Reviewer's report

Title: Disease profiles of detainees in a Swiss canton: Gender and age differences in substance abuse, mental health and chronic health conditions

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Reviewer: Adrian Hayes

Reviewer's report:

This article is an epidemiological analysis of physical and mental health (including substance misuse) profiles for prisoners in one region of Switzerland. It includes a large-scale and comprehensive dataset and provides comparison of special minority groups, ie elderly and female prisoners. I think it is an important and useful study, particularly for direct comparisons between the older and younger prisoners. A few comments and suggestions are below, all of which should be possible for the authors to amend.

Major Compulsory Revisions

1 - My main concern is in the quality of the data presented. The authors outline that the data comprise results of examinations by a GP on entry into prison, specifically for 76% of all people entering a prison in the Vaud canton during the year 2011. I was not clear on what makes up this examination. Given a primary focus of the paper on infective disease, were HIV/HBC/HCV etc tested on entry into prison? If not, were these diagnoses self-reported, or perhaps made available from community records. The provenance of the data will have a significant effect on the interpretability of the findings, eg the number of prisoners with those diseases who have never been tested, the number of prisoners for whom community records were not available, etc. The same is true for other physical health conditions – eg was blood pressure tested and hypertension diagnosed in prison, or did results come from self-report or previous records.

2 - There is a related point for psychiatric conditions. The authors state that these were made by a psychiatrist, indicating that this was a further interaction with health services over and above the GP examination. I would like more information on when this was carried out, and whether it was for all prisoners or only those selected by the GP for example. Unless the process is contemporaneous, presumably there was a group who received GP examination but were released or transferred before being seen by a psychiatrist – might this impact on the data?

3 - Prisoners included in this study were those received into one of the Vaud prisons in the year 2011. A group is reported who entered prison before 2011. I
assume these were people transferred from other sites – it might be helpful to clarify this. Moreover though, the data necessarily excludes prisoners already resident in prison who did not move sites during 2011. For these not to be in the statistics means that the figures are not showing the true prevalence of health conditions amongst prisoners. The authors themselves state, “Prison contributes to accelerate the biological process of aging and time spent in prison increases medical problems”, suggesting that those imprisoned for prolonged periods may have worse health than those newly received into custody. It would be useful to provide some information on the number of prisoners this relates to so that a view can be taken on the generaliseability of the population described here. It should alternatively (or additionally) be mentioned in the Limitations section.

- Minor Essential Revisions
1 - p2l6 - ‘substance abuse’
2 - There must be a more recent figure for the prevalence of substance misuse via injection comparing prison with community than 1984 (p3l11).
3 – p3l21 ‘problems are’
4 – p3l15 references should be ’16-19’
5 – p4l27 ‘substance abuse’
6 – p4l46 ‘stay’
7 – p5l21 ‘situations’
8 – p8l31 ‘substance users’
9 – p9l9 there is no need to abbreviate hepatitis B and C in the discussion where it has not been abbreviated elsewhere in the paper
10 – The authors state, “elderly prisoners were less likely than younger inmates to suffer from addictions”, but then state that alcohol abuse disorder was more frequent – this should be rephrased.

- Discretionary Revisions
1 – During discussion of alcohol addiction in several areas of the paper, the predominant comparison is made to that of Scotish prisoners. Scotland has one of the highest alcohol uses in Europe so it may be worth providing an additional comparison.
2 – I am unsure if it is the case in Vaud, but many countries have separate sites and separate service provision for male and female prisoners. The same is not true for elderly prisoners who are usually mixed in with the general prison population. It may be worth noting this in terms of how easy it would be to provide age/gender-specific services.
3 - 24% of the sample were not included in the analysis because they did not undergo GP examination, either because they refused a physical or were released/transfered before this could be carried out. It would be useful to know the proportions of these as refusers would presumably have a greater impact on
service need than those leaving prison quickly. It seemed that this group did all receive the initial health screen and it would be interesting to know if there were any difference between prisoners included and not included in the study on this screen to further inform generaliseability of the data.

4 – I did not find the mean number of physical chronic health conditions to be very useful on p6. It may be better to report these as percentage of the sample who had one/more than one condition.

5 – The statistically significant differences between groups are not terribly clear – if these could be added to the tables it would be much easier to see quickly the key differences.

6 – I am not sure of the rationale for combining personality and neurotic disorders. I believe these should be reported separately. I would also be interested in further information about specific personality disorders, and if there were differences in PD types between the groups.

7 – Could diabetes be added as a distinct condition reported?

8 – It may be worth noting that elderly females are not specifically reported here, but may have the additional problems relating to gender and age listed here – they are frequently neglected in research due to small numbers but are an important group.

Level of interest: An article of importance in its field

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