PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	New alumni EXperiences of Training and independent Unsupervised Practice (NEXT-UP): Protocol for a cross-sectional study of early career general practitioners.
AUTHORS	Magin, Parker; Moad, Dominica; Tapley, Amanda; Holliday, L; Davey, Andrew; Spike, Neil; FitzGerald, Kristen; Kirby, Catherine; Bentley, Michael; Turnock, Allison; van Driel, Mieke L; Fielding, Alison

VERSION 1 - REVIEW

REVIEWER	Sven Streit Institute of Primary Health Care (BIHAM) University of Bern Bern, Switzerland
REVIEW RETURNED	28-Feb-2019

GENERAL COMMENTS	Thank you for the opportunity to review the protocol of this Australian cross-sectional study. The aim is to assess characteristics of early-career GPs, associations with earlier GP training and their perception about if and how the training prepared them well for practice. The authors aim at about 650 responses from three training sites covering a large proportion of the total target population of GP trainees. They outcomes will be assessed by questionnaires (paper and or online) as well as through linking to data from an earlier study. Here some minor suggestions and comments when parts were not clear: 1. I struggle to comprehend in the title "independent unsupervised practice". I suggest to describe ways and meaning of independent and unsupervised in the paper. 2. Background: The reference list seems uptodate and appropriate but relies mainly on Australian papers for the background. An international reader would appreciate some context that is not limited to the country of origin of this study. On the other hand, it is not clear if this is the first study evaluating former GP trainees in Australia. 3. Duration of the study: The three year timeline is not justified but could be e.g. by sample size or practical considerations.

	4. Methods a) This study made extensive sample size consideration and estimates on precision. I therefore rather not call it "exploratory" (page 6, line 55) and remove this sentence. b) Explain geographic footprint (page 7, line 13) c) 110 of 1300 registrars participated in the ReCEnT Study (page 8, line 29). My problem is to understand i) why the participants have to be linked to ReCEnT in the first place (when <10% participated) and ii) if I misunderstand "some alumni will not have participated in the ReCEnT study" (page 18, line 6). I suggest clarification and if only <10% participated to rephrase "the minority" (will have participated...). d) How was the survey developed and tested? e) comparing RTO-provided Training versus in-practice vocational training (page 13, line 45) would benefit from a description to make it easier for readers to understand the difference (and why it matters in this study). 5. Ethics Although pseudo-anonymized I could think of former GP trainees not wanting to answer to questions and either become non-responders or answering socially desirably. For example a registrar finished training but did not become rural doctor although attending rural training. The authors should clarify if they share this risk and how they would account for it.

REVIEWER	Alex Harding University of Exeter Medical School United Kingdom of Great
REVIEW RETURNED	12-Mar-2019

GENERAL COMMENTS	The protocol is written in a refreshingly clear style and navigates effectively through the relevant justifications and policy implications of the findings. However, perhaps the introduction could reference work in other countries (as similar issues exist there) and in this way might significantly increase its international appeal. In the UK, the relevant document may be the Wass report 1 which clearly describes similar issues in the UK. The protocol appears thorough and appropriate statistical advice has been taken and the numbers appear sufficient to enable meaningful statistical calculations and associations to be made. I do wonder at the length of the questionnaire itself. The authors have clearly had experience in their local field and I am assuming that there is still appetite to complete long questionnaires like this in Australia. There is considerable fatigue in other locales. If the completion rate is less than 50% how will this impact on the ability to gain statistical significance? There are a few other considerations regarding the protocol. Firstly, the end result will be a lot of quantitative data and statistical relationships. This can be useful but is unlikely to be helpful in elucidating mechanisms of association between the variables. This is arguably the most valuable / useful information. It may be that there is an appetite for further qualitative work after this quantitative exploratory work but I do wonder if

	perhaps some qualitative data is appropriate here that may sensitise the authors to potential explanatory mechanisms / guide future qualitative approaches. This does however make the questionnaire more onerous to fill out. There are issues to do with the temporal aspects of data collection. A lot of the data appears important to collect routinely. I wonder at the power of a one-off data collection exercise like this. It would be helpful / reassuring to know that there are plans for a future repeat data collection exercise like this so that any interventions that are made as a result of this study (and surely that is the point) can be evaluated. Longitudinal approaches to data collection such as this have been a powerful forces for change in undergraduate UK education 2 Finally, I do wonder if this questionnaire might be adapted in time for international use. As discussed, many of the issues highlighted in the introduction are relevant internationally. Organisations such as SAPC in the UK or NAPGGRAG in the US might be initial starting points for contacts. In summary, its important data and the protocol (with the caveats indicated re length of questionnaire) appears well-thought through and well organised. I would support publication – perhaps with some thought given to the comments made. [1] Wass V, Gregory S, Petty-Saphon K. By choice—not by chance: supporting medical students towards future careers in general practice. London: Health Education England and the Medical Schools Council. 2016. [2] Harding AM, Rosenthal J, Al-Seaidy M, Pereira-Gray D, McKinley RK. Provision of medical student teaching in UK general practices: a cross-sectional questionnaire study. British Journal of General Practice. 2015;65:302-303.

VERSION 1 – AUTHOR RESPONSE

Reviewer #1:

1. I struggle to comprehend in the title "independent unsupervised practice". I suggest to describe ways and meaning of independent and unsupervised in the paper.

The use of the term “independent unsupervised practice” is a common descriptor in Australian GP training but we appreciate it may not be so in other countries. For our international audience we have amended this (Introduction: Background and rationale; paragraph 7; last sentence)

2. Background: The reference list seems up-to-date and appropriate but relies mainly on Australian papers for the background. An international reader would appreciate some context that is not limited

to the country of origin of this study. On the other hand, it is not clear if this is the first study evaluating former GP trainees in Australia.

We have added to the background acknowledgement of the international context. This has included adding international references for GP workforce issues, including shortages and maldistribution, and the impact of rurality and socioeconomic status on GP training and independent practice.

As in Australia, internationally there is limited research actually tracking subsequent practice for GP trainees. In Australia, RAPPoRT (our previous, smaller, study) is the only study in this area that we are aware of. We have added an acknowledgment of this context to the 'Background and rationale' (Introduction; Background and rationale; paragraph 6).

3. Duration of the study: The three year timeline is not justified but could be e.g. by sample size or practical considerations.

This is a cross-sectional study with a staged mail out of questionnaires over a 5-month period in 2018-2019. We will have recruited alumni who were in training subsequent to the major restructure of Australian GP training that occurred in late 2015/early 2016. To have included alumni from earlier years was impractical as, for many, their participation and training records were no longer accessible. The study structure was therefore based on practical consideration rather than a sample size calculation, with the power calculation following from that practical consideration. We have clarified the duration of the study in the manuscript (Methods; Eligibility criteria; paragraph 1, sentence 2)

4. Methods

a) This study made extensive sample size consideration and estimates on precision. I therefore rather not call it "exploratory" (page 6, line 55) and remove this sentence.

This sentence has been removed as suggested (Methods; Outcome; paragraph 1).

b) Explain geographic footprint (page 7, line 13)

Geographic footprint refers to the territory within the government-set boundaries of the RTO. The geographic footprints of the nine RTOs cover the whole of Australia (Methods; Outcome; paragraph 2).

c) 110 of 1300 registrars participated in the ReCEnT Study (page 8, line 29). My problem is to understand i) why the participants have to be linked to ReCEnT in the first place (when <10% participated) and ii) if I misunderstand "some alumni will not have participated in the ReCEnT study" (page 18, line 6). I suggest clarification and if only <10% participated to rephrase "the minority" (will have participated...).

Thank you for identifying the lack of clarity in our original text. We acknowledge this sentence was ambiguously worded, and we have corrected this in our revised manuscript (Methods; Sample size; paragraph 1). The 110 in the original manuscript text referred only to GP Synergy alumni and did not include alumni from EVGPT and GPTT (where all registrars had participated in ReCEnT). In fact, we calculate approximately 486 of eligible NEXT-UP participants will have participated in ReCEnT (37%).

While ReCEnT data will provide only a minor contribution, it reflects our attempts to base any findings on the best available data. In this study we are attempting to use contemporaneous data as much as possible (rather than relying on participant's retrospective recording), thus reducing recall bias as well as reducing the burden of completing the questionnaire for those who consent to the linking of their data to data previously collected during training. Most of the contemporaneous data we anticipate using in our analysis will be from routinely recorded training data. However, we expect that there will be some missing data in this, and we will use comparable ReCEnT data where this occurs.

d) How was the survey developed and tested?

We have included an explanation of how and by whom the survey was developed and tested. See changes made in our revised manuscript (Methods; Data collection methods; paragraph 1 and 2). As we have written, the piloting suggested seven minutes for completion of the questionnaire. As a result, the information sheet for the study included a statement that the questionnaire should take less than 10 minutes to complete.

e) comparing RTO-provided Training versus in-practice vocational training (page 13, line 45) would benefit from a description to make it easier for readers to understand the difference (and why it matters in this study).

We have provided an explanation of RTO-provided training verses in-practice vocational training. See changes made (Methods; Study setting; paragraph 3)

5. Ethics

Although pseudo-anonymized I could think of former GP trainees not wanting to answer to questions and either become non-responders or answering socially desirably. For example a registrar finished training but did not become rural doctor although attending rural training. The authors should clarify if they share this risk and how they would account for it.

Thank you for raising this concern. We believe that having achieved Fellowship and being in independent practice, alumni are unlikely to be concerned that their current practices and their opinions relating to their former RTOs will have implications for them personally. Relevant to the example of rurality, the questionnaire elicits postcode of practice rather than directly asking for rurality of practice. The postcode is then used to classify rurality of the alumnus practice using a standard rurality geographic classification. While we acknowledge that there may be potential for social

desirability bias when an individual's prior plans are not adhered to, we feel it is very unlikely that an alumnus would provide an incorrect postcode.

Reviewer #2

However, perhaps the introduction could reference work in other countries (as similar issues exist there) and in this way might significantly increase its international appeal. In the UK, the relevant document may be the Wass report 1 which clearly describes similar issues in the UK.

We agree with Reviewer 2's comment, and that of Reviewer 1, regarding the international context of this study. We have incorporated further international literature into the manuscript including citing Professor Wass' report (Introduction: Background and rationale; paragraph 1).

I do wonder at the length of the questionnaire itself. The authors have clearly had experience in their local field and I am assuming that there is still appetite to complete long questionnaires like this in Australia. There is considerable fatigue in other locales.

We acknowledge responder fatigue is also an issue for Australian GPs. However, in terms of length of the questionnaire, while it is comprehensive, we feel it is not overly burdensome. The questionnaire was based on the questionnaire previously used in the RAPPoRT study (in which there was a response rate of 37%) but was shortened significantly. On piloting it took seven minutes to complete, which we believe is a reasonable expectation. The anticipated response rate for NEXT-UP was based on lessons learnt from the RAPPoRT study including;

a) recruiting alumni within two years of Fellowship, rather than five. We expect this will make alumni easier to locate for invitation to participate, and also that they will have had a more recent connection with their former RTO

b) a shorter questionnaire, which includes the option to not record demographic and training details if they consent to the linking of their questionnaire with their RTO held data

c) a participation incentive of a gift card (not used in RAPPoRT)

If the completion rate is less than 50% how will this impact on the ability to gain statistical significance?

