

of the employee's workplace radiation dose measurements and concluded that there was no demonstrable association between the Navy occupational radiation exposure received by the employee and his leukemia.

By decision dated February 1, 2001, the Office denied the claim, finding that the evidence failed to establish that the claimed leukemia condition was causally related to factors of appellant's federal employment.

The employee passed away on March 15, 2001.² On March 15, 2002 appellant filed a Form CA-5 claim for death benefits. On March 21, 2002 she submitted a written statement in support of her claim for death benefits.

Appellant submitted a form report dated November 29, 2001, from Dr. David McCune, Board-certified in internal medicine, who stated on the form that "It is rarely possible to determine [the] cause of acute leukemia. In my opinion, it is possible that occupational exposure increase [decedent's] risk of leukemia and may have caused it." Appellant also submitted voluminous treatment reports documenting the employee's course of treatment for various conditions, including leukemia.

In addition, appellant submitted a February 20, 2002 notice of unsafe conditions from the Occupational Safety and Health Administration [OSHA] which outlined 14 different violations of health and safety codes at the shipyard where the employee was employed.

By letter dated April 9, 2002, the employing establishment controverted appellant's claim for death benefits.

By letter dated April 24, 2002, the Office advised appellant that it required additional medical evidence to establish that her husband's death was causally related to factors of his federal employment. The Office requested that she submit a medical report providing a history of the disease which caused or aggravated the condition resulting in death, a diagnosis of the disease, and an opinion bearing on the relationship of disease and death to factors of his employment, including medical reasons for the opinion. Appellant did not submit any additional medical evidence.

On April 24, 2002 the Office held a conference with appellant to discuss the case and outline the requirements for establishing her entitlement to death benefits. The Office stated that the employee died on March 15, 2001 as a result of acute respiratory distress syndrome after developing an infection while his immune system was depressed following treatment for acute myelogenous leukemia. The Office noted that appellant had previously filed a claim alleging that the employee's death was related to ionizing radiation. At the conference, she attributed her husband's condition to exposure to arsenic, chromium, copper dust, mistis, zinc and cadmium while employed at Puget Sound Naval Base between 1992 and September 17, 1999. The Office stated that it would prepare a statement of accepted facts and instructed appellant to provide a

² The death certificate indicated that the immediate causes of death were respiratory failure; pulmonary edema, congestion; immunosuppression, aspergillus and pseudomonas infection; and acute myocardial infarction clinically and acute myelogenous leukemia.

well-reasoned medical opinion from a physician to determine whether the employee's death was causally related to specific exposures to toxins at the shipyard. The Office advised appellant that Dr. McCune's November 29, 2001 report was not sufficient medical evidence to establish a causal connection between the employee's death and his exposure to toxins at his place of employment.

On May 2, 2002 the Office prepared a statement of accepted facts, indicating that the employee was exposed to lead, cadmium and ionizing radiation while working for 20 years with the employing establishment; that he was diagnosed with acute myelogenous leukemia; and that he died on March 15, 2001 of respiratory failure following aspergillus infection complicated by graft versus host disease. The statement of accepted facts and case record were referred to an Office medical adviser for review, who stated in a report dated May 17, 2002, that the extensive medical records contained in the case file showed no causal relationship between the employee's employment and his death. The Office medical adviser stated that, although the case file contained extensive medical records, appellant had not submitted sufficient medical evidence to accept the employee's leukemia as causally related to occupational exposure with the employing establishment.³

By decision dated October 11, 2002, the Office denied the claim for death benefits. By letter dated October 23, 2002, appellant requested a hearing, which was held on June 16, 2003. At the hearing, her attorney stated the circumstances of the employee's employment, alleging that his continuous and long-term occupational exposures to dangerous toxins formed a direct relationship with development of his illness with acute myelogenous leukemia and his subsequent death. Mr. Langhjelm noted that the employee's initial claim was based on exposure to radiation, but acknowledged that the employing establishment's radiation logs demonstrated that the exposure was within accepted limits. He stated that the employee's long-term workplace exposure to lead, cadmium, chromium, arsenic and particularly benzene, as identified by tests undertaken by Occupation Safety and Health Administration (OSHA), which were the precipitating factors that caused his acute myelogenous leukemia and subsequent death. Mr. Langhjelm referred to copies of two 1986 OSHA reports identifying these substances in the workplace environment which he subsequently submitted to the Office.

In a report dated July 18, 2003, Dr. John F. Carson, a Board-certified family practitioner, extensively reviewed the medical evidence and the employee's history of illness and exposure to toxins. He stated that the employee worked as a shipyard welder/burner and lead handler from March 1994 until he was diagnosed with acute myelogenous leukemia in September 1999. Dr. Carson related that the employee underwent semi-annual examinations which were normal until September 14, 1999, when a test detected abnormalities in his blood count. The employee's personal physician diagnosed acute myelogenous leukemia on September 17, 1999 and the results of additional laboratory screening performed on September 14, 1999 indicated well within normal limits for body levels of cadmium and lead, with beta-2 microglobulin

³ The Office medical adviser noted that the May 1, 2001 autopsy report indicated that the cause of death was respiratory failure due to aspergillus infection and adult respiratory distress syndrome. Contributing causes included acute myocardial infarction, immunosuppression, history of acute myelogenous leukemia and graft versus host disease. The Office medical adviser noted that there was no comment on what had caused the acute myelogenous leukemia.

significantly elevated. Dr. Carson advised that this resulted from the high blood cell turnover caused by the acute myelogenous leukemia.

Dr. Carson further found that during the employee's 20-year career with the employing establishment, he received limited occupational exposure to ionizing radiation. However, he advised that appellant's occupational exposure with the employing establishment was less than one-twentieth of the exposure to ionizing radiation received by the average American citizen over the same 20-year period. Dr. Carson stated that previous claims alleging occupational exposure to ionizing radiation as a cause for acute myelogenous leukemia had been denied. With regard to the naval base where the employee worked from 1994 to 1999, he noted that the results of an OSHA inspection undertaken in 1986 found that benzene was a combustion byproduct of polylyte polyester resin, a foam substance used to fill voids in planes and rudders on some U.S. Navy submarines. The OSHA inspection, however, found the benzene quantity, released by combustion, did not measure in concentrations sufficient to cause symptoms. Subsequent to this finding, however, the shipyard required all workers involved in cut-up operations to wear air-fed continuous flow respirators and contracted all future work on planes and rudders to private contractors operation outside the shipyard. The foams used in all ships worked on by the employee subsequent to the start of his employment in 1994 -- 8 years after the 1986 OSHA inspection and test results led to the replacement of the foam suspected of having benzene content as a byproduct of foam combustion -- were of a different composition than the foam tested by OSHA in 1986.

Dr. Carson stated that industrial hygienic sampling in the employee's workspace during his tenure at the shipyard revealed elevations in levels of lead that exceeded the OSHA permissible exposure level; he noted, however, that the employee wore personal protective equipment, including a highly efficient continuous flow air-fed respirator, which was monitored at least annually in accordance with the shipyard respiratory protection program. He further noted that canned lead or lead pockets did not contain PCB rubber or foam of any type, so there was no risk of PCB production with lead removal. Dr. Carson advised that other workplace sampling data for iron, cadmium, molbydenum, vanadium, manganese, chromium and beryllium were not significant. The semi-annual medical surveillance examination of the employee including blood testing for arsenic, lead and cadmium revealed no evidence of increased body burden or toxicity.

Dr. Carson then cited medical literature indicating that there was a likely relationship between benzene exposure and acute myelogenous leukemia. He also related that there was a likely causal relationship between cigarette smoking and acute myelogenous leukemia. In addition, Dr. Carson noted that the relationship between cigarette smoking and acute myelogenous leukemia may be related to the benzene content in inhaled cigarette smoke; he then related that the employee smoked one to two packs of cigarettes per day for 35 years. He further stated that the medical literature did not reveal any statistically significant relationship between exposure to manganese, arsenic, chromium, lead, nickel beryllium, molybdenum or vanadium and the development of acute myelogenous leukemia. Dr. Carson concluded:

“In [this] case, the development of acute myelogenous leukemia has a very low likelihood of an association with shipyard work exposures. [The employee's] potential for exposure to toxins in the shipyard was limited to a five-year period.

