PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	Addressing the human resource crisis: A case study of Cambodia's efforts to reduce maternal mortality (1980-2012)
AUTHORS	Fujita, Noriko; Abe, Kimiko; Rotem, Arie; Tung, Rathavy; Keat, Phuong; Robins, Ann; Zwi, Anthony

VERSION 1 - REVIEW

REVIEWER	dr.Insaf A. Shaban Assistant Professor, RN, RM, DMid Princess Salma Faculty of Nursing Al al-Bayt University Mafraq-Jordan
REVIEW RETURNED	09-Mar-2013

GENERAL COMMENTS	This is interesting paper which addresses an important practical example to staff management. It was clear that achieving the 5th MDG would be possible if the appropriate human resources were in place. The "house model" contains elements that help authors to highlight some core issues of human resource management (production-deployment-retention), and linkage to the foundation components (policy and planning, finances, legal). This is interesting paper which addresses an important practical example to staff management. It was clear that achieving the 5th MDG would be possible if the appropriate human resources were in place. The "house model" contains elements that help authors to highlight some core issues of human resource management (production-deployment-retention), and linkage to the foundation components (policy and planning, finances, legal). Although I appreciate the constraint imposed by the word limit, a few extra details would make the paper much easier to interpret. **Originality** This is an original piece of work. Professor Fujita enjoys reputation

	for having established the effectiveness of "house model" for HRH system development. This paper is part of this on-going application. **The introduction** is extremely brief. In particular, more details need be given about general country information (Population, How many regions are there, health system and economic indicators…….etc.). The **method** seems sound. The **research question** is well-defined. **The design** of the study is satisfactory. The **participants** are adequately described. The presentation of the study **findings** should be improved. The problem is with categories' label in the findings. When reporting findings from inductive analysis, researchers should used top-level categories as main headings in the findings – I think its better to form the label in the context of policy and regulation; education; partnerships; leadership….etc.- with specific categories as subheading. It is good from author(s) to include detailed descriptions of categories and suitable quotations from stakeholders or the text to illustrate the meanings of the categories. The **Discussion and interpretation** of the findings is reasonable. I would suggest discussion of the methodological limitations of the study should precede discussion of these findings. **References**- up to date and relevant **Abstract/ summary/ key messages/ what this paper adds** reflect accurately what the paper says

	I believe that in its current form the manuscript is not acceptable for publication. I would suggest that the authors rework the article and then resubmit.

REVIEWER	Caroline Homer Professor of Midwifery University of Technology Sydney Statement of competing interests: I am a co-authjor on the papers suggested (first author Ponnadara Ith).
REVIEW RETURNED	10-Mar-2013

THE STUDY	Thank you for the opportunity to review this paper. The paper describes a qualitative case study to document and describe the factors that have contributed to the systematic development of the Cambodian HRH system with a focus on midwifery services and show how this has improved maternal and newborn health. Data were collected through in-depth interviews and a review of the literature. There is much to like about this paper. Firstly, it is unusual for evidence of this nature to be presented in a systematic manner. This evidence however is important and very useful for policy makers and funders of health systems. There are however a number of areas where greater clarity is required. The paper does not easily flow at the moment and the reader has to search for parts of the argument. The main outcome measures in the abstract don't actually seem to be outcomes, they are more process measures – for example, perceptions of the informants, external influences and the development of the HRH system. I would have thought the outcome measures are the maternal mortality changes as documented in Figures 1 and 2. The 'House Model' does not appear in the Abstract although it seems that this is a critical part of the paper. Equally, this model does not appear in the key messages either. The analysis seems quite limited only concentrating on the views of the Ministry of Health. One of the limitations would be the lack of voices of the consumers or the workforce themselves. The interviews and data are largely from the Ministry of Health and did not incorporate end-users or even end-providers views. How can we be sure that the views are the MoH are in fact grounded in reality? The other groups that are missing are the education providers and the professional association for midwifery. These groups must have played a significant role in the development of the midwifery services

