Reviewer's report

Title: The relationship between local area economic conditions and the use of Veterans Affairs health services

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Reviewer: Anthony Daniel LaMontagne

Reviewer's report:

This is a relevant and well-written article addressing the relationship between contextual labour market conditions and the use of Veterans health services. Like many areas of the world, labour market opportunities have declined in the US, which has been linked to a reduction in the availability of employer-supported health insurance policies. This problem is likely to influence the most vulnerable populations in society first, such as Veterans, who often have a range of complicated health care needs.

Using the “behavioural model of health”, the authors recognise both the individual and area-level determinants of Veterans health service use. The main hypothesis investigated in the study was that local labour market conditions (unemployment rate) would affect individual use of Veterans health services through enabling factors such as income, employment, and the availability of insurance. The methodological approach is a sufficient match for the impressive sample size of the study.

The results of this study suggest that an increase in unemployment within a county was associated with an increased probability of accessing Veterans health care services. This indicates the increased relevance of publicly-funded health services during times of economic recession. In part, this result was found to be due to the loss of employer sponsored health insurance. The study identified significant differences across states of the US – emphasising the importance of controlling for area-effects (as was done through multi-level analysis approach). Policy implications were well articulated and justified by the findings (e.g., the need to consider budgetary responses so as to maintain VA’s mission of providing quality health services to veterans who require care, particularly those with few other options for care).

We suggest the following minor revisions.

Methodology:

• We are not sure that the sample should be described as cross-sectional, as the study was conducted over three periods. This is probably important to specify, given the rapid economic changes in the US, which could produce marked year-to-year differences.

• The authors should provide some justification for pooling 3 cross-sectional samples (e.g., why not one, four, five…?). Might this have been driven by statistical power considerations? Something else
• We are not familiar with the BRFS Survey—presumably it is a repeat cross-sectional survey, not a cohort/panel? So it’s therefore unlikely that there are repeat measurements on individuals over the 3 time periods?
• Local economic conditions refer to much more than the unemployment rate – I would reword this to better reflect what is actually being measured, such as “local labour market conditions”

Statistical analysis:
• This section was particularly well written and easy to follow and the calculation of marginal effects aided interpretation.
• The sensitivity tests conducted to assess the extent to which loss of health insurance influenced results was appropriate, as was the inclusion of a test to assess the potentially mediating effects of income of the employed sample.
• Please insert confidence intervals into the text of results. At the moment, only the p values are apparent.
• The authors briefly refer to testing or fitting interactions on page 8. Presumably the interactions were significant between age group (great/less than age 65) and county-level unemployment rate, and between individual-level employment status (employed/Unemployed) and county-level unemployment rate, to (statistically) justify those stratifications in Table III? Could the authors provide a bit more detail on this?

Results:
• On page 14 in the Discussion section, the second paragraph reports on another rbit of analysis (results presented in Table IV). This seems out of place in Discussion—belongs in Results section?
• Similarly, the cost implications of the authors findings are estimated and briefly reported on in the Discussion section (page 16). This adds considerable value to the paper (no pun intended…), and perhaps could also be reported in the Results section? This would require only minor additions to Methods.
• It would be interesting to see if the different priority groups of health care services within an area influenced health care utilisation (i.e., do areas with a greater number of veterans with levels of disability or who are living below the average wage have higher health care utilisation?). This additional analysis may be beyond the scope of the current paper (discretionary revision).

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.

Declaration of competing interests:
We declare that we have no competing interests.