

Presumption for COPD

Draft April 11, 2017

The SEM subcommittee has reviewed the current presumption for COPD (bulletin 16 – 02), and makes the following recommendations:

- (1) Bulletin 16-02 has serious deficiencies, and need substantial revision.
- (2) There is substantial evidence to support an expanded presumption for COPD

We find that the data presented in the study by Dement et al, 2015 and the additional references cited below justify an expansion of the presumption for compensation of COPD claims:

- a. **Covered exposures:** the following specific exposures should be presumptive because they impose a risk for COPD that is as great as the risk found by DOL in Bulletin 16-02 to be presumptive for asbestos: Asbestos; silica; cement dust; engine exhausts; acids and caustics; welding, thermal cutting, soldering, brazing; metal cutting and grinding; machining aerosols; isocyanates, organic solvents, wood dust, molds and spores; and particulates not otherwise regulated (PNOR¹). In addition, the scientific evidence supports the conclusion that exposures to the broad category of vapors, gases, dusts, and fumes (VGDF) increases the risk of COPD.
- b. Research supports the presumptions that the labor categories listed in Attachment 1 below had had significant exposure to VGDF; in the study by Dement 2015, which includes these labor categories, only 1.4% of cases and 2.5% of controls reported no VGDF exposures (see Supplemental Materials, Table IV-S.) However, attachment 1 is not inclusive, for there are many other labor categories in the DOL atomic weapons complex that have had significant exposure to VGDF as well. The committee recommends that Attachment 1 be expanded by adding “all construction and maintenance” In addition, this committee is recommending changes to the occupational history questionnaire to better assess each individual worker’s exposure to VGDF. ***If a worker reports exposure to VGDF on the OHQ and additionally meets other requirements recommended in this presumption, his/her exposure would be considered to aggravate, contribute to, or cause COPD***
- c. **Timing of exposure:** Because these exposures continue to take place on DOE sites and many of them are unregulated, it should be presumed that reported exposures to toxic substances that cause, contribute to or aggravate COPD at any period of employment covered by EEOICPA, up to the present time, are contributory exposures.
- d. **Duration of exposure.** Based on the evidence presented in the Dement 2015 study a duration of reported exposures to VGDF can be presumed to aggravate, contribute to, or

¹PNOR includes all mineral and inorganic “inert or nuisance dusts” without specific individual U.S. Occupational Safety and Health Administration Permissible Exposure Limits (PEL). See OSHA. *Chemical Sampling Information: Particulates Not Otherwise Regulated (Total Dust)* Washington, DC. 2015; *NIOSH Pocket Guide to Chemical Hazards: Particulates not Otherwise Regulated.* Atlanta, GA, 2015.

cause COPD. The 5 years can be accumulated by a combination of DOE employment and employment outside of DOE.

- e. **Time since last exposure:** The committee does not recommend specifying time since last exposure. COPD is a slowly progressive disease and individuals are often not diagnosed until the disease is advanced, or an intervening infection makes the diagnosis more apparent. Since it would not be possible to determine in retrospect when a case of COPD could have been first diagnosed, and since VGDF is a contributory cause to COPD, it is reasonable to assume that VGDF contributed to any diagnosed case even if the disease is diagnosed after the worker has left employment

Proposed Alternative Presumption for Adjudication of COPD

We recommend that OWCP replace the presumption it has established in Bulletin 16-02 with the following alternative presumption:

1. Any claimant with a physician's diagnosis of COPD who worked in any covered facility either (a) in any of the labor categories in Attachment 1, or (b) who reported exposure to VGDF on the OHQ for a period which in aggregate totals at least five years is presumed to have experienced sufficient exposure to toxic agents to aggravate, contribute to, or cause COPD.
2. Additionally, claims examiners should not deny claims for COPD if the worker had fewer than 5 years of exposure; for example, a claimant who has experienced high intensity exposures to VGDFs during work in a covered facility would have an equivalent exposure. Claims that do not meet the requirements set forth here but do have reported exposure to VGDF should be sent for IH and/or CMC review under the policy established in bulletin 16-03.

RATIONALE: Substantial medical literature has investigated the etiology of COPD among general populations in the U.S., Italy, New Zealand, Poland, Australia, Spain, and elsewhere (see reviews in ATS Statement, 2003; ATS Statement, 2010^(1;2)).

In 2003 the American Thoracic Society, which is the preeminent respiratory disease organization in the United States, published the enclosed paper concluding that occupational exposures were responsible for a substantial fraction of COPD in the United States. Another paper from the American Thoracic Society published in 2010, with Eisner as the lead author and the title "An Official American Thoracic Society Public Policy Statement: Novel Risk Factors and The Global Burden of Chronic Obstructive Pulmonary Disease," describes that there is a very strong and well accepted relationship between occupational exposures to vapors, gases, dusts and fumes (VGDF) and COPD; see the section starting on page 704. This document describes that it is a strong causal relationship and describes other literature that has identified some specific agents that are part of the overall occupational exposures to vapors gases dust and fumes. Table 5 in this paper lists some studies that have identified specific agents, including asbestos and quartz (quartz is another name for as crystalline silica).

