month of ivacaftor, so the investigators concluded that this therapy could possibly delay or prevent the development of CFRD in at-risk patients (4). On the basis of our experience with the patient described here, ivacaftor can potentially lead to the resolution of CFRD. Clinicians should be aware of this important potential benefit not only as a means to potentially delay or prevent the development of CFRD but also to correct well-established CFRD. ■

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

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Chronic Obstructive Pulmonary Disease Readmissions and Medicare Reimbursement

To the Editor:

I applaud the careful analysis of potential flaws in the use of 30-day readmission rates for chronic obstructive pulmonary disease as a quality measure that will determine so-called “value-based” Medicare reimbursement to hospitals (1). A problem not addressed by the authors is the apparent inability of Centers for Medicare & Medicaid Services to use data beyond what is on its claims form. Thus, it is well known that spikes in particulate and, to a lesser extent, ozone pollution will increase hospital admission rates of patients with cardiopulmonary disease. However, although the calculation allows for adjustment for a variety of patient-specific risk factors, it does not allow for institutional risk factors such as being in a low-income area or a relatively highly polluted area. One would think it would be a simple matter to query existing air quality monitors and assign an institution a risk adjustment based on its air quality history. The lack of consideration of ambient air quality in a hospital’s service area is especially egregious, as it is completely out of the hospital’s control. ■

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

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Reply

From the Authors:

We thank Dr. Edelman for his interest in our Pulmonary Perspectives piece discussing the addition of chronic obstructive pulmonary disease (COPD) to Medicare’s Hospital Readmission Reduction Program (1).

For the reasons outlined within our article, we believe the current evidence is insufficient to justify the use of 30-day all-cause readmission after COPD exacerbation as an accountability measure to penalize hospitals. We agree with conceptual framework, as described by Chassin and colleagues, that for a measure to be used for accountability, in contrast to being a potential indicator of quality, the relationship between the measure and desired outcome need to be tightly linked (2). The hospital readmission accountability measure does not achieve that threshold. As Dr. Edelman points out, there remain a number of issues that are outside of a hospital’s control (such as air quality) that contribute to the likelihood that a patient will be readmitted after an exacerbation of COPD, yet are not accounted for within the risk-adjusted readmission rates calculated under the Hospital Readmission Reduction Program.

Inclusion of COPD in the Hospital Readmission Reduction Program has brought significantly more national attention to this long-underrepresented condition, a possible benefit that may come from the new accountability measure. We continue to support having health care facilities and systems use data on variation in readmission to inform quality improvement initiatives targeting COPD. We also remain hopeful that this attention to COPD will result in the discovery of evidence-based interventions that decrease exacerbations and hospital admissions and improve the quality of life for the millions of Americans with this devastating disease. ■

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Interactions and Clarifying Group-Specific Estimates by Using Stratification

To the Editor:

Personal tobacco smoking has been accepted as the main environmental risk factor for the development of chronic obstructive pulmonary disease (COPD) in industrialized countries, with and without emphysema. However, for active smokers who also have the PI**MZ* genotype of α_1 -antitrypsin deficiency (AATD), the nature of the combined effect on the risk of COPD has been debated (1–4). If PI**MZ* heterozygosity augmented the adverse lung function effects of personal smoking, then smoking abstinence could avert the direct smoking effect as well as the extra lung function loss from the interaction itself.

The Irish National Targeted Detection Program that identifies COPD cases related to AATD has provided Molloy and colleagues with a unique opportunity to examine the relationship between PI**MZ* heterozygosity and spirometrically defined COPD for first-degree relatives of affected individuals (5). This analysis primarily investigated for an interaction between the effects of PI**MZ* heterozygosity and personal smoking on the post-bronchodilator spirometry of individuals who otherwise did not present with clinical disease. The main COPD finding of the abstract may also be interpreted as follows: for middle-aged to older PI**MZ* relatives of index cases, the study found with 95% confidence that personal smoking increased the odds of spirometrically defined COPD by a factor of at least 2.2 (P for interaction = 0.005), as compared with never-smokers. But, rather than reporting the estimates for never-smokers and ever-smokers separately, which is usual in the case of a significant interaction, the abstract highlighted the combined or nonstratified result. This effectively clouded the possibility that there may be no increased risk of COPD for PI**MZ* individuals who didn't smoke in contrast to the positive association for PI**MZ* individuals who did. A similar PI**MZ*–smoking interaction was found for continuous lung function outcomes when smoking was stratified into low- and high-exposure groups (less or more

than 20 pack-years), although the statistical basis for this stratification was not explicitly stated in the article.

The prevalence of PI**MZ* heterozygosity ranges between 2 and 4% in Western countries (4, 5), with a comparable low clinical expression of AATD that more frequently resembles an emphysematous phenotype. As such, the present study was able to include only 89 PI**MZ* relatives of affected individuals and 5 PI**MM* smokers and nonsmokers with spirometrically defined COPD (Global Initiative for Chronic Obstructive Lung Disease stage II–IV). These few numbers were reflected by wide confidence intervals, and the limited statistical power might have contributed to the null association for never-smokers.

Although the overall negative results for these never-smoking PI**MZ* relatives of index cases were acknowledged by the authors, the confirmation of such findings may arguably be more important than quantifying the “COPD risks” for ever-smokers. The Copenhagen General Population Study that measured α_1 -antitrypsin levels from a subset of more than 26,000 never-smokers without self-reported asthma essentially found no difference between those with and without COPD, as defined by prebronchodilator FEV₁/FVC less than the lower limit of normal (6). As AATD was regarded as an unlikely major contributor to COPD for never-smokers by this study, together these data might now offer a more positive and definitive message for asymptomatic never-smoking PI**MZ* relatives (1), their health-care providers, and AATD support groups. ■

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