PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Early primary care physician contact and health service utilisation in a large sample of recently released ex-prisoners in Australia: prospective cohort study
AUTHORS	Young, Jesse; Arnold-Reed, Diane; Preen, David; Bulsara, Max; Lennox, Nick; Kinner, Stuart

VERSION 1 - REVIEW

REVIEWER	Ruth Elwood Martin University of British Columbia, Canada
REVIEW RETURNED	28-Apr-2015

GENERAL COMMENTS	Well done! A very interesting paper. STROBE checklist is included. I have some minor comments, which might help to improve clarity. Page 8, line 15 - I understood that all outcomes being studied are categorical? Page 10, line 19 onwards - i wonder if some discussion of these 478 excluded participants should be included in the discussion? What is the impact (if any) of these excluded individuals on the validity of your findings? Are the demographics of excluded participants similar to those excluded from similar published that follow people released from prisons? Also, I wonder if a flow diagram might be considered, to show the inclusion of participants for analysis in this study? page 11, line 18 - consider re-wording this sentence (and, others with similar wording). At first blush, it reads as, "Compared to the no-PCP-contact group, the PCP-contact group exhibited higher rates of mental health, AOD, ..." . Consider re-wording as, "Compared to the no-PCP-contact group, the PCP-contact group exhibited higher rates of utilization of mental health, AOD, hospital, and subsequent PCP services" page 11, line 24 - I don't know what this sentence means, "Subsequent PCP service utilization shows.....at the 3-month follow-up." Page 11, line 40 - consider re-wording this sentence as, ".....significantly more likely to utilize services, namely hospital (adjusted ...." Page 14, line 8 - I don't understand the two sentences, "Lastly, one month PCP contact..... periods are not similarly affected." Page 16, line 43 - suggest re-wording as, "Our results suggest that one-month PCP service utilisation is is associated with increased utilisation of mental health, AOD, hospital and subsequent PCP

	services for six months post-release in ex-prisoners."

REVIEWER	Richard Byng Plymouth University UK
REVIEW RETURNED	03-May-2015

GENERAL COMMENTS	Kinner et al This journal article reports an analysis from a previous database examining the association between primary care physicians during the month following release from prison with subsequent healthcare utilisation. The paper is well written and provides good evidence for attendance in the first month being associated with later healthcare utilisation. The abstract is clear. The background is well written. However the background could usefully explore the dilemma as to whether early contact with primary care should promote later reactive care as well as proactive primary care. The methods are well described. I'm not an expert on Cox and other similar regressions. The results are clear and useful subgroup analyses provide further breakdown. My one significant concern about the results is that it is not clear whether initial service contact with providers other than primary care has been used as a controlling variable. It is important to understand whether later service utilisation rates are associated with total service utilisation within the first month as well as total primary care physician utilisation within the first month. If it is only primary care utilisation then this provides compelling evidence for primary care being a facilitator. If not then it is possible that those gaining primary care access are also high users of other services. It seems a likely explanation which has not been fully explored in the results as far as I can see. The discussion is well written with good reference to the other literature and a balanced review of limitations. I would add to my previous comment above that the limitations pay insufficient attention to the potential for unmeasured confounders such as inclination to attend services. Again even if it is not possible to measure the total service attendance during the first month or numbers are too small to make such measures meaningful then it is possible that later health service attendance is primarily driven by factors other than a facilitation caused by primary care physician attendance in the first month.

VERSION 1 – AUTHOR RESPONSE

Reviewer Name Ruth Elwood Martin
Institution and Country University of British Columbia, Canada
Please state any competing interests or state 'None declared': None declared
Please leave your comments for the authors below Well done! A very interesting paper. STROBE checklist is included.

I have some minor comments, which might help to improve clarity.

Page 8, line 15 - I understood that all outcomes being studied are categorical?

-We thank the reviewer for pointing out this opportunity for further clarification. In tables 1 and 2 – an independent samples t-test is applied to compare the distributions of age as a continuous variable between the one-month PCP contact status groups. We have reviewed the text surrounding these tables to ensure that the nature of the outcome variable for this analysis is clear.

Page 10, line 19 onwards - i wonder if some discussion of these 478 excluded participants should be included in the discussion? What is the impact (if any) of these excluded individuals on the validity of your findings? Are the demographics of excluded participants similar to those excluded from similar published that follow people released from prisons? Also, I wonder if a flow diagram might be considered, to show the inclusion of participants for analysis in this study?

