Reviewer's report

Title: Predictors of participation in preventive health examinations. Is there a "Healthy Screenee effect?"

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Reviewer: Ateev Mehrotra

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Summary:
In Austria, preventive health examinations (PHEs or “physicals”) are offered free of charge for the population and for young adults they are recommended every 3 years and for older adults (>65) every 2 years. Using a national random survey of Austrian residents they look at predictors of getting a PHE

They find that ~40% of all adults have received a PHE in the last three years. Factors associated with higher rates of receipt of PHE include (1) higher education/income (2) being born in Austria (3) better overall health and mental status (4) more chronic illnesses.

Review:
In general I find the methodology and results very straightforward. My concerns with the manuscript focus more on framing and interpretation in the introduction and results.

My biggest issue is that I was not clear why they did this study and why the results advance the science.

1. The sub-title of the manuscript is “Is there a “Healthee Screenee effect?” In general I hear this term used in the context of explaining why people who receive prevention have better outcomes. The idea is that people who receive preventive care might be more likely to have better outcomes not due to the preventive service, but rather because of the same factors that led them to get the preventive care.

While they discuss this a bit in introduction, I never understood why we get a better understanding of the healthy screenee phenomenon by looking at socio-demographic factors that predict likelihood of receiving a PHE in Austria. The results are mostly supportive of the healthy screenee effect - higher education/higher income/who feel better about themselves are more likely to get a PHE. Now that they know this, how does that help us understand the healthy screenee effect?

2. I was surprised they did not cite the many many studies on predictors of other preventive services (e.g. mammograms, colon cancer screening). Their results are mostly consistent with this prior work and that should be noted.
3. Another issue with goal of the study is that they never go into more depth on the controversy about PHEs. In fact, whether PHEs are helpful or not helpful is an issue of great controversy. This is an issue only tangentially addressed. The recent Cochrane review published this year on PHEs seemed to indicate little or no benefit from PHEs. Other studies and thought pieces they could consider citing from the US are included below.

They should obviously note this controversy. Also, it seems they should address the question of whether it is good or bad that 40% of Austrians get a PHE. Is that a waste of time and money? It would be useful to raise this issue in introduction and discussion.

Paul Han, Historical Changes in the Objectives of the Periodic Health Examination, Annals of Internal medicine, 1997, Pages 910-917

More minor issues:

1. Given the audience of this journal, it would be very helpful to give more context on the use of PHEs in other OECD countries. I'm most familiar with the US experience where PHEs are not recommended by any national guidelines, but many patients and physicians think they are helpful and payers will pay for them.

2. It would also be helpful to provide a bit more context on the financial issues for physicians related to a PHE. In the US, a PHE is reimbursed slightly higher than a regular office visit. So if a physician is seeing a patient every 2 months for a chronic illness, often the physician will call one of those regular visits a PHE to earn higher revenue. That is why patients with chronic illness are more likely to get a PHE. I'm not sure if that experience is relevant to the Austrian setting.

3. Does the survey include any questions about other contact with the health care system? If so, I would be interested in whether patients who see physicians for other reasons are also more likely to get a PHE. Chronic illness might be a rough proxy for utilization, but I wonder if there are others.

4. I was confused about who they believe should receive a PHE. In the abstract they state that PHEs should be targeted to younger adults. However, later they say the guidelines recommended older adults get more frequent PHEs.

5. They could compare their estimates to other countries. For example, the study above by Mehrotra and colleagues estimated use of PHE in the US.

6. In abstract, they should make it clear that ~40% of Austrians receive this “in the last three years”
7. While country of birth was an important predictor, it would be useful to explain why they included this variable in the model. It seemed an important predictor, but why.

8. Only 2/3 of patients responded to the survey. For many questions, this might not be an issue, but it seems to me that those who respond to the survey are more likely to get a PHE. They should note in their limitations that they could be overestimating the prevalence of PHEs due to survey response bias.

9. Their interpretation is that the rate of PHE are “high”. I question that interpretation. The Austrian government is recommending that people < 65 receive a PHE every 3 years, but only 40% of adults do so. That seems quite low. For adults over >65, one can guess that ~25% have a PHE every 2 years contrary to recommendations. They might want to comment on the low rate of PHE use.

10. The results section is quite hard to read. They might break up the single paragraph that goes on for 1.5 pages into several paragraphs. Also, instead of repeating the results in each table, they might consider just focusing on the key results and actually providing the numbers.

11. Very minor issue. In their Table 2, it was a bit awkward to make the reference group middle aged adults. They might consider making the reference group the oldest or youngest.

12. I didn’t find Table 3 results that helpful in understanding why PHEs are important. I would drop it or explain in more depth why looking at individual chronic illness diagnoses are important.

**Level of interest:** An article of limited interest

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests