represents a broad set of manifestations with several potential pathways of development and many unanswered questions for screening, diagnosis, and treatment.

Author disclosures are available with the text of this letter at www.atsjournals.org.

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Possible Alternate Explanation for Cases of Idiopathic Pulmonary Fibrosis

To the Editor:

In their paper on idiopathic pulmonary fibrosis (IPF) among U.S. veterans, Kaul and colleagues may have missed another set of factors possibly leading to an incorrect diagnosis among those found to have IPF (1). Exposure to various dusts, including asbestos, has been well documented as looking both radiologically and pathologically like IPF.

It would have been of interest to examine if navy veterans, most likely to have had significant exposure to asbestos, had a higher rate of disease than members of other services.

Also, from the map provided in the paper, three states with extensive mining activities, Montana, Kentucky, and West Virginia, had among the highest rates of IPF reported. This raises the question of the possible role of pneumoconiosis-producing dusts as being a possible more correct reason for the fibrotic changes.

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Reply: Possible Alternate Explanation for Cases of Idiopathic Pulmonary Fibrosis

From the Authors:

We thank Dr. Frank for his thoughtful comments. Our study (1) excluded patients with codes for pneumoconiosis, so veterans with diagnoses such as asbestosis or coal workers’ pneumoconiosis would have been excluded from our idiopathic pulmonary fibrosis (IPF) cohort. Per Dr. Frank’s suggestion, we incorporated military service line into our multivariable regression model to examine whether service in the navy was associated with higher odds of IPF and found no significant difference between the odds of IPF among male navy veterans and the odds of IPF among male army veterans (odds ratio, 1.0; 95% confidence interval, 0.98–1.02; P = 0.58).

We agree that more work is needed to better understand the role that exposures play in the pathobiology and etiology of fibrotic lung diseases, and collecting such data has been proposed (2). As highlighted by Dr. Frank, exposures are of particular importance to the veteran population. In addition to environmental risk factors, military exposures may also increase the risk of fibrotic lung disease.

Our intention in this study was to use the strength of the Veterans Affairs learning healthcare system to identify a population-based cohort to better understand the epidemiology of IPF in this unique population. Quantifying disease burden is challenging, and
recent literature has highlighted the opportunities and limitations of electronic health records (EHR data) in this space (3).

Dr. Frank’s commentary, however, highlights the more nuanced challenge of integrating exposure history into interstitial lung disease diagnostic frameworks. In our current conceptual model of IPF, pulmonary parenchymal fibroproliferation develops with age in genetically susceptible individuals as the alveolar epithelium is exposed to cumulative stress, resulting in acceleration of cellular senescence (4). Smoking is perhaps the most robustly defined inhalational association, but there is growing literature associating air pollution, vapors, gases, dust, and fumes with IPF as well (5–8). It is quite possible that asbestos, silica, and other occupational exposures capable of causing lung disease in their own right can also contribute to the pathogenesis of IPF through the more general mechanism of alveolar injury and repair.

Future IPF studies should leverage the EHR to investigate this convergence of gene and environment and attempt to distinguish more methodically and mechanistically between exposures that cause occupational lung disease (e.g., pneumoconiosis) and those that contribute to complex diseases of lung injury, repair, and aging, such as IPF. These studies will benefit from the investment of the Veteran Affairs system in genotyping of the veteran population and using EHR data to enable prospective data generation and investigation with the ultimate goal of facilitating better care for patients with pulmonary fibrosis.

Author disclosures are available with the text of this letter at www.atsjournals.org.

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