Reviewer’s report

Title: An Activity Analysis of Dutch Hospital-Based Physician Assistants and Nurse Practitioners

Version: 0 Date: 18 Jul 2019

Reviewer: Daisy de Bruijn

Reviewer’s report:

General comments

The study is relevant for healthcare professionals and policy makers. It shows that PAs and NPs, working in hospitals, have a broad range of tasks with a particular focus on direct patient care. Most of the tasks were taken over from medical doctors, with the associated responsibilities. The study was performed in the Netherlands with progressive policies regarding task shifting with far-reaching responsibilities for PAs and NPs. The study can provide other countries insight into the potential of PAs and Nps.

My comments aim to contribute to improve the paper in order to enhance its potential for health care and health care policy. The authors did a huge amount of work, which is highly acknowledged. My main comment is that in certain parts of the manuscript, relevant information is lacking, making it very difficult to follow the performed steps and to correctly interpret the obtained results. This can be improved by a clearer description and a better structure.

Specific comments

Background

P3 line 56: The authors stated that healthcare administrative systems are expected to objectively give insight in tasks and responsibilities of their employees. I suggest to temper this viewpoint. In general, this kind of systems are made up for a purpose other than research. Information bias can never be completely excluded.

P4 line 10: To improve the comparison between the numbers of physicians, PAs and NPs, please update the number of PAs and NPs (2018).

P5 line 26-28: In my opinion, delegation of tasks may not always be of temporary nature. It always relates to supervision of the physician, regardless the timeframe.

P5 line 58: The authors mention the use of questionnaires. Nowhere the content of these questionnaires is described, nor any findings.

Methods

P6 line 2: How was the selection of hospitals carried out? Recruitment, Enrolment?

P6 line 25: How did the authors determine that the included PAs and NPs were representative for the whole hospital? Based on?

P6 line 52: Why was the reason for visit taken into account? This is not reflected in the results.

P6 line 56: Retrospectively contacting the supervisor and/or financial administrator is particularly
vulnerable to recall bias. How reliable are these data?
P7 line 1: In the interest of readability, it would be better if the explanation of additional tasks and other tasks would have been included in the text earlier.
P7 line 12: In which manner can physicians rate the overall contribution of the PA or NP (scores?)?
P7 line 11: How is quality of patient care defined? Quality of care is a catch-all-term. When not properly defined in domains, every physician can interpret it differently, which infringes the validity.
P7 line 16: It is not clear to me, how exactly the authors determine the supervision time of the physician. In which system is this registered? In addition, the authors "classified the degree of autonomy from the supervising medical doctor, triangulated with the patient's record". How is triangulation carried out? The authors refer to exhibit 2. But there is no mention of any involvement of MDs. Description of step 2 certainly deserves further attention.
P8 line 35: Again, how do the authors assign a degree of independent performance?
P9 exhibit 2:

- What is a CVB-procedure?
- There are some strange symbols in the boxes.
- Throughout the document the authors use the abbreviation MD, here MS.
- When the MS is partly involved in the procedure, the authors defined this as delegation of tasks. Involvement of the MD is, in my opinion, too broad and too vague. MDs role is very clear in case of delegation, namely to provide supervision. MDs can also be "involved" in reallocation of tasks, for example if the PA or NP want to consult the MD, which is also often the case with peer consultation between MDs. We do not call this delegation….

- For consistency, I would like to recommend to include "other tasks" in the flowchart.

Results

P9 line 28: 31 NPs and 18 PAs were included in the study; this does not match with 75 PAs and NPs mentioned on P6 line 18.
P9 line 32 and exhibit 4: Can the authors please include the dispersion measures?
P9 line 34: 1381 and 1502 hours were assessed over 8 months. In exhibit 4, the same numbers are on an annual base?
P10 line 6: Task transfer? Where does this term suddenly comes from?
P10 exhibit 5: It is very risky to associate the classification of tasks to medical speciality departments, because:

- n=3 general hospitals, n=1 academic hospital, which is very low. Probably, for some departments like haematology or neurosurgery, n=1 (only in academic hospital), which is even lower. (Please include the number of departments.)
- Agreements on tasks are often made locally and are maybe even more depending on the individual
MD and individual PA or NP, than the medical specialty. (This variation may become visible in the dispersion measure).

P10 line 52: textual remark: "th1ese"

P11 Exhibit 6: How do the authors correct the hours with interviews? This crucial part is lacking. Furthermore, how reliable are these results? Earlier, the authors rightly pointed out that numbers established with interviews are particularly vulnerable for (recall) bias. See also P12 line 10.

P11 Exhibit 7: Is consultation between medical specialist and PA/NP not patient-based?

P11 line 55: The presence of the physician overseeing the PA or NP was only reported a third of the time. I am just curious; can the authors associate this with years of experience of the PA or NP? Do they have figures on this?

There are no results included, responding to the 4th aim of the study (P4): Assess the reliability of hospital administrative systems to capture the activity of PAs and NPs.

Discussion

P12 line 33: Suddenly, in the discussion the authors described that" NPs performed 26% of all the medical tasks recorded in a systematic way. (Do the authors mean: of all tasks NPs performed, 26% was recorded in a systematic way?). Where do these figures come from?

P12 line 35: The authors mentioned the use of a validation process. How was this done? Not mentioned in the methods.

P12 line 41: Where do the figures 62% an 55% come from? Not mentioned in the results.

P12 line 47: The PA appeared to be performing clinical tasks more independently than NPs. Where in the results can I see this myself?

P14 line 25: the PA or NP were acting as contributors to a more efficient hospital service delivery. This is a very pronounced statement, not substantially justified by results.

Level of interest

Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English

Please indicate the quality of language in the manuscript:

Needs some language corrections before being published
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