his evidence showed that the IARC Group 1 carcinogens he was exposed to as a firefighter can cause his type of cancer, *i.e.*, malignant melanoma.

The Statutory Construction Act of 1972 provides that “[e]very statute shall be construed, if possible, to give effect to all its provisions.” 1 Pa. C.S. §1921(a). Further, “[w]hen the words of a statute are clear and free from all ambiguity, they are presumed to be the best indication of legislative intent.” *Chanceford Aviation Properties, L.L.P. v. Chanceford Township Board of Supervisors*, 923 A.2d 1099, 1104 (Pa. 2007) (citation omitted). Our Supreme Court has explained:

To determine the meaning of a statute, a court must first determine whether the issue may be resolved by reference to the express language of the statute, which is to be read according to the plain meaning of the words. It is only when the words of the statute are not explicit on the point at issue that resort to statutory construction is appropriate. However, basic principles of statutory construction demand that when the words of a statute are clear and free from all ambiguity, the letter of it is not to be disregarded under the pretext of pursuing its spirit, and legislative history may be considered only when the words of a statute are not explicit.

Commonwealth v. Fedorek, 946 A.2d 93, 98–99 (Pa. 2008) (quoting *Commonwealth v. Dellisanti*, 876 A.2d 366, 369 (Pa. 2005)).

¹⁴ Employer directs this Court to *Whiting v. City of Charlottesville Fire and Rescue*, 2015 WL 4726990 (Va. App. No. 0141-15-4, filed Aug. 11, 2015), an unpublished decision of the Court of Appeals of Virginia. The *Whiting* court considered language similar to Section 108(r) in Virginia’s Workers’ Compensation Act and held that for a cancer to be an occupational disease, there must be a causal relationship to the employee’s occupational exposure to carcinogens.

In Section 108(r) of the Act, the General Assembly placed the words “caused by” between “cancer suffered by a firefighter” and “exposure to a known [Group 1] carcinogen” for a reason. The Board reasoned that where a claimant shows “that he had cancer generally and was exposed to any Group 1 carcinogens, he [has] met his initial burden.” Board Adjudication, 3/13/2015, at 13. We must give effect to “caused by,” and the Board erred in not doing so. It was incumbent upon Claimant to prove that his malignant melanoma is a type of cancer *caused by* the Group 1 carcinogens to which he was exposed in the workplace to establish an occupational disease. Only then do the presumptions in Section 301(e) and (f) of the Act come into play.

Claimant testified that while working as a firefighter, he was exposed to smoke, dust, soot, and diesel fuel emissions. Claimant’s expert, Dr. Weaver, stated, in her report, that she has found that smoke typically contains the following IARC Group 1 carcinogens: arsenic; asbestos; benzene; benzo[a]pyrene; 1,3-butadiene; formaldehyde; and soot. Although Dr. Singer opined that Claimant’s exposure to these carcinogens was “a substantial contributing factor in the development of his skin cancer malignant melanoma,” the Board dismissed this testimony as not relevant, reasoning that because “Claimant has shown that he was diagnosed with cancer and had been exposed to Group 1 carcinogens, he met his initial burden....” Board Adjudication, 3/13/2015, at 12.¹⁵ This was error. Dr. Singer’s testimony is relevant to Claimant’s initial burden, which is to show that melanoma is a type of cancer caused by exposure to Group 1 carcinogens.

¹⁵ Likewise, the WCJ found that Dr. Guidotti’s “general causation opinion in epidemiology is not relevant to a claim for an occupational disease pursuant to Section 108(r) of the Act.” WCJ Decision, 10/1/2013, at 7, Finding of Fact No. 31.

Likewise, the Board erred in not considering Dr. Guidotti's testimony that was offered to show that melanoma is not an occupational disease of firefighters.