-We thank the reviewer for flagging this issue; it is pertinent to many cohort studies and we agree that this it is important to provide further context to the reader given the proportion of participants excluded from analysis. Overall, follow-up fractions were relatively high for longitudinal research in ex-prisoner populations. Currently, there is a paucity of information on the characteristics of excluded participants in the scientific literature for ex-prisoner cohort studies. However, the follow-up of Indigenous participants in rural and remote areas is notably difficult, often resulting in increased attrition for this subgroup,[1] and accordingly this was observed in the current study. We performed tests for informative censoring examining the potential association between one-month PCP contact and loss to follow-up; we found no evidence of bias due to informative censoring (p=0.987). Furthermore, the exclusion group characteristics related to a loss to follow-up were both associated with decreased (i.e., being younger and more likely to identify as Indigenous) as well as with increased PCP contact within one month (i.e., more likely to report a lifetime chronic condition and non-CNS medication use) in the study analyses. Although we cannot empirically determine the direction of influence this lack of follow-up data would have on our primary findings, from the available evidence it seems unlikely that lack of follow-up for this study would be differentially associated with one-month PCP contact. Thus, we would argue that it is unlikely that the study exclusions would result in selection bias that would substantially influence the strength of association or impact the generalisability of our current findings. Lastly, although we agree with the reviewer on the importance of clarity in the inclusion of participants, we opted not to include a consort diagram as a comprehensive figure outlining the study inclusion is included in the published Passports protocol paper[2] which has been appropriately referenced at the beginning of the methods section on page 6. We would suggest that the current study exclusion proportions and corresponding reasoning are clearly described in the first paragraph on page 10.

In order to provide further context regarding participant exclusion, we have included a few new sentences in the second paragraph on page 13 explaining the anticipated impact of these exclusions as both a potential source of bias and the implications for the generalisability of our findings.

page 11, line 18 - consider re-wording this sentence (and, others with similar wording). At first blush, it reads as, "Compared to the no-PCP-contact group, the PCP-contact group exhibited higher rates of mental health, AOD, ..." . Consider re-wording as, "Compared to the no-PCP-contact group, the PCP-contact group exhibited higher rates of utilization of mental health, AOD, hospital, and subsequent PCP services"

-We appreciate the reviewer’s attention to detail here. According to the reviewer’s recommendation, the sentence on page 11, line 18 has been amended. Sentences on page 11, line 55; page 12, line 9; and page 14, line 48 have been amended in a similar fashion to maintain consistency.

page 11, line 24 - I don't know what this sentence means, "Subsequent PCP service utilization shows.....at the 3-month follow-up."

-We thank the reviewer for the opportunity to clear up this ambiguity. This sentence is referring to the subsequent PCP service utilisation panel in Figure 1. This statement is to inform the reader why there are no 'failures' or incidences of subsequent PCP service use during the first 90 days because this outcome was only measured from the 3-month follow-up interview onward. We have amended this sentence to further clarify this for the reader.

Page 11, line 40 - consider re-wording this sentence as, ".....significantly more likely to utilize services, namely hospital (adjusted ...."

-This sentence has been amended according to the reviewer's suggestion.

Page 14, line 8 - I don't understand the two sentences, "Lastly, one month PCP contact..... periods are not similarly affected."

-The reviewer highlights an important opportunity for clarification. These sentences highlight the fact that our GP contact 'exposure' and primary service use outcomes at one month were assessed at the same time, therefore the temporal sequence of this association cannot be ascertained under the current study design. However, this is not the case for the utilisation of services during the 3-month and 6-month follow up periods as we are confident that these outcomes occurred after the one-month GP-contact. We have revised these sentences to improve clarity for the reader.

Page 16, line 43 - suggest re-wording as, "Our results suggest that one-month PCP service utilisation is is associated with increased utilisation of mental health, AOD, hospital and subsequent PCP services for six months post-release in ex-prisoners."

-This sentence has been amended according to the reviewer's suggestion.

Reviewer Name Richard Byng
Institution and Country Plymouth University UK
Please state any competing interests or state 'None declared': I have communicated with Stuart Kinner and plan to work together as we work in the same field

Please leave your comments for the authors below Kinner et al This journal article reports an analysis from a previous database examining the association between primary care physicians during the month following release from prison with subsequent healthcare utilisation. The paper is well written and provides good evidence for attendance in the first month being associated with later healthcare utilisation.