	but they are not included in the analysis. It is important to include them to show how a multi-faceted approach is usually needed. There is a lack of description of what is meant by midwifery services. Is this the same as qualified midwives? The use of skilled birth attendant is used interchangeably with midwifery and midwife. This needs clarity so that the reader is clear about that is needed in other settings to be implemented. The role of the midwife needs clarification. What was the education level of the midwives? What services can they provide, eg BEMONC, CEMONC? What is the difference between the levels of midwives? I presume a PMW is a primary midwife although this is not well explained. The definition of a midwife needs to be included and whether it fits with the definition from the International Confederation of Midwives. Do the midwives meet the international competency standards? The findings do not seem to discuss Figures 1 or 2 at all. The reader is left to find these without any reference in the findings section. The analysis that led to these figures is also not included. An analysis of MMR by numbers of registered midwives in the country seems to be missing. The unintended consequence of the policies also needs to be explored. The incentive fees are likely to have produced consequences that have not been explored especially in a country like Cambodian that has a private sector which may take advantage of such policies. It is my understanding that the private sector in Cambodia has meant that many women have procedures that they do not need (episiotomy, vacuum extraction etc) as these attract higher fees but are in fact potentially continuing to increased morbidity (see recent papers by Ponndara Ith re Cambodia and skilled birth attendants). Ith P, Dawson A, Homer CSE. (2013) Women's perspective of maternity care in Cambodia. Women and Birth 26: 71–75. Ith P, Dawson A, Homer CSE. (2012) The working environment of skilled birth attendants in Cambodia: a qualitative study. International Journal of Childbirth, 2 (3): 153-162 Ith P, Dawson A, Homer CSE. (2012) Quality of Maternity Care Practices of Skilled Birth Attendants in Cambodia. International Journal of Evidence-Based Healthcare 10: 60–67 I would like to see more analysis on the HRH aspect on the process. How many midwives were educated and at what level. How are they registered and regulated. Where are they now placed? What are the programs to increase their salary levels and how have these been successful? Maybe these questions are beyond the remit of the paper but they would seem to be fundamental HRH issues.

REVIEWER	Karen Daniels, Senior Scientist, Medical Research Council, South Africa I declare that I have no conflict of interest.
REVIEW RETURNED	11-Mar-2013

REPORTING & ETHICS	It's not the type of article that needs to conform to a reporting statement or checklist.
GENERAL COMMENTS	I am very happy with this submission! I have only minor comments

	relating to two areas. On the title: I think that this is more of a historical overview than a case study. I'd be happy with a compromise of historical case study, as fitting between case study and historical overview. I don't think that the paper looks at the period between 1979 and 1990, other than for brief mention in the timeline. In fact, I think the focus is largely on the 2000s. I therefore think that using the dates 1990-2012 in the title would be more accurate. On the methods: The authors need to consider the strengths and limitations of this study in the Discussion. For example I think that the fact that the first two authors, who were also the interviewers and the main analysers, are not Cambodian is both a strength and a limitation. From my perspective it's a strength because they are likely to be more objective and unlikely to assume shared knowledge with the respondents (and hence may have asked more questions that an insider may have overlooked). But it may also be a limitation because there may be things as outsiders that they struggled to understand, or cultural nuances that they missed. This kind of methodological reflection in the Discussion will strengthen the paper and show more evidence of the rigour of the science. Note to the Editor: This evaluation form is designed for quantitative studies and does not do justice to qualitative studies like this one.

VERSION 1 – AUTHOR RESPONSE

Comments and responses

Comments	Responses
<u>Managing editor</u>: Please provide more details about how the literature search was conducted - who did the search, how were results agreed upon, what databases and search terms were used, etc.	▪ Details of literature review described in more detail in the first paragraph of the Methods section (page 6).
<u>Reviewer 1: Dr.Insaf A. Shaban</u> 1. The introduction is extremely brief. In particular, more details need be given about general country information (Population, How many regions are there, health system and economic indicators…….etc.).	▪ Brief country profile added as recommended; highlighted in the second paragraph of the Introduction section (page 5).
2. Categories' label in the findings… researchers should use top-level categories as main headings in the findings – I think it's better to form the label in the context of policy and regulation; education; partnerships; leadership….etc.- with specific categories as subheading. It is good from author(s) to include detailed descriptions of categories and suitable quotations from stakeholders or the text to illustrate the meanings of the categories.	▪ Added a paragraph explaining the structure of the findings section which consists of subsections covering chronology, major events, and contributing factors which covered policy, regulation, and related areas as highlighted (pages 8-9).
3. I would suggest discussion of the methodological limitations of the study should precede discussion of these findings.	▪ Methodological limitation highlighted in the Strengths and Limitations section (pages 17-18).

Reviewer 2: Caroline Homer 1. The main outcome measures in the abstract don't actually seem to be outcomes, they are more process measures – for example, perceptions of the informants, external influences and the development of the HRH system. I would have thought the outcome measures are the maternal mortality changes as documented in Figures 1 and 2.	▪ Abstract modified accordingly and include 24-hour cover by skilled midwives and reduction in maternal mortality ratio (page 2)
2. The 'House Model' does not appear in the Abstract although it seems that this is a critical part of the paper. Equally, this model does not appear in the key messages either.	▪ 'House Model' (Fujita et al, 2011) added and referenced as highlighted in the Abstract and Key message section. (pages 2-3)
3. The analysis seems quite limited only concentrating on the views of the Ministry of Health. One of the limitations would be the lack of voices of the consumers or the workforce themselves…. The other groups that are missing are the education providers and the professional association for midwifery.	▪ Valuable point from this reviewer; focusing on MOH informants may be considered both a strength and weakness of the study as stated in the revised Strengths and Limitations section (pages 17-18). ▪ One of the study objectives is to describe the process of decision-making in policy and interventions. The first and second rounds of interviews identified the strong top-down policy making process. This reflected limited involvement of educational institutions, consumers or health workforce themselves; and indeed this took place at a very early stage of the development of professional councils and associations. The third round of interviews therefore focused on MoH managers and selected development partners. The rationale for this is now presented more clearly and highlighted in the third paragraph of the Methods section (page7).
4. ..lack of description of what is meant by midwifery services. Is this the same as qualified midwives? The use of skilled birth attendant is used interchangeably with midwifery and midwife…The role of the midwife needs clarification…What was the education level of the midwives? What services can they provide, eg BEMONC, CEMONC? What is the difference between the levels of midwives? …The definition of a midwife needs to be included and whether it fits with the definition from the International Confederation of Midwives. Do the midwives meet the international competency standards?	▪ The definition of midwifery services and their role in Cambodia, plus the associated educational levels are described as highlighted in the Introduction section (page 5-6) and in the Chronology of Findings (page 8) We clarified the categories of skilled birth attendant and midwives in Figure 2. ▪ Quality of midwifery services and competency of midwives were not the focus of our study, but certainly are among the important issues to be examined and discussed in future. We added some clarification regarding quality issues in the Discussion section (page16).
5. The findings do not seem to discuss Figures 1 or 2 at all…The analysis that led to these figures is also not included. An analysis of MMR by numbers of registered midwives in the country seems to be missing.	▪ The main objective of this study was to analyze how the policy interventions were decided and implemented rather than to undertake a detailed assessment of how effective these interventions were in reducing MMR. Figures 1 and 2 present valuable evidence and are described as part of the chronology (page 9) and fast track initiatives (page 12) presented in the Findings section. More detailed analysis of

	attribution would be a valuable supplement to our study.
6. The unintended consequence of the policies also needs to be explored. The incentive fees are likely to have produced consequences that have not been explored especially in a country like Cambodian that has a private sector which may take advantage of such policies. It is my understanding that the private sector in Cambodia has meant that many women have procedures that they do not need (episiotomy, vacuum extraction etc) as these attract higher fees but are in fact potentially continuing to increased morbidity (see recent papers by Ponndara Ith re Cambodia and skilled birth attendants).	▪ Unintended consequences of the policies were not able to be fully explored. This partly reflected our strengths-based approach (page 7) which seeks to highlight the positive contributions made. Detailed assessments of unintended negative consequences are important but were beyond the scope of our study. We have, however, documented a number of these such as the impact on Local recruitment and quality of education of PMW (page 9). We have also accepted the views of the Reviewer that this incomplete exploration can be regarded as a limitation and have added a comment accordingly in the Strengths and Limitations section (pages 17-18). ▪ We also added this issue as worthy of future examination (page 16) with a suggested reference (highlighted in page 23.
7. I would like to see more analysis on the HRH aspect on the process. How many midwives were educated and at what level. How are they registered and regulated. Where are they now placed? What are the programs to increase their salary levels and how have these been successful? Maybe these questions are beyond the remit of the paper but they would seem to be fundamental HRH issues.	▪ These questions are beyond the remit of the paper, however answers are available at "Mid-term review of the health workforce development plan 2006-2015" by the MOH, Cambodia and referenced in the paper.
<u>Reviewer 3: Karen Daniels</u> 1. On the title: .. using the dates 1990-2012 in the title would be more accurate.	▪ Our focus is the country from the 'post'-conflict stage. Reconstruction of the country and development of the health and HRH system already started since the 1980's and accelerated from 1990's to 2000's. We have kept the title as previously. We added a sentence and phases which specify the scope of our study and terms included in the chronology (page 8 and 9).
2. On the methods: the strengths and limitations of this study in the Discussion…the first two authors, who were also the interviewers and the main analysers, are not Cambodian is both a strength and a limitation. .. methodological reflection in the Discussion will strengthen the paper and show more evidence of the rigour of the science.	▪ We added a comment to the strengths and limitations and methodological reflection in the Strengths and Limitations section (pages 17-18) as highlighted.

VERSION 2 – REVIEW

REVIEWER	Caroline Homer Professor of Midwifery Faculty of Health University of Technology Sydney Australia
REVIEW RETURNED	06-Apr-2013

GENERAL COMMENTS	The authors have addressed my original concerns.