There was no definitive workplace source for exposure to toxins known to be associated with acute myelogenous leukemia, specifically benzene, identified during his period of employment. [The employee] was protected in the workplace by highly effective respirators and other personal protective equipment, known to protect him from other exposure for which there are measurable biological markets. There is no increase in the incidence in cancers or leukemia's in Kitsap County compared with other counties in Washington State. Workers in Washington State, performing the same or similar work as he did, have not shown an increased risk for cancer, leukemia's or acute myelogenous leukemia.

“In [the employee's] case, the development of acute myelogenous leukemia is likely to be associated to his long history of cigarette smoking. Cigarette smoke is known to contain benzene and other phenolic compounds associated with acute myelogenous leukemia. [The employee] had significant exposure to the toxins in tobacco smoke for 35 years without any respiratory protection.”

By decision dated September 22, 2003, an Office hearing representative affirmed the October 11, 2002 Office decision.

LEGAL PRECEDENT

Appellant has the burden of proving by the weight of the reliable, probative and substantial evidence that the employee's death was causally related to his federal employment. This burden includes the necessity of furnishing medical opinion evidence of a cause and effect relationship based on a proper factual and medical background.⁴

The medical evidence required to establish a causal relationship generally is rationalized medical opinion evidence.⁵ Rationalized medical opinion evidence is medical evidence which includes a physician's rationalized opinion on the issue of whether there is a causal relationship between the claimant's diagnosed condition and the implicated employment factors. The opinion of the physician must be based on a complete factual and medical background of the claimant,⁶ must be one of reasonable medical certainty⁷ and must be supported by medical rationale explaining the nature of the relationship between the diagnosed condition and the specific employment factors identified by the claimant.⁸

⁴ *Kathy Marshall (James Marshall)*, 45 ECAB 827, 832 (1994); *Timothy Forsyth (James Forsyth)*, 41 ECAB 467, 470 (1990).

⁵ *See Naomi A. Lilly*, 10 ECAB 560, 572-73 (1959).

⁶ *William Nimitz, Jr.*, 30 ECAB 567, 570 (1979).

⁷ *See Morris Scanlon*, 11 ECAB 384, 385 (1960).

⁸ *See William E. Enright*, 31 ECAB 426, 430 (1980).

ANALYSIS

In this case, the Office properly found that the medical evidence appellant submitted was not sufficient to establish that her husband's death was caused by factors of his federal employment. The March 15, 2001 death certificate indicated that the causes of death were respiratory failure, pulmonary edema, congestion, immunosuppression, aspergillus, pseudomonas infection, acute myocardial infarction clinically and acute myelogenous leukemia. The death certificate did not indicate, however, whether the decedent's death had been caused by an employment-related condition. The only medical evidence the employee submitted in support of her claim was the November 29, 2001 form report from Dr. McCune, who conceded on the form that it was rarely possible to determine the cause of acute leukemia. He further opined that it was "possible" that occupational exposure increased the decedent's risk of leukemia and may have caused it, but his report contained no references to any employment-related condition or disease which may have caused or contributed to the decedent's death. Appellant also submitted voluminous treatment reports documenting the decedent's course of treatment for various conditions, including leukemia, but none of these contained rationalized medical opinion evidence to demonstrate but did not submit a probative, rationalized medical opinion evidence demonstrating that the decedent's leukemia and death were causally related to employment factors.

The medical evidence appellant submitted fails to explain with reference to specific medical findings, how and why employment factors contributed to the employee's death. To be of probative value to her claim, the medical evidence must contain a rationale which addresses the specifics, both factual and medical, of the employee's death.⁹ Neither Dr. McCune's report, nor the voluminous treatment records provided the necessary medical rationale that the employee had any employment-related condition or disease which caused his death. Therefore, the medical evidence submitted by appellant is of little probative value. Further, the February 20, 2002 notice of unsafe conditions from OSHA was issued two and a half years after the employee stopped working at the shipyard and did not contain any medical evidence demonstrating that any of the identified health and safety violations caused or contributed to the employee's death.

