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## Reply

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### To the Editor:

We appreciate the opportunity to respond to Drs. Jafarzadeh and Felson’s comments on our projected arthritis prevalence estimates. We have reviewed the letter from the authors arguing that 1) our estimates are subject to misclassification bias and 2) this bias can be corrected by incorporating the sensitivity/specificity of the self-report case definition using a Bayesian approach. We would like to provide 3 points of response.

First, conceptually Drs. Jafarzadeh and Felson do not provide corrected estimates of “self-reported doctor-diagnosed arthritis” as suggested in their title. Rather, they seek to modify those estimates to develop a “true prevalence” of “arthritis.”

Second, misclassification in the surveillance (and projections) for most any condition arises from many sources because of the tradeoffs required. For example, the case definition that we used purposefully excludes the back and neck because of the difficulty respondents would have attributing those problems to arthritis, nor does it list all types of arthritis.

Third, their complex methods require many assumptions that may introduce their own error. NHIS estimates vary from year to year, which is why we use 3-year averages; Drs. Jafarzadeh and Felson used only 1 year (2015) for their adjustments, assuming that it was fully representative. It is not clear that they used weighted data (they cite only unweighted 2015 data); weighted data must be used in complex survey designs like the NHIS. They assumed sex differences not provided in the validation study underlying their analysis (1). They projected prevalence to 2060—20 years beyond what we think is reasonable due to Census assumptions (2) about changing demographics of the population (e.g., immigration/emigration) that are increasingly susceptible to error the further out one projects.

Surveillance is a rough but practical exercise in understanding and predicting burden to educate the public, inform policymakers, target resources, and evaluate intervention programs (3). Among the key elements for surveillance are simplicity, representativeness, and stability (4), which we believe our current approach meets. Our previous 2030 projections have tracked relatively well with the actual prevalence (5,6), which suggests that our simple method of projecting arthritis prevalence is a reasonable approach that can be used over time to project and monitor what all would agree is a large and growing public health problem.

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