Dr. Guidotti testified unequivocally that the sole cause of malignant melanoma is exposure to ultraviolet radiation. He ruled out exposures to Group 1 carcinogens as causing malignant melanoma while acknowledging that there is some evidence they cause other skin cancers. Dr. Guidotti explained the basis of his opinion. He testified that all skin cancers have some etiologic connection with ultraviolet radiation, *i.e.*, sunlight. Regarding malignant melanoma, Dr. Guidotti explained that its typical profile is sunburn early in life. When asked if he was aware of any link between melanoma and firefighting, Dr. Guidotti stated that, "there's [a] fair amount of s[k]epticism in the scientific community about whether this represents being outdoors or is actually associated with firefighting-related exposures." R.R. 955a. He opined that he has seen no evidence that "ars[e]nic is associated with malignant melanoma in general, let alone the issue of firefighters. The two skin cancers that are associated with ars[e]nic are squamous cell and basal carcinoma." R.R. 1045a-46a.

The Board rejected Dr. Guidotti's testimony as not rebutting the statutory presumption, explaining that, "[w]hile Dr. Guidotti attacked Dr. Singer's diagnostic methods and generally noted that the only known cause of malignant melanoma is ultraviolet radiation, and not chemical exposures, he did not offer an opinion as to Claimant's individual malignant melanoma or what may or may not have caused it." Board Adjudication, 3/13/2015, at 14. The Board erred. Dr. Guidotti's testimony was relevant both to the initial question of whether Claimant's malignant melanoma was an occupational disease and to Employer's rebuttal of the statutory presumption in Section 301(e) of the Act.

Because the Board has erred in its construction of Section 108(r) of the Act, we will vacate and remand this claim petition. Upon remand, the Board must consider whether Dr. Singer’s opinion was properly admitted. In this regard, it must first determine whether the Act requires a medical expert to satisfy Pennsylvania Rule of Evidence 702,¹⁶ *i.e.*, the *Frye* standard. If so, then the Board must determine whether Dr. Singer’s report satisfies this standard. If it concludes that Dr. Singer’s report was properly admitted, then the Board must remand the matter to the WCJ to determine whether to accept Dr. Guidotti’s causation opinion or Dr. Singer’s causation opinion. Should Claimant’s evidence on causation prevail, he will have established that melanoma is an occupational disease under Section 108(r). At that point, the presumption in Section 301(e) comes into play and assists Claimant, who is relieved of having to rule out other causes for his melanoma, such as his outdoor lifestyle. The WCJ must then determine whether Claimant had “four or more years in continuous firefighting duties, can establish direct exposure to a carcinogen referred to in section 108(r) ... and ... successfully passed a physical examination ... prior to engaging in firefighting duties and the examination failed to reveal any evidence of the condition of cancer.” Section

¹⁶ It states:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

- (a) the expert’s scientific, technical, or other specialized knowledge is beyond that possessed by the average layperson;
- (b) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; and
- (c) the expert’s methodology is generally accepted in the relevant field.

PA. R.E. 702.

301(f) of the Act, 77 P.S. §414. If Claimant's evidence meets these criteria, then Claimant will have made a *prima facie* case that his melanoma is a compensable injury. The burden then shifts to Employer. On remand, therefore, the WCJ must determine whether Employer's evidence rebuts the presumption set forth in Sections 301(e) and (f).

Conclusion

For the reasons stated above, we vacate the Board's order and remand the matter for further consideration consistent with this opinion.

MARY HANNAH LEAVITT, President Judge

IN THE COMMONWEALTH COURT OF PENNSYLVANIA

City of Philadelphia Fire	:	
Department,	:	
Petitioner	:	
	:	
v.	:	No. 579 C.D. 2015
	:	
Workers' Compensation Appeal	:	
Board (Sladek),	:	
Respondent	:	

ORDER

AND NOW, this 12th day of August, 2016, the order of the Workers' Compensation Appeal Board dated March 13, 2015, in the above captioned matter is hereby VACATED and the matter is REMANDED for further proceedings in accordance with the foregoing opinion.

Jurisdiction relinquished.

MARY HANNAH LEAVITT, President Judge