An award of compensation may not be based on surmise, conjecture or speculation. Neither the fact that the employee's death occurred during a period of employment, nor the belief that his death was caused, precipitated or aggravated by his employment is sufficient to establish causal relationship. Causal relationship must be established by rationalized medical opinion evidence. Appellant failed to submit such evidence and the Office, therefore, properly found that she failed to meet her burden of proof to establish that her husband's death was caused by factors of his federal employment.¹⁰ Therefore, the Office properly found in its October 11, 2002 decision that appellant was not entitled to death benefits.

Following the October 11, 2002 decision, appellant requested an oral hearing, at which her representative contended that the employee's leukemia and subsequent death were causally related to his exposure to numerous toxic elements while working for the employing

⁹ *Victor J. Woodhams*, 41 ECAB 345, 353 (1989).

¹⁰ *Id.*

establishment. The employing establishment rebutted appellant's representative by submitting the July 18, 2003 report of Dr. Carson, who found that the employee's acute myelogenous leukemia and subsequent death were not causally related to factors of his employment. He extensively reviewed the medical evidence, the employee's history of exposure to toxins and the documented presence of toxic elements at the shipyard where the employee worked in this case and concluded that the employee did not suffer from any work-related conditions which could have contributed to his death. Dr. Carson advised that the development of acute myelogenous leukemia has a very low likelihood of being associated with shipyard work exposures. Dr. Carson stated that the employee's potential for exposure to toxins in the shipyard was limited to a five-year period, during which there was no definitive workplace source for exposure to toxins known to be associated with acute myelogenous leukemia, specifically benzene. The employee was protected in the workplace by highly effective respirators and other personal protective equipment, which were known to protect him from other exposures for which there were measurable biological markets. Finally, Dr. Carson advised that there was no increase in the incidence in cancers or leukemia's in the county where the employee lived in comparison with other counties in Washington and that workers in Washington performing the same or similar work as he did, did not show an increased risk for cancer, leukemia's or acute myelogenous leukemia.

Dr. Carson opined that the employee's development of acute myelogenous leukemia was most likely associated with his long history of cigarette smoking, which is known to contain benzene and other phenolic compounds associated with acute myelogenous leukemia. He noted that the employee had significant exposure to the toxins in tobacco smoke for 35 years without any respiratory protection. Dr. Carson, therefore, concluded that there was insufficient evidence in the record to link any employment factors to the employee's acute myelogenous leukemia and subsequent death on March 15, 2001.

The Board holds that the Office properly found that Dr. Carson's report demonstrating that the employee's acute myelogenous leukemia and subsequent death on March 15, 2001 were not caused by factors of his employment was sufficiently probative, rationalized and based upon a proper factual background. He thoroughly reviewed appellant's medical history, documented his exposure to toxic substances at the shipyard as well as the shipyard's history of inspections, taking safety measures and precautions to prevent the occurrence of occupational illnesses to its employees. Dr. Carson also reviewed the relevant medical literature and incidences of leukemia occurring in persons living in the surrounding area. Based on this exhaustive review and analysis, he properly concluded that there was no causal connection linking the employee's leukemia and subsequent death to exposure to any toxic elements while he was employed at the shipyard. For this reason Dr. Carson's opinion represents the weight of the medical evidence. Accordingly, the Board finds that his opinion supports the Office's September 22, 2003 decision, affirming the October 11, 2002 decision, denying compensation for death benefits. The Board, therefore, affirms the Office's September 22, 2003 decision.

CONCLUSION

The Board finds that the employee's acute myelogenous leukemia and subsequent death on March 15, 2001 were not causally related to factors of his federal employment.

ORDER

IT IS HEREBY ORDERED THAT the decision of the Office of Workers' Compensation Programs dated September 22, 2003 is hereby affirmed.

Issued: October 11, 2005
Washington, DC

Colleen Duffy Kiko, Judge
Employees' Compensation Appeals Board

David S. Gerson, Judge
Employees' Compensation Appeals Board

Willie T.C. Thomas, Alternate Judge
Employees' Compensation Appeals Board