Author's response to reviews

Title: Provider performance in treating poor patients - Factors influencing prescribing practices in Lao PDR: a cross-sectional study

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Author's response to reviews: see over
RESPONSE TO COMMENTS FROM REFEREES

Title: Provider performance in treating poor patients – Factors influencing prescribing practices in Lao PDR: a cross-sectional study

RESPONSE TO COMMENTS FROM REFEREE 1

MAJOR COMPULSORY REVISIONS

Methods: It is not clear how the Districts (and the district hospitals) were selected. Was it purposive or random? Again, how were the patients selected - random, or convenience sample? These need to be made explicit.

Response: The districts and district hospitals were purposively selected to include district with either one or two of the available health insurance schemes. The patients were selected consecutively according to their admission to hospital.

The relevant sentences now read:

*Three districts in each province were purposively selected to include districts where one or two of the available security systems, CBHI and HEF, had been introduced: (Methods, Study setting, 3rd line)*

*Patients were selected consecutively according to the time of their admission to the hospital. (Methods, Sample size, sixth line)*

Why was Hypertension selected? It is a condition that usually does not require hospitalisation, whereas the other three require hospitalisation? So comparing these 3 with admission for hypertension may give the wrong findings.

Response: There were four types of illness proposed to be selected as tracer conditions for this study: acute illness, chronic illness, maternal health and recurrent infection in children under five. Hypertension was selected as it is a chronic disease leading to stroke and in Laos many people die due to this disease. We agree that the majority of patients with hypertension do not require hospitalization, and the recruitment of patients with this diagnosis took place in the out-patient department. This information has been added:

*For patients with hypertension, data were mostly collected in out-patient wards. (Methods, Data collection methods, 1st paragraph, 3rd line)*

Data collection methods: Data was collected from the patients while they were in the ward. This may not capture the entire health expenditure as the patient has the potential to spend after the interview and before discharge.
It is not clear whether the data from the patient records was collected after the discharge or concurrently while doing the interview. If that latter is the case, it implies that some medicines and diagnostic tests may not have been captured by this.

Response: The data collectors followed up the in-patients until the last day in hospital to be able to capture the entire health expenditure. To clarify this, we have added the following sentence:

*The questionnaire was not finalised until the day of discharge to ensure that all expenditures were recorded.* (Methods, Data collection methods, 2nd paragraph, 7th line)

Need clarification on how the scoring system for the use of medicines was used - maybe the authors should share the checklist and scoring system with the reviewers and explain the process in a little more detail.

Response: For each patient, all medicines used were checked and scored according to the treatment guideline for each disease. We included proper use of IV fluids and blood transfusions if indicated. We consider it not possible to describe this in detail in the article, although we have slightly modified the text and added information about IV fluids.

The relevant paragraph now reads:

*The appropriateness of use of medicines was assessed by using a checklist and a scoring system, which was based on treatment guidelines used in the hospitals for the four tracers. Correct use of medicines according to the guidelines, including intravenous fluids and blood transfusions, received a positive score, while inappropriate medications received negative scores. The maximum score was 10 for all tracers.* (Methods, Data collection methods, 4th paragraph)

We have also added more detailed information in the Results about reasons for low scores:

*The low score for patients with major injury and post-partum treatment were mainly due to incorrect choice of intravenous fluids and inappropriate use of oral antibiotics. The average use of antibiotic injection was 1.0 in patients with major injury, 1.5 in patients with post-delivery haemorrhage or a Caesarean section, 0.04 in hypertensive patients, and 1.1 in children under five with pneumonia, which for all tracers mostly corresponded with recommendations in the guidelines.* (Results, 4th paragraph, 4th line)

Some more details about how the insurance programme was operationalised.

Response: We have added information in the Introduction:

*The payment under CSS is the responsibility of the government, whereas the SSO is paid by the private companies, and CBHI gets contributions directly from the households.*
Swiss Red Cross has supported HEF in Vientiane province and Namebak district in Luangprabang province. (Introduction, 3rd paragraph, 6th line)

Results:
As per the calculations - 20 patients x 4 conditions x 4 hospitals x 3 provinces should give a minimum of 960 patients. The authors are able to account only for 828 patients. What happened to the rest?

Response: Due to the limitation in number of patients, it was not possible to reach the target number as planned although we spent more than five months waiting for patients with the required conditions. We have clarified this as follows:

The provincial hospital and the three district hospitals in each province were included - a total of 12 public health facilities. One of the district hospitals in each province was involved in the insurance scheme pilot, while the other two operated without any insurance scheme. Four tracer conditions were used for data collection: a) major injury (including bone fracture), b) hypertension, c) post-delivery haemorrhage or Caesarean section, and d) pneumonia in children under five. Patients were selected consecutively according to the time of their admission to the hospital. The aim was to recruit 20 patients per disease and per health facility, but in spite of a period of five months for data collection we could only include a total of 828 patients. (Methods, Sample size and sampling procedures)

It is not clear who (rich, middle income or poor) paid the informal fees, who was insured.

Response: There were only nine insured patients who made informal payments. We have added this information in Results, 5th paragraph, 8th line:

Only nine out of the total of 110 patients with informal payment were covered by insurance.

And we have commented in the Discussion, 5th paragraph, 1st line:

Patients making informal payments, who were also mostly non-insured,

Discussion:
There is hardly any discussion on the provider payment mechanism to explain the result. The providers were paid on a capitation basis, hence this could be the reason why the insured patients did not get unnecessary treatment (and more appropriate treatment as claimed by the authors).

Response: Yes, we agree, and we have made a comment in the Discussion, 2nd paragraph, 4th line:
Providers were encouraged to treat insured patients according to the list and the insured patients also received fewer drugs, fewer antibiotics, fewer injections in total and the expenditure was lower. Uninsured patients, on the other hand, could receive medicines at the prescriber’s discretion and according to the patient’s own demands. These different preconditions seem to have had an impact on the doctors’ prescribing habits.

There were three objectives, but only two of them have been addressed. Not clear how the authors addressed the determinants of provider performance

Response: We have addressed this objective. Table 4 presents all suggested determinants of provider performance. In the Results section page 11, last paragraph: “A higher total expenditure for medicines and diagnostic tests was associated with uninsured patients, patients with higher education, patients making informal payments, patients treated in a provincial hospital and patients in the lowest income-level group (Table 4). There was no association found with sex, profession and distance from health facility” and also in the Discussion “Factors associated with the expenditure for medicines and diagnostic tests, which influenced prescribing and treatment practices, were insurance schemes, education, low-income level patients, level of health facility, and informal payment” (Discussion, 1st paragraph).

The authors have stated that the OOP expenditure for treating injuries and complicated pregnancies was much higher than for treating hypertension and ARI. This is obvious because the conditions are very different. So it is not a great finding.

Response: Yes, we agree, but we still think it is worth presenting these results also.

Also the patients with HT and ARI received higher levels of appropriate treatment. One possible reason could be the availability of standard treatment guidelines for these two conditions, whereas the other two conditions are much more heterogenous and require a clinician's judgement. This could be the explanation for the diagnosis of 'inappropriate' care.

Response: Yes, we partly agree. We have modified our comments in the Discussion. The 4th paragraph now reads as shown below. We moved the comments on antibiotic use to the 3rd paragraph.

Patients with major injury or bone fracture and post-delivery haemorrhage or a Caesarean section received less appropriate overall treatment than patients with hypertension or pneumonia. We cannot fully explain the reasons for this discrepancy, but it may partly be related to the diversity of conditions covered by the guidelines for non-infectious emergency cases.

MINOR ESSENTIAL REVISIONS
On page 11 - discussion section; there is a para on exemption policy etc. It does not fall into the discussion section, maybe into the methods
Response: We do not agree, we think it is more appropriate to put this in the Discussion section. It explains how the poor without scheme can be exempted from payment. We have already explained about the exemption policy in the Introduction (4th paragraph).

Some more discussion about Table 1 - is it in consonance with the reality in the community in terms of income, gender, occupation etc.

Response: Yes, it reflects the known situation in the country. We have added information in Results, 1st paragraph, 6th line:

The demographic characteristics are in concordance with information gathered from national surveys [14].
RESPONSE TO THE COMMENTS FROM REFEREE 2

Major Compulsory Revisions
1. It was not very clearly stated what other costs were included. It says in the text that costs for equipment, transportation, accommodation and food are included in the analysis. Some more information is needed about inclusion of treatment costs from e.g. possible surgery and personnel costs, which make up the majority of hospital costs.

Response: Four types of cost were collected: cost of medicines, cost of diagnostic tests, fees, and other costs. Other costs included all other cost for the treatment period including cost for equipment, transportation, accommodation and food for patients themselves and their relatives.
We have explained this in Methods, Data collection, 3rd paragraph:

“Information about the use of medicines and diagnostic tests was retrieved from the patient records, including the costs of medicines, cost of diagnostic tests, fees and other costs. The costs of prescribed medicines and diagnostic tests were based on the price lists compiled by the pharmacy unit at each hospital. Fees were usually quite small and relate to charges for consultation and documents. Other expenditure refers to all other expenditure for the treatment episode, including cost for equipment, transportation, accommodation and food for patients themselves and their relatives. The questions on informal payment addressed whether the patients had contributed any additional payment or donated food or gifts of any kind to any of the health care providers”.

2. Add a short description of the characteristics of the principal insurance schemes. How do they differ in structure, who is eligible, etc. In the concluding section add a more detailed analysis of the performance of the insurance experiments, and were any differences in treatment identified with respect to the belonging to various insurance scheme.

Response: In the introduction section, para 3, the insurance schemes have been clarified: Four main types of insurance schemes are currently being piloted in selected provinces in Laos: (1) the social security system covering civil servants (CSS), (2) health insurance schemes for the private sector (SSO), (3) community-based health insurance schemes (CBHI), and (4) health equity funds (HEF) for the poor. For all schemes, payments to contracted hospitals are on a capitation basis and limited to a defined set of services, with the exception of HEF. We have added information in the Introduction as described in response to Reviewer 1. The number of patients on different schemes is small and not equal (CSS=45, SSO=5, CBHI=50, HEF=16), thus we don’t regard it as possible to do a detailed analysis by different schemes.

3. Mention how was the number of those with insurance (116 individuals) divided across the various tracer conditions?
Response: We have added this information in the 1st paragraph of Results:
There were in total 828 in-patients (45% women) in the three provinces. Of these, 201 had suffered a major injury (7 were insured), 203 had hypertension (63 insured), 201 had suffered a post-delivery haemorrhage or had undergone a Caesarean section (25 insured) and 223 were children under five with pneumonia (21 insured).

4. Table 2: explain the number in parenthesis and what the p-value stands for (difference btw. the ins. unins. categories?)

Response: The number in parenthesis is the standard deviation (SD), and the p-value is for insured (Yes) and uninsured (No) patients.

5. It could be that differences in income, insured, informal payments are due to different treatment practices/cultures in different types of hospital and provinces. How to tell apart differences in patient characteristics from differences that are due to the patients being treated in different hospitals. In the regression model this is ok, as the hospital variable will be constant/standardized.

Response: We find it difficult to separate factors related to the hospitals as we have not designed the study to assess those factors.

6. In the section on statistical analysis the authors claim that patients with high income paid about three times more fees than the other income groups. However, in reporting the regression results it is mentioned that patients in the lower income group had higher total costs for medicines and diagnosis tests (fees?). Isn't this a contradiction?

Response: Patients with high income paid three times more fee charges than others, however, they paid less for medicines and diagnostic tests. There is thus no contradiction.

7. Is the magnitude of informal payments known? Is it included in the total fees paid by these patients?

Response: Informal payment is not included in the total fees paid by the patients, and we don’t know the magnitude of the payment, as we did not force the patients to disclose the amount.

Minor Essential Revisions

1. Introduction... "about 60% of health care costs come from individuals' own pockets. Increasing out-of pocket costs..." To be consistent wouldn't it be better to replace the word costs by expenditures/payments?

Response: We agree. In most cases we have changed to expenditure.