Reviewer’s report

Title: Challenges and strategies for General Practitioners diagnosing serious infections in older adults: a UK qualitative interview study

Version: 0 Date: 08 Jan 2019

Reviewer: Andrew Moore

Reviewer’s report:

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Thank you for the opportunity to review this manuscript about the challenges and strategies used to diagnose and manage serious infection in primary care.

Can the authors please describe how this paper differs sufficiently from their previous paper which appears to be from the same study and also describes challenges and strategies to diagnosing and managing infection (Reference 13).

In the abstract please state how many GPs were interviewed across how many practices to indicate the scope of the study.

Introduction

References 1 and 5 are the same. Please check and revise references throughout.

Please briefly explain CRB65 for the reader.

4:36-42 it might be useful to briefly indicate why co-morbidities and social factors are important considerations for decision about diagnosis and management of infection, with references if possible.

4:114-116 Please expand on the issues referred to here with references. e.g. what are the issues for patient safety and stewardship?

Methods.

5:122 Please describe what local and national mailing lists are being referred to for transparency and replication.
Did the GPs receive information about the study in the invitation email?

5:127 The authors suggest there was no financial incentive to participate, yet in the previous paper from the same study (ref 13) the authors suggest reimbursement was offered. Please clarify.

Given their involvement in the data collection and analysis are GH and SM trained in qualitative methods?

When using a constructionist approach it's usual for one person to conduct the interviews and lead the analysis. What was the reason behind the choice to for two team members to collect the data and what measures were in place to reduce the likelihood of differences in interview techniques affecting data collection and interpretation?

Given that both interviewer's are GPs was there any attempt to bracket their own experiences when interpreting the data through the use of reflexive diaries or fieldnotes? Were there any non-GPs involved in the analysis. One of the benefits of the framework approach is that it produces data in a format that can be shared and discussed amongst a wider multidisciplinary team? What are the backgrounds of the rest of the team - are they all GPs or is there a multidisciplinary element?

Four participants were known to the interviewers - Did they perceive that this personal relationship impacted on the data collection at all and what measures did they have in place to reduce any likelihood of this happening? Reflexive diaries or fieldnotes to ensure they were considering how these relationships and their own professional backgrounds may affect the collection, depth and quality of the data?

How were the interviews carried out? face-to-face, by phone etc.

The topic guide appears to be very brief. Please state how the topic guide changed throughout the interviews - what changes were made?

Assuming this is the same study according to the ethics number and methods described etc. the topic guide appears much briefer than the one used in the previous paper which includes 12 questions rather than just the first 5 included here.

Please refer to the COREQ guidelines on reporting of qualitative research methods to ensure transparency.

Analysis

142-148 - This section is very brief and a direct copy from the previous manuscript (ref 13). There really needs to be more depth and detail in how the analysis was conducted. The 5 steps described in line 143 are generic steps for most qualitative research approaches, not specific to framework. How was the framework method modified? In what way? Usually, framework
includes the development of an analytic framework through deductive coding, the formulation of a coding matrices, and cross case and within case analysis with coding summaries, before abstraction and the development of themes and subthemes. How did the team use NVivo to facilitate the analysis? Did they use the Framework Matrices function? Please use references.

How were the themes and subthemes developed and agreed upon?

150 - It's not constructionism that captures multiple perspectives and attitudes. Constructionism simply recognises that individual's knowledge of the world is based on meaning derived from their experiences of phenomenon and from shared social meanings.

152 - constant comparison is usually associated with theoretical sampling in grounded theory (Charmaz). Can the authors describe how it was used here to ensure themes and concepts were grounded in the data?

Results

Please ensure that the theme titles in the table match those in the main text.

Some sentences lack clarity. Please check throughout. e.g. line 357 "Rural GPs would consider whether obtaining a chest radiograph would significantly impact on their management due to the associated transport requirement." What is the associated transport requirement?

361 The readers will not all be GPs. Please explain Point of Care blood tests?

376 GPs outlined 2 strategies. The first appears to be gut instinct, under the recognition of illness subtitle. What is the second?

The case mix was fairly varied but the results seem to represent only the most common infections (Chest, UTI). Was there anything different about the other conditions and how they presented or were managed?

Within the results there's a predominance of challenges to GPs, and not a great deal about strategies. Recognition of illness, and continuity of care do not seem describe strategies to manage infection, but rather are generic and intuitive instincts about whether someone is 'ill' or not, rather than whether their system is compromised by infection.

Conclusion

422 GPs described how increased workload impacted on continuity of care - I don't feel this was reflected in the results.

448-450 The authors mention an age cut off for cases. There is no mention of this int he methods section. however, keywords suggest this was 80 and over. Please describe why the authors chose
this cut off and how the diagnosis and management of infection in this age group differs from younger populations.

CRP is an important indicator of infection and yet the evidence suggests that "most GPs had little experience in using point of care (POC) blood tests and described a preference for relying on clinical signs." Isn't this the point at which infections are missed, when GPs don't use POC blood tests? Can the authors be a little more critical in the discussion.

At 461 the authors suggest that the "study described the real-world strategies used when serious infections are suspected", which include deciding whether the patient looks unwell and trusting their gut instinct. I think the interpretation of the results needs to have more depth and to be more critical. At the moment it appears that GPs have a woefully inadequate arsenal to determine serious infection.

In the conclusions the authors suggest that GPs use continuity of care as a strategy to diagnose and manage infection and yet this does not come across in the results. In the sub-theme, "continuity of care" it was stated that where patients were known to GPs is was easier to identify if they were ill or not, but where they were not known it was more difficult. Presently it doesn't suggest that GPs have the resources to ensure there is continuity of care or used this as a strategy.

Limitations

438 "Purposive sampling method to capture the variation and diversity demonstrated within primary care doctors." It's not the purposive method that achieved this. The sample is purposive only in the sense that the GPs had knowledge and experience of the phenomenon under study. Did the authors use maximum variation sampling within their purposive method?

Do the authors feel that because the interviewers were GPs there was an assumed level of knowledge and taken for granted assumptions made which may have limited the data collected?

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

No
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

Not relevant to this manuscript

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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