Author's response to reviews

Title: Care-seeking behavior and out-of-pocket expenditure for sick newborns among urban poor in Lucknow, northern India: a prospective follow-up study

Authors:

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Version: 2 Date: 3 March 2009

Author's response to reviews: see over
Dear Editor,

We have revised the manuscript as per the suggestions of the reviewers and have given a point-wise response to the reviewers’ comments. The responses are attached with this letter.

Yours Sincerely,

Shally Awasthi
Response to comments:

Reviewer 1: G Kang

Reviewer's report:

1. Is the question posed by the authors well defined?

Comment: Yes, the question is well defined. The authors seek to i) describe the major causes of morbidity in neonates born in government run facilities, which serve as a proxy for a lower socio-economic status, ii) to classify the illnesses into those which are part of the Integrated Management of Neonatal and Childhood Illness program and those which are not, iii) to estimate household out-of pocket expenditure on different causes of morbidity at different facilities/with different health care providers and to estimate, within the general population under study, how health care expenditures are made at different socio-economic strata.

2. Are the methods appropriate and well described?

Comment: The methods are appropriate, but would have benefited from more detailed analysis of the available data. For example, the authors could have sought correlations between illness or care-seeking and maternal education, type of illness and health seeking behaviour. The latter is presented in Table 2, but there is no analysis of whether a specific type of illness was the reason for seeking care from a particular type of practitioner.

Response: As suggested by the reviewer, we have included this in the Results section under the sub-section “Neonatal morbidity and care-seeking behavior (overall)” at page 13, line 1. and it reads:

“We observed that people preferred NGDs for pneumonia (76% (19/25)) and URI (68.6% (24/35)) while GPs were preferred for septicemia (70% (21/30)) and any type of jaundice (80% (4/5) for pathological jaundice and 68.8% (11/16) for physiological jaundice respectively).”

We have not calculated correlations between maternal education and care-seeking since sample size within sub-groups is small and not likely to yield meaningful results.
3. Are the data sound?

**Comment:** The data are sound, but as mentioned above, the analysis could have been more rigorous. For example, the children were followed up between 4 and 8 weeks, was there a difference between neonatal and the post-neonatal period? Could follow-up, or at least data collection, which is based on recall, have been limited to the same time period? *(MINOR DISCRETIONARY REVISION)*

**Response:** The follow-up was done at 6 weeks+ 15 days. Therefore, neonatal morbidity/mortality was assessed in the post-neonatal period uniformly for all subjects.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?

**Comment:** It would be useful to have additional details regarding the type of population which the District Hospital serves. Was there a difference between outcomes in children born in the two facilities? *(MINOR ESSENTIAL REVISION)*

**Response:** As suggested by the reviewers, we have included a new column in Table 1 giving site-wise (RCH center and District Hospital) and overall distribution of variables. We have also included a sub-section “Baseline and outcome variables (Site-wise)” under the main section of **Results**.

We found that neonatal morbidity was similar among those enrolled from the RCH center and district hospital (54.5% (78/143) Vs 48.5% (164/338); p=0.22). After assessing care-seeking behavior of the mothers, we found that mothers enