[J-56-2017]
IN THE SUPREME COURT OF PENNSYLVANIA
EASTERN DISTRICT

SAYLOR, C.J., BAER, TODD, DONOHUE, DOUGHERTY, WECHT, MUNDY, JJ.

CITY OF PHILADELPHIA FIRE DEPARTMENT	:	No. 13 EAP 2017
	:	
	:	Appeal from the Order of
	:	Commonwealth Court entered on
v.	:	08/12/2016 at No. 579 CD 2015
	:	vacating and remanding the Order
	:	entered on 03/13/2015 by the
WORKERS' COMPENSATION APPEAL BOARD (SLADEK)	:	Workers' Compensation Appeal Board
	:	at Nos. A13-1317 and WCAIS Claim
	:	No: 4037688
	:	
APPEAL OF: SCOTT SLADEK	:	ARGUED: September 12, 2017

Justice Donohue delivers the Opinion of the Court with respect to Part I, announces the judgment of the Court, and delivers an opinion with respect to Part II joined by Justices Baer and Todd

OPINION

JUSTICE DONOHUE[1] **DECIDED: October 17, 2018**

In this discretionary appeal, we address two issues associated with workers' compensation claims by firefighters suffering from cancer. First, we must first determine the evidentiary requirements for a claimant to demonstrate that he or she has an "occupational disease," as that term is defined in Section 108(r) of the Workers'

[1] This case was reassigned to this author.

Compensation Act (the "Act"), 77 P.S. § 27.1(r).[2] Second, we must decide whether epidemiological evidence may be used by an employer to rebut the evidentiary presumption that the claimant's cancer is compensable as set forth in Section 301(f) of the Act, 77 P.S. § 414.[3] With respect to the first issue, we conclude that pursuant to

---

[2] Section 108(r) provides:

> **§ 27.1. Occupational diseases; definitions**
>
> 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.

77 P.S. § 27.1(r).

[3] Section 301(f) provides:

> **§ 414. Compensation for cancer suffered by a firefighter**
>
> 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.

Section 108(r), the claimant has an initial burden to establish that his or her cancer is a type of cancer that is capable of being caused by exposure to a known IARC Group 1 carcinogen ("Group 1 carcinogen").[4] With respect to the second, we conclude that epidemiological evidence is not sufficient to rebut the evidentiary presumption under Section 301(f).

The City of Philadelphia hired claimant Scott Sladek ("Sladek") as a firefighter on May 9, 1994. Prior to his service as a firefighter, Sladek had not been treated for cancer and he passed a physical examination confirming he was cancer-free and in overall good health. Sladek earned a number of promotions over the course of his employment, including from firefighter to lieutenant in November 1997, to captain in 2004 and to battalion chief in November 2007. He was diagnosed with malignant melanoma and underwent a surgical procedure to remove the cancerous lesion from the back of his right thigh in January 2007.

On June 8, 2012, Sladek filed a claim petition for workers' compensation benefits alleging he developed melanoma from "[d]irect exposure to Group 1 carcinogens while working as a firefighter." Claim Pet., 6/8/12, at 1-2. The City filed an answer denying Sladek's claim that he was entitled to compensation. On February 19, 2013, a hearing

[4] The International Agency for Research on Cancer ("IARC") is a specialized research group within the World Health Organization that attempts to identify the causes of human cancers. The agency evaluates various agents, mixtures, and exposures, and classifies them into one of five groups. Group 1 substances are considered "carcinogenic to humans;" Group 2a substances are "probably carcinogenic to humans;" Group 2b substances are "possibly carcinogenic to humans;" Group 3 substances are "not classifiable as to human carcinogenicity;" and Group 4 substances are "probably not carcinogenic to humans." *See* IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, WORLD HEALTH ORGANIZATION, http://monographs.iarc.fr/ENG/Classification.

was held before a Workers' Compensation Judge ("WCJ"), at which both sides presented evidence via affidavits and deposition testimony.

During his testimony before the WCJ, Sladek described, inter alia, his various positions and duties during his tenure as a firefighter and detailed the different phases of firefighting. He participated in fighting hundreds of exterior and interior fires during his career, and regularly was exposed over time to, inter alia, smoke, soot, ash, and diesel emissions, as well as to second-hand smoke in the firehouses. Following a fire, he would have soot in his nose, hair, clothes, and gear. Sladek also testified he believes he has fought fires in buildings containing asbestos, as he was involved in ventilating buildings by cutting holes in walls, floors, and ceilings made of asbestos products.

Before the WCJ, Sladek offered a report authored by Virginia M. Weaver, M.D., M.P.H., an associate professor and faculty member at Welch Center for Prevention, Epidemiology and Clinical Research at Johns Hopkins University. Dr. Weaver has studied the occupational exposures of firefighters to known or probable carcinogens. Her report included the following list of Group 1 carcinogens commonly found in smoke: arsenic; asbestos; benzene benzo[a]pyrene; 1,3 butadiene; formaldehyde; soot. Weaver Report, 12/28/12, at 2. Group 1 carcinogens are carcinogens known to cause cancer in humans. She concluded, "it is my opinion, within a reasonable degree of medical certainty, that fire fighters are exposed to Group 1 carcinogens in the course of their work." *Id.* at 1.

Sladek also offered the expert opinion of Barry L. Singer, M.D. Dr. Singer is board certified in oncology, hematology, and internal medicine. N.T., 12/21/12, at 9. He is a practicing physician dedicating approximately seventy-five percent of his practice to

medical oncology and twenty-five percent to hematology. *Id.* at 10-11. He does not have expertise in toxicology or epidemiology. *Id.* at 17. Dr. Singer was unable to cite a study causally linking any particular Group 1 carcinogens firefighters encounter to malignant melanoma. N.T., 1/14/13, at 199-206. Instead, he used a "differential diagnosis" method to assess diagnosis and causation.[5] N.T., 12/22/12, at 46, 55. He opined that the differential diagnosis method was not an appropriate method for assessing causes of cancer in the general population, but it is an appropriate assessment practice for determining causation in a specific individual. *Id.* at 81. He expressed his opinion that carcinogens could be absorbed through the skin when encountered, enter the blood stream, and develop into malignant melanoma on any part of a person's body. N.T., 1/14/13, at 203. Dr. Singer authored a report summarizing Sladek's exposure to carcinogens as a firefighter, his medical history, and referenced three reports he found relevant in forming his conclusion. Singer Report, 5/8/12, at 1-3. He concluded, "it is my opinion that Mr. Sladek's exposure to carcinogens while working for the City of Philadelphia Fire Department was a substantial contributing factor in the development of his skin cancer malignant melanoma. . . . I hold all my opinions to within reasonable medical certainty."[6] *Id.* at 3.

---

[5] Dr. Singer explained that a differential diagnosis "is what we use to list all of the possibilities in terms of diagnosis that a patient can have in terms of diseases, causes of disease." N.T., 12/22/12, at 46. He explained that he then rules out "causes or conditions" before concluding what a patient's most probable diagnosis is and the cause of the diagnosis. *See id.* at 46.

[6] Dr. Singer authored a supplemental report in which he explained that his review of Sladek's testimony confirmed that Sladek was exposed to multiple Group 1 carcinogens as a firefighter. He specifically acknowledged that Sladek was employed in the fire administration building for a period of time. Singer Report, 4/1/13, at 1. Dr. Singer explained that his "review of [Sladek's] testimony does not change [his] opinion that Mr.

The City objected to Dr. Singer's expert opinion as incompetent as a matter of law based on the *Frye*[7] standard. *See* N.T., 1/14/13, at 257-258; N.T., 2/19/13, at 6-7. The City averred that Dr. Singer's methodology was not generally accepted in the scientific community. N.T., 1/14/13, at 257-258; *see id.* at 285-87.

The City offered the testimony of Tee Guidotti, M.D., M.P.H., D.B.A.T. Dr. Guidotti is board certified in internal medicine, pulmonary medicine, and occupational medicine. N.T., 1/21/13, at 10. He holds an additional non-medical diploma in toxicology, which he noted is referred to as "the science of poisons" and explained it involves "the science of how chemicals affect the body and how the body responds to those chemicals." *Id.* He is trained in epidemiology, which he explained involves assessing patterns of diseases in populations. *Id.* at 12. Dr. Guidotti reviewed Dr. Singer's assessment on causation and concluded that Dr. Singer's "differential diagnosis" approach was neither an appropriate nor accepted methodology to determine if a causal relationship exists between an agent and a given disease. Indeed, he was unable to discern any actual "methodology" applied by Dr. Singer. *Id.* at 22.

Dr. Guidotti described the difference between general and specific causation. He explained that general causation "tells us that something can cause an outcome. . . . So general causation is essentially a statement of what might happen. . . . [I]t is the big picture." *Id.* at 22-23. Specific causation involves an analysis of circumstances and risk factors present in a particular case. *Id.* at 23. Dr. Guidotti testified that the typical profile

---

Sladek's exposures as a firefighter to diesel fuel emissions, smoke, soot, and contaminated fire protective equipment were substantial contributing factors in his diagnosis with malignant melanoma." *Id.* at 1-2.

[7] *Frye v. U.S.*, 293 F. 1013 (D.C. Cir. 1923).

for developing malignant melanoma is sunburn early in life. *Id.* at 67. He also testified that to his knowledge, melanoma is not caused by inhaling any substance and further that he had "seen no evidence that arsenic is associated with malignant melanoma in general, let alone the issue of firefighters."[8] *Id.* at 68, 158-59. He did not review Sladek's medical records, nor did he purport to give an opinion on specific causation in this case. *Id.* at 148-49.

The City offered Sladek's medical records for the period of time he was treated by Mitchell Anolik, M.D., his dermatologist. Dr. Anolik's notes indicate he advised Sladek to wear sunscreen and avoid the sunlight. The City also offered an IARC publication which explained that ultraviolet radiation is the major environmental risk factor for the development of melanoma.

On October 1, 2013, the WCJ granted Sladek's claim petition. The WCJ credited Sladek's uncontradicted testimony establishing that he was examined prior to his employment and had no signs of cancer and that he had more than four years of continuous service as a firefighter with direct exposure to Group 1 carcinogens. She found Sladek's testimony credible. WCJ Op., 10/1/13, at 6-7. With respect to the expert opinions, she made the following findings:

> The testimony and opinions of Dr. Barry Singer have been carefully reviewed and considered in its entirety. 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. Dr. Singer's opinion that [Sladek's] malignant melanoma is a skin cancer caused by Group 1 carcinogens arsenic and soot is supported by the IARC

[8] He noted that squamous cell and basal carcinoma are two different skin cancers that may be associated with arsenic exposure. *Id.* at 159.

> monograms and literature describing the skin cancer risks of firefighters. . . . Dr. Singer's opinion that Claimant's uncontradicted exposure to Group 1 carcinogens were a significant contributing factor in his diagnosis with skin cancer malignant melanoma is found credible and accepted as fact.
>
> The testimony and opinions of Dr. Tee Guidotti regarding the method for offering a general causation opinion is not relevant or material to the relief/claim [*sic*] is seeking. The general causation opinion in epidemiology is not relevant to a claim for an occupational disease pursuant to Section 108(r) of the Act. Dr. Guidotti limited his testimony and opinion to general causation, and declined to offer an opinion regarding Claimant. Dr. Guidotti does not offer an opinion to contest Claimant's exposure to Group 1 carcinogens or whether Claimant's cancer is related to Group 1 carcinogens. To the extent to which the opinion testimony of Dr. Tee Guidotti is not consistent with the opinion testimony of Dr. Singer, the opinion testimony of Dr. Tee Guidotti is rejected.

Id. at 7. Thus, the WCJ concluded that Sladek established his entitlement to benefits.

The City appealed to the Workers' Compensation Appeal Board ("Board"). The Board affirmed the WCJ's determination that Sladek proved his melanoma was an occupational disease under Section 108(r). WCAB Op., 3/13/15, at 11-12.[9] The Board concluded that under the Act, "[w]here [a c]laimant has shown that he was diagnosed with cancer and had been exposed to Group 1 carcinogens, he met his initial burden and benefitted from the presumption that his malignant melanoma is related to his firefighting." *Id.* at 12 (citation omitted). It explicitly rejected the City's position "that Sladek did not meet his initial burden because he did not show that in the course of his firefighting he was exposed to a particular carcinogen that is causally linked to his specific cancer, malignant melanoma. *Id.* at 12-13. The Board continued that once a claimant demonstrates that the cancer is an occupational disease, the burden shifts to the employer to rebut the

[9] The Board reversed the portion of the WCJ order that awarded subrogation to Sladek's health insurer. That portion of the ruling is not before the Court.

presumption of causation. *Id.* at 14. Because Dr. Guidotti offered no evidence specific to Sladek's "individual malignant melanoma or what may or may not have caused it[,]" the City did not rebut the presumption. *Id.* at 14-15. The Board acknowledged that the City challenged the competency of Dr. Singer to offer an opinion, but found any "shortcomings" in the testimony to be immaterial. *Id.* at 16. Specifically, it reasoned, "the presumption to which Sladek is entitled regarding that causal relationship is sufficient to support an award of benefits, and where [the City] failed to rebut that presumption, the burden never shifted back to Sladek. . . ." *Id.* at 15-16.

The City appealed the decision to the Commonwealth Court, which, sitting en banc, vacated and remanded the Board's decision. *City of Phila. Fire Dept. v. W.C.A.B. (Sladek)*, 144 A.3d 1011 (Pa. 2016) (en banc). The intermediate appellate court concluded that Sladek failed to meet his initial burden to show "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." *Id.* at 1021-22 (emphasis in original). It further concluded that the Board erred when it rejected Dr. Guidotti's testimony because he did not offer an opinion specific to Sladek's case. The court explained, "Dr. Guidotti's testimony was relevant to both the initial question of whether Sladek's malignant melanoma was an occupational disease and to [the City's] rebuttal of the statutory presumption in Section 301(e) of the Act."[10] *Id.* at 1022. The court remanded

---

[10] Section 301(e) provides:

> § 413. Presumption regarding occupational disease
>
> > If it be shown that the employe, at or immediately before the date of disability, was employed in any occupation or industry

to the Board for consideration of whether the Act requires medical experts to meet the *Frye* standard and, if so, whether Dr. Singer satisfied that standard. *Id.* at 1023. It additionally ordered that if the testimony is found to be competent, the Board is to remand to the WCJ to determine whose causation opinion to credit. *Id.* at 1023.

This Court granted Sladek's petition for allowance of appeal to consider the following two issues:

> (1) Whether the Commonwealth Court, in a case of first impression, committed an error of law by misinterpreting Section 108(r) to require a firefighter diagnosed with cancer caused by an IARC Group 1 carcinogen to establish exposure to a specific carcinogen that causes his/her cancer in order to gain the rebuttable presumption provided by the law?
>
> (2) Whether the Commonwealth Court committed an error of law by concluding that a legislatively-created presumption of compensability may be competently rebutted by a general causation opinion, based entirely upon epidemiology, without any opinion specific to the firefighter/claimant making the claim?

City of Phila. Fire Dept. v. W.C.A.B. (Sladek), 167 A.3d 707 (Pa. 2017).

In his brief filed with this Court, Sladek argues that the Commonwealth Court's decision unreasonably increases a claimant's burden under Section 108(r) by requiring a firefighter-claimant to link a specific carcinogen to the cancer for which compensation is sought. Sladek's Brief at 17-18. He continues the General Assembly used clear, unambiguous language when it enacted Section 108(r), and he "is not required to prove that his diagnosis with cancer was caused by specific carcinogen exposures at work to

---

> 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. § 414.

pursue benefits" under Section 108(r). *Id.* at 19-20. He continues that had the General Assembly intended to require a heightened or more specific burden of causation on a claimant, it would have included such language in the relevant provisions. *Id.* at 20-22. Because Sladek provided uncontradicted evidence of his exposure to Group 1 carcinogens, and the WCJ credited Dr. Singer's testimony on causation, he contends that he met the requirements under Section 108(r) of the Act. *Id.* at 22-23. Finally, Sladek posits that the Commonwealth Court's interpretation would lead to an absurd result because it heightens the burden placed on a firefighter seeking benefits for a cancer diagnosis.

With respect to rebuttal of the evidentiary presumption, Sladek argues the plain language of Sections 301(e) and 301(f) of the Act make clear that a presumption of causation may not be rebutted by general opinions that are not specific to the claimant. *See id.* at 25-28. Relying on *Jeannette District Memorial Hospital v. W.C.A.B. (Mesich)*, 668 A.2d 249 (Pa. Cmwlth. 1995) (where, pursuant to Section 108(m) the claimant established an occupational disease and the employer was unable to rebut her presumption of causation with an alternative cause, she was entitled to benefits), he posits that it is "well-established that [the employer] cannot rebut the presumption of compensability without providing an opinion as to an alternate cause of claimant's disease." Sladek's Brief at 26.

Here, Sladek notes there is a "catch-all" provision at Section 108(n) that designates other conditions, not otherwise listed in Section 108, as occupational diseases as follows.

§ 27.1 Occupational diseases; definitions

. . .

> The term "occupational disease," as used in this act, shall mean only the following diseases.
>
> . . .
>
> (n) All other diseases (1) to which the claimant is exposed by reason of his employment, and (2) which are causally related to the industry of occupation, and (3) the incidence of which is substantially greater in that industry or occupation than in the general population. . . .

77 P.S. § 27.1(n). He argues that permitting an employer to defend against an occupational disease claim with general causation evidence not specific to the claimant essentially converts every occupational disease to a Section 108(n) claim. Sladek's Brief at 28-29. His argument continues that allowing general causation or epidemiology evidence to rebut a presumption of causation would unreasonably increase the burden on a claimant seeking benefits for an occupational disease. Under this rule, "[a] worker diagnosed with a listed occupational disease would be required to offer a general causation opinion based upon epidemiology regarding the incidence of the disease within his occupation, after offering specific medical evidence regarding his diagnosis and exposures." *Id.* at 29. Sladek highlights that in a workers' compensation claim, the claimant's burden is to establish an entitlement to benefits by a preponderance of the evidence; in his view, allowing a general causation testimony based on epidemiology, unreasonably increases the burden on a firefighter. *See id.* at 30-31.

The Pennsylvania Professional Fire Fighters Association (PPFFA) filed an amicus curiae brief in support of Sladek. The PPFFA argues that the passage of Act 46 amended the Act in an effort to lessen the burden on firefighters seeking a workers' compensation claim for cancer, and the Commonwealth Court's opinion "flies in the face of the General

Assembly's intentions." PPFFA Brief at 4. It draws a comparison between Section 108(r) and Section 108(o), regarding heart and lung disease, which provides:

> **§ 27.1 Occupational diseases; definitions**
>
> . . .
>
> The term "occupational disease," as used in this act, shall mean only the following diseases.
>
> . . .
>
> (o) Disease of the heart and lungs, resulting in either temporary or permanent total or partial disability or death, after four years or more of service in fire fighting for the benefit or safety of the public, caused by extreme overexertion in terms of stress or danger or by exposure to heat, smoke, fumes or gasses, arising directly out of the employment of any such firemen.

77 P.S. § 27.1(o). The PPFFA argues that the cases interpreting Section 108(o) reveal that there is no burden to prove general causation, notwithstanding the "caused by language." PPFFA Brief at 11; *see, e.g.*, *Dillon v. W.C.A.B. (City of Phila.)*, 853 A.2d 413, 418 (Pa. Commw. 2004) (explaining that the claimant "was entitled to the evidentiary advantage of the presumption in Section 301(e)" because he established exposure to harmful substances throughout his twenty-one year career and contracted heart disease); *City of Wilkes-Barre v. W.C.A.B. (Zuczek)*, 664 A.2d 90, 91-92 (Pa. 1990) (firefighter who showed he had "been exposed to fumes and other hazards as a fireman" entitled to the presumption that his heart disease arose from exposure). Thus, under Section 108(o), a claimant need only show development of heart or lung disease and exposure to the hazards listed in Section 108(o). PPFFA Brief at 11. By using the same language, the General Assembly intended the same interpretation, i.e., that a claimant seeking compensation under Section 108(r) need only establish development of cancer and

exposure to the Group 1 carcinogens before the statutory presumption applies. *Id.* Finally, it contends that the Commonwealth Court erred in concluding Dr. Guidotti's testimony was sufficient to rebut the causation presumption because Dr. Guidotti did not offer evidence on Sladek's case specifically. *Id.* at 12.

Conversely, the City grounds its argument in the General Assembly's inclusion of the words "caused by" in Section 108(r). It highlights that certain occupational diseases do not include causal language, and thus the inclusion of causal language in Section 108(r) is evidence of the General Assembly's intention to require a claimant to prove that his or her cancer is caused by the carcinogens to which he or she was exposed. City's Brief at 20-23; *see, e.g.*, 77 P.S. § 27.1(k) (defining as an occupational disease, "[s]ilicosis in any occupation with direct contact with, handling of, or exposure to the dust of silicon diocide"). The City posits that the language chosen by the Legislature in Section 108(r) creates a three-pronged initial burden on firefighter-claimants seeking benefits: 1) the firefighter must have cancer; 2) the firefighter must meet the criteria under Section 301(f); 3) the firefighter must prove that the cancer was "caused by" direct exposure to a Group 1 carcinogen. City's Brief at 23-25. According to the City, these three requirements serve as a "threshold issue" that the claimant must satisfy before the claim may continue. *Id.* at 25. The City contends the plain language of the statute supports its reading. It contends Section 108(r) requires a claimant to prove "plausibility," or general causation, i.e., that the cancer suffered by the firefighter is a type of cancer caused by Group 1 carcinogens encountered while firefighting.[11] *Id.* at 27-30.

[11] The City urges the Court to affirm the Commonwealth Court decision, but suggests a remand to consider the *Frye* issue is unnecessary because it is within the scope of this

With respect to Sladek's position that Dr. Guidotti's general causation testimony was insufficient to rebut a presumption of causation, the City contends this Court should not address the issue because Sladek failed to carry his initial burden, i.e., that he has an occupational disease under Section 108(r). *Id.* at 32. Alternatively, the City contends that Dr. Guidotti's testimony was indeed sufficient to rebut the presumption because he specifically disputed Dr. Singer's opinion that exposure to the occupational carcinogens has a proven causal nexus to developing malignant melanoma, and he noted that the only known exposure-related cause of melanoma is ultraviolet radiation exposure. *See id.* at 32-38. Finally, the City argues its and the Commonwealth Court's interpretation of the Act does not lead to an absurd and unreasonable result.

Delaware Valley Workers' Compensation Trust and the Pennyprime Workers' Compensation Trust filed an amicus curiae brief in support of the City's position. It contends that there is a prima facie burden of general causation imposed on a claimant before the statutory presumption attaches. Further, the amicus brief argues that as a policy matter, adopting Sladek's position would make firefighter cancer claims uninsurable because trusts "could not underwrite the risks under Act 46 at an affordable cost to their participating employers." Amicus Brief at 16.

Analysis

This appeal requires us to interpret statutory provisions and thus it presents a pure question of law over which our standard of review is de novo and our scope of review is plenary. *See, e.g., Phoenixville Hosp. v. W.C.A.B. (Shoap),* 81 A.3d 830, 838 (Pa. 2013);

Court's review to address the issue. However, the City does not develop any argument with respect to whether the *Frye* evidentiary standard applies to administrative proceedings.

Hoffman v. Troncelliti, 839 A.2d 1013, 1015–16 (Pa. 2003). As in all cases of statutory interpretation, our goal is to ascertain the intent of the General Assembly in adopting the statute. 1 Pa.C.S. § 1921(a). In doing so, we must, if possible, give effect to all the provisions of a statute. 1 Pa.C.S. §§ 1921, 1922. "In construing a statute, the courts must attempt to give meaning to every word in a statute, as we cannot assume that the legislature intended any words to be mere surplusage. *Reginelli v. Boggs*, 181 A.3d 293, 304 (Pa. 2018). Additionally, statutes that apply to the same class of persons should be read, where possible, in pari materia with each other. 1 Pa.C.S. § 1932; *Holland v. Marcy*, 883 A.2d 449, 455–56 (Pa. 2005)

The Act was amended in 2011[12] to add two provisions, Sections 108(r) and 301(f), dealing specifically with firefighters claiming benefits for cancer alleged to be caused as a result of performing the duties of firefighters. Generally, reading the sections together, the statutory framework for litigation of claims for workers' compensation benefits by firefighters afflicted with cancer proceeds in discrete stages. Initially, the claimant must establish that he or she has an "occupational disease," as that term is defined in Section 108(r).[13] 77 P.S. § 27.1(r). Next, to establish an evidentiary presumption of entitlement to compensation in accordance with section 301(f), the claimant must establish that he or she

---

[12] Act of July 7, 2011, P.L. 251, No. 46, §§ 1, 2.

[13] Occupational diseases are compensable under the Act. Section 301(c)(2) defines the terms "injury," "personal injury," and "injury arising in the course of his employment," as including "occupational disease as defined in Section 108 of this act." 77 P.S. § 411(2). Section 301(a) provides that "[e]very employer shall be liable for compensation for personal injury to, or for the death of each employe, by an injury in the course of his employment, and such compensation shall be paid in all cases by the employer, without regard to negligence ... ." 77 P.S. § 431.

(1) served four or more years in continuous firefighting duties;

(2) had direct exposure to a Group 1 carcinogen; and

(3) passed a physical examination prior to asserting a claim or prior to engaging in firefighting duties (and the examination failed to reveal any evidence of cancer).

77 P.S. § 414. Finally, if the claimant succeeds in demonstrating an occupational disease and an entitlement to the evidentiary presumption of compensability, then the burden of proof shifts to the employer, who must offer "substantial competent evidence that shows that the firefighter's cancer was not caused by the occupation of firefighting." *Id.*

I.