The abstract is clear. The background is well written. However the background could usefully explore the dilemma as to whether early contact with primary care should promote later reactive care as well as proactive primary care.

-We appreciate the reviewer's supportive comments and we agree that further background on the type of healthcare service use that early primary care contact may promote is valuable context for the reader. The current evidence suggest that the primary effect of early PCP contact would be to increase preventive care[3,4] and may decrease reactive care[5,6] provided that the primary care continuity is maintained on an ongoing, regular basis; the quality of the service contacts is optimal;[7] and trust is established early on in the patient-physician relationship.[8] Accordingly, we have added two sentences on page 4, paragraph 2 describing prior research findings on the influence of PCP contact on the type of care, utilisation, and care seeking-behaviour in the general population. A phrase has also been added to the first sentence on page 5, to emphasise the documented

importance that the establishment of trust has for ex-prisoners' healthcare engagement.

The methods are well described. I'm not an expert on Cox and other similar regressions. The results are clear and useful subgroup analyses provide further breakdown.
My one significant concern about the results is that it is not clear whether initial service contact with providers other than primary care has been used as a controlling variable. It is important to understand whether later service utilisation rates are associated with total service utilisation within the first month as well as total primary care physician utilisation within the first month. If it is only primary care utilisation then this provides compelling evidence for primary care being a facilitator. If not then it is possible that those gaining primary care access are also high users of other services. It seems a likely explanation which has not been fully explored in the results as far as I can see.

-The reviewer raises an important and valid methodological consideration. Various ways of addressing the general propensity for health service use and further isolating the effect of one-month PCP contact were explored during analyses. However, as we did not have access to administrative service use data for this investigation it is not possible to provide a meaningful measure of total service utilisation within the first month. Our subsequent work with other data has indicated that very few people contact other services in the first 4 weeks post-release, so this is unlikely to substantially bias our primary findings. Prior research conducted in this cohort has indicated that the K10 and CNS medication use as markers of poor mental health are strongly correlated with each other and predicted the utilisation of health services.[9] In order to address this potential confound we rigorously constructed our final model to adjust for covariates such as K10 score, current use of CNS medication, and lifetime prevalence of a chronic condition as proxy indicators of a propensity to access healthcare services. Nonetheless, with the current methodology we cannot discount the possibility that early PCP contact is a marker for a general propensity to contact services for ex-prisoners, and it is this propensity that predicts subsequent utilisation of health services. Thus, this represents a limitation of the current study; we have revised the relevant section of the Discussion to give due consideration to this limitation (see also below).

The discussion is well written with good reference to the other literature and a balanced review of limitations. I would add to my previous comment above that the limitations pay insufficient attention to the potential for unmeasured confounders such as inclination to attend services. Again even if it is not possible to measure the total service attendance during the first month or numbers are too small to make such measures meaningful then it is possible that later health service attendance is primarily driven by factors other than a facilitation caused by primary care physician attendance in the first month.

-We agree with the reviewer that this limitation should be further addressed for the readers benefit and we believe this has improved the synthesis of our findings. As indicated in the comment above, this represents a limitation of our study which we have addressed by revising the first sentence on page 15. The revised sentence now discusses the possibility that our findings could be due to increased morbidity or a general propensity to access healthcare services and reinforces to the reader that causal inferences cannot be made given the current methodology. Additionally, a phrase has been added on page 17, recommending that future research utilise an RCT design targeted at establishing a causal relationship between PCP contact and increased utilisation of health services in ex-prisoners.

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intervention for ex-prisoners in Australia. Contemporary Clinical Trials. 9// 2013;36(1):198-206.
3. Forrest CB, Starfield B. Entry into primary care and continuity: the effects of access. American Journal of Public Health. 1998;88(9):1330-1336.
4. Starfield B, Shi L, Macinko J. Contribution of Primary Care to Health Systems and Health. Milbank Quarterly. 2005;83(3):457-502.
5. Weber EJ, Showstack JA, Hunt KA, Colby DC, Callaham ML. Does lack of a usual source of care or health insurance increase the likelihood of an emergency department visit? Results of a national population-based study. Annals of Emergency Medicine. 1// 2005;45(1):4-12.
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7. Bindman A, Grumbach K, Osmond D, Vranizan K, Stewart A. Primary care and receipt of preventive services. Journal of General Internal Medicine. 1996/05/01 1996;11(5):269-276.
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