Any decrease in completion rate will affect power of the study. It is worth noting however, that in the RAPPoRT study a number of outcomes were of statistical significance. The sample frame for NEXT-UP includes an absolute number much higher than that of RAPPoRT, so we anticipate a larger number of participants even if the response rate is lower than expected.

Firstly, the end result will be a lot of quantitative data and statistical relationships. This can be useful but is unlikely to be helpful in elucidating mechanisms of association between the variables. This is

arguably the most valuable / useful information. It may be that there is an appetite for further qualitative work after this quantitative exploratory work but I do wonder if perhaps some qualitative data is appropriate here that may sensitise the authors to potential explanatory mechanisms / guide future qualitative approaches. This does however make the questionnaire more onerous to fill out.

We agree with Reviewer 2. This study provides another step in what we hope to be an ongoing area of research for us and our collaborators, as this area is extremely important for GP vocational training. We anticipate qualitative research will be an essential part of our planned approach - as we have done, for example, in our work in the area of registrars' prescribing of antibiotics for respiratory tract infections. In this work, our qualitative research expanded and illuminated our quantitative findings. It elucidated the context and drivers of antibiotic prescribing and the mechanisms of changes in prescribing in response to an educational intervention.1-4

Finally, I do wonder if this questionnaire might be adapted in time for international use. As discussed, many of the issues highlighted in the introduction are relevant internationally. Organisations such as SAPC in the UK or NAPGGRAG in the US might be initial starting points for contacts.

Thank you for your suggestion. Yes, we note the common paucity of literature in this area in Australia and internationally (and, as above, have now included acknowledgment of this in our revised manuscript, based on yours and reviewer 1's feedback).

We would welcome international interest in this study, and the questionnaire.

References:

1. Dallas A, Magin P, Morgan S, et al. Antibiotic prescribing for respiratory infections: a cross-sectional analysis of the ReCEnT study exploring the habits of early-career doctors in primary care. Fam Pract 2015;32(1):49-55. doi: 10.1093/fampra/cmu069 [published Online First: 2014/11/02]

2. Dallas A, van Driel M, van de Mortel T, Magin P. Antibiotic prescribing for the future: exploring the attitudes of trainees in general practice. Br J Gen Pract 2014;64(626):e561-7. doi: 10.3399/bjgp14X681373 [published Online First: 2014/09/03]

3. Magin P, Tapley A, Morgan S, et al. Reducing early career general practitioners' antibiotic prescribing for respiratory tract infections: a pragmatic prospective non-randomised controlled trial. Fam Pract 2018;35(1):53-60. doi: 10.1093/fampra/cmx070 [published Online First: 2017/10/07]

4. Deckx L, Anthierens S, Magin PJ, et al. Focus on early-career GPs: qualitative evaluation of a multi-faceted educational intervention to improve antibiotic prescribing. Fam Pract 2018;35(1):99-104. doi: 10.1093/fampra/cmx074 [published Online First: 2017/10/07]

VERSION 2 – REVIEW

REVIEWER	Sven Streit University of Bern Institute of Primary Health Care (BIHAM) Bern, Switzerland
REVIEW RETURNED	19-Apr-2019

GENERAL COMMENTS	The comments made have been all addressed by the authors and I suggest accepting the paper for publication especially since the other Reviewer correctly pointed out that other countries might benefit from such protocols and questionnaires to be used in their settings as well. Congratulations to the team in Australia for having chosen the path of submitting their protocol to BMJ Open. Looking forward to the results and implications of this study.

REVIEWER	Alex Harding University of Exeter Medical School
REVIEW RETURNED	05-Apr-2019

GENERAL COMMENTS	As one of the original reviewers, I have re-read the submission. Many of the comments have been taken on board. My only remaining (minor) concern is that the introduction may still be insufficiently international in its scope. This framing is important I think for the wider audience. This is however a minor concern and the authors have clearly taken the majority of the reviewers suggestions on board and made significant alterations to the original article. I am happy to recommend accepting this.