Section 108(r) - Occupational Disease

The express language of Section 108(r), namely that the claimant has a "cancer … which is caused by exposure to a known (Group 1) carcinogen" clearly imposes an initial burden of causation on the claimant. Importantly, however, the provision only requires the claimant to establish a general causative link between the claimant's type of cancer and a Group 1 carcinogen. In other words, the claimant must produce evidence that it is **possible** that the carcinogen in question caused the type of cancer with which the claimant is afflicted.[14] It does not require the claimant to prove that the identified

[14] We cannot agree with amicus PPFFA that Section 108(r) must be read consistently with prior interpretations of Section 108(o), which defines as an occupational disease "diseases of the heart and lungs … caused by extreme overexertion in terms of stress or danger or by exposure to heat, smoke, fumes or gasses, arising directly out of the employment of any such fireman." 77 P.S. § 27.1(o). According to the PPFFA, both this Court and the Commonwealth Court had held that Section 108(o), which contains the same "caused by" language as is in Section 108(r), does not require a firefighter-claimant to prove general causation. PPFFA Brief at 11 (citing *City of Wilkes-Barre v. W.C.A.B. (Zuczek)*, 664 A.2d 90 (Pa. 1995) and *Dillon v. W.C.A.B.(City of Philadelphia)*, 853 A.2d 413 (Pa. Commw. 2004).

Group 1 carcinogen **actually** caused claimant's cancer. Section 108(r) embodies a legislative acknowledgement that firefighting is a dangerous occupation that routinely exposes firefighters to Group 1 carcinogens that are known to cause various types of cancers. The "general causation" requirement under Section 108(r) constitutes a recognition that different types of cancers have different etiologies and it weeds out claims for compensation for cancers with no known link to Group 1 carcinogens. The burden imposed by Section 108(r) is not a heavy burden.

In this regard, epidemiological evidence is clearly relevant and useful in demonstrating general causation. Epidemiology deals with, inter alia, the identification of potentially causative associations in various populations between possible causative agents and the resulting incidence of particular diseases and seeks to generalize those results. In so doing, epidemiology may provide "useful information as to whether there is a relationship between an agent and a disease and, when properly interpreted, can provide insight into whether the agent can cause the disease." *See, e.g.*, *Blum by Blum v. Merrell Dow Pharm., Inc.*, 705 A.2d 1314, 1323–24 (Pa. Super. 1997), *aff'd sub nom.*

Contrary to PPFFA's argument, a comparison of the language in Section 108(o) and Section 108(r) is of scant utility in the interpretation of Section 108(r). While both sections use the phrase "caused by" in the text, the similarity ends there. Section 108(o) contains claimant specific elements of proof (e.g., four or more years of service in firefighting; exposure to the named hazards arising directly out of the employment of the firefighter). In contrast, Section 108(r) references only general causation without regard to particulars of the claimant's situation. It is devoid of any specific causation proofs. Instead, Section 301(f) details the proof required to establish a compensable injury by a firefighter with cancer. The design of Sections 108(r) and 301(f), when read together, indicate a clear intention to require proof of general causation under Section 108(r) and specific causation under Section 301(f). Indeed, making the comparison between Sections 108(o) and 108(r) leads to the conclusion that they cannot be interpreted the same way.

Blum ex rel. Blum v. Merrell Dow Pharm., Inc., 564 Pa. 3, 764 A.2d 1 (2000), *and abrogated on other grounds by Trach v. Fellin*, 817 A.2d 1102 (2003). Given its focus on identifying generalized causal relationships between potential causative agents and the resulting incidence of disease, epidemiology's focus on statistical analysis may be uniquely suited to illuminate whether there is a general causal relationship between types of cancer and Group 1 carcinogens.[15]

II.

Rebutting the Presumption of Compensability Under Section 301(f)

While epidemiological evidence supports the burden of establishing general causation, where the claimant has established an entitlement to the evidentiary presumption of compensability under Section 301(f), such epidemiological evidence is not sufficient to rebut the presumption. As the language of Section 301(f) plainly provides,

---

[15] We agree with the Commonwealth Court's decision to remand the case to the Board for a determination as to whether, in the first instance, the Act requires an expert to satisfy the *Frye* standard of Rule 702 of the Pennsylvania Rules of Evidence and to proceed accordingly with respect to the expert testimony of Dr. Singer, claimant's expert. There is evidence of record to question whether Dr. Singer applied generally accepted scientific methodologies.

For example, the City's expert, Dr. Guidotti, testified that there is considerable epidemiological evidence to support a causative relationship between malignant melanoma of the skin and sunlight exposure (sunburn), but no similar evidence to support a causative connection between malignant melanoma and the inhalation of any substance. Dr. Singer, conversely, testified that the inhalation of soot and arsenic is causative of malignant melanoma of the skin. Dr. Guidotti testified that Dr. Singer's review of epidemiological studies to reach this conclusion did not utilize the Bradford Hill criteria universally applied in the field of epidemiology. Dr. Singer stated that he had never heard of the Bradford Hill criteria. Dr. Singer further indicated that he relied upon the total number of epidemiological studies supporting his opinion, without any suggestion that the content of the studies had to be considered. Dr. Guidotti indicated disbelief that any expert would rely upon quantitative number of studies without any consideration of the quality of those studies and the accuracy of their statistical analysis.

the evidence required to rebut this presumption must show that "the firefighter's cancer was not caused by the occupation of firefighting." 77 P.S. § 414. The phrase "the firefighter's cancer" refers to the claimant's cancer, and thus requires the employer to sustain its burden of proof by demonstrating (1) the specific causative agent of claimant's cancer, and (2) exposure to that causative agent did not occur as a result of his or her employment as a firefighter. In other words, the language of Section 301(f) requires the employer to produce a medical opinion regarding the specific, non-firefighting related cause of claimant's cancer.

The nature of the evidence necessary to establish an "occupational disease" under Section 108(r) of the Act differs markedly from the nature of the evidence that an employer must present to rebut the evidentiary presumption of employment-related causation. Unlike the proof required under Section 108(r), the employer may not rebut the evidentiary presumption with generalized epidemiological evidence that claimant has a type of cancer that may (or may not) possibly be caused by a Group 1 carcinogen.[16] As indicated, epidemiological studies merely identify statistical associations between disease and potentially causative agents in broad populations, and thus do not provide any evidence demonstrating the specific cause of a particular claimant's cancer. To reach the stage of the proceedings at which the employer attempts to rebut the presumption of employment-related causation, the claimant has already carried his or her Section 108(r) burden of

[16] In dicta, the Commonwealth Court states that an entitlement to the evidentiary presumption relieved Sladek "of having to rule out other causes for his melanoma." *City of Philadelphia Fire Dep't v. W.C.A.B. (Sladek)*, 144 A.3d 1011, 1020 (Pa. Commw. 2016), *appeal granted sub nom. City of Philadelphia Fire Dep't v. Workers' Comp. Appeal Bd. (Sladek)*, 167 A.3d 707 (Pa. 2017). This pronouncement incorporates an incorrect statement of the relevant law. Regardless of the presumption, Claimants have no statutory burden to rule out other potential causes of their cancers.

proof that his or her cancer is of a type that may be caused by a Group 1 carcinogen. The employer may not rebut the evidentiary presumption merely by revisiting this determination and challenging its accuracy. At the rebuttal stage, the issue relates not to "types of cancer" relative to potential carcinogens, but rather requires proof of that the cancer from which the claimant suffers was not caused by his occupation as a firefighter.

Given the facts of this case and its procedural posture, the epidemiological opinion of Dr. Guidotti may be outcome determinative but not because it rebuts the evidentiary presumption arising under Section 301(f). Instead, if on remand, the Board determines that Dr. Singer's expert opinion does not satisfy the *Frye* standard, Sladek cannot carry his evidentiary burden of proof to establish an "occupational disease" under Section 108(r). The same result will obtain even if the Board determines that Dr. Singer's expert opinion satisfies the *Frye* standard, but also concludes that Dr. Guidotti's opinion is more credible on the question of general causation. In this scenario, the epidemiological evidence offered by the City through Dr. Guidotti would carry the day without the burden of proof with respect to the evidentiary presumption ever shifting to the City to prove specific causation. If the evidentiary burden does shift to the City, however, Dr. Guidotti's opinion would be insufficient to rebut the evidentiary presumption.

For the reasons set forth hereinabove, we reverse the decision of the Commonwealth Court and remand for proceedings consistent with this Opinion.

Justices Baer and Todd join the opinion.

Justice Wecht joins Part I of the opinion and files a concurring and dissenting opinion.

Chief Justice Saylor files a concurring and dissenting opinion.

Justice Mundy files a concurring and dissenting opinion in which Justice Dougherty joins.