Other primary research studies have defined the causative occupational exposures as a combined exposure VGDF. These large studies of varying study designs have consistently shown that

occupational exposures defined as “gases, dusts, vapors, and fumes” increase the risk of COPD. A dose-response relationship has been seen ^(7;8), and the effect is observed among both smokers and non-smokers ^(4;5). The effect of smoking and occupational exposures appears to be additive. A recent study by Dement et al looked at COPD and occupational risks in DOE facilities specifically, and found that VGDF significantly increased the risk for COPD ⁽⁹⁾.

COPD is caused by cumulative exposure, as demonstrated by the presence of a dose-response in population-based studies. This fact means that all on-going exposures to VGDF contribute and aggravate dust-induced COPD. Therefore, it is important that exposures outside the DOE complex be considered when determining if a minimal length of exposure has occurred to meet a presumption. Recommendations for a revised OHQ recommend assessment of VGDF over a worker’s lifetime.

Attachments:

- (1) Eisner MD, Anthonisen N, Coultas D, Kuenzli N, Perez-Padilla R, Postma D, et al. An official American Thoracic Society public policy statement: Novel risk factors and the global burden of chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 2010 Sep 1;182(5):693-718.
- (2) Balmes J, Becklake M, Blanc P, Henneberger P, Kreiss K, Mapp C, et al. American Thoracic Society Statement: Occupational contribution to the burden of airway disease. *Am J Respir Crit Care Med* 2003 Mar 1;167(5):787-97.
- (3) Balmes JR. Occupational contribution to the burden of chronic obstructive pulmonary disease. *J Occup Environ Med* 2005 Feb;47(2):154-60.
- (4) Blanc PD, Iribarren C, Trupin L, Earnest G, Katz PP, Balmes J, et al. Occupational exposures and the risk of COPD: dusty trades revisited. *Thorax* 2009 Jan;64(1):6-12.
- (5) Dement JM, Welch L, Ringen K, Bingham E, Quinn P. Airways obstruction among older construction and trade workers at Department of Energy nuclear sites. *Am J Ind Med* 2010 Mar;53(3):224-40.
- (6) Bergdahl IA, Toren K, Eriksson K, Hedlund U, Nilsson T, Flodin R, et al. Increased mortality in COPD among construction workers exposed to inorganic dust. *Eur Respir J* 2004 Mar;23(3):402-6.
- (7) Weinmann S, Vollmer WM, Breen V, Heumann M, Hnizdo E, Villnave J, et al. COPD and occupational exposures: a case-control study. *J Occup Environ Med* 2008 May;50(5):561-9.
- (8) Mehta AJ, Miedinger D, Keidel D, Bettschart R, Bircher A, Bridevaux PO, et al. Occupational exposure to dusts, gases, and fumes and incidence of chronic obstructive pulmonary disease in the Swiss Cohort Study on Air Pollution and Lung and Heart Diseases in Adults. *Am J Respir Crit Care Med* 2012 Jun 15;185(12):1292-300.
- (9) Dement J, Welch L, Ringen K, Quinn P, Chen A, Haas, S. A case-control study of airways obstruction among construction workers. *Am J Ind Med* 58:1083-1097, 2015.

Attachment 1
Significant VGDF Exposure: Associated Labor Categories and Job Tasks ²

Automotive mechanic; Vehicle mechanic; Vehicle maintenance mechanic

Boilermaker

Carpenter; Drywaller; Plasterer

Demolition technician; Laborer

Electrical mechanic; Electrician; Floor covering worker

Furnace & saw operator; Furnace builder; Furnace operator; Furnace puller; Furnace technician;
Furnace tender; Furnace unloader

Glazier; Glass installer; Glazer

Grinder operator; Mason (concrete grinding); Tool grinder; Maintenance mechanic (general
grinding); Welder (general grinding); Machinist (machine grinding)

Insulation worker; Insulation trade worker; Insulator

Ironworker; Ironworker-rigger

Maintenance mechanic; Electrician; Insulator;

Mason; Brick & tile mason; Concrete and terrazzo worker; Bricklayer, Tiler

Millwright

Heavy equipment operator; Operating Engineer

Painter

Pipefitter, Plumber steamfitter; Plumber/pipefitter; Plumbing & pipefitting mechanic; Plumbing
technician, Steamfitter

Roofer

Sheet metal mechanic; Sheet metal fabricator/installer

Welder; Welder burner; Welder mechanic

² Derived from ATSDR document on asbestos exposure, Case Studies in Environmental Medicine, Asbestos Toxicity, January 29, 2014.

Attachments 2-5

Eisner MD, Anthonisen N, Coultas D, Kuenzli N, Perez-Padilla R, Postma D, et al. An official American Thoracic Society public policy statement: Novel risk factors and the global burden of chronic obstructive pulmonary disease. *Am J Respir Crit Care Med* 2010 Sep 1;182(5):693-718.

Balmes J, Becklake M, Blanc P, Henneberger P, Kreiss K, Mapp C, et al. American Thoracic Society Statement: Occupational contribution to the burden of airway disease. *Am J Respir Crit Care Med* 2003 Mar 1;167(5):787-97.

Dement JM, Welch L, Ringen K, Bingham E, Quinn P. Airways obstruction among older construction and trade workers at Department of Energy nuclear sites. *Am J Ind Med* 2010 Mar;53(3):224-40.

Dement J, Welch L, Ringen K, Quinn P, Chen A, Haas, S. A case-control study of airways obstruction among construction workers. *Am J Ind Med* 58:1083-1097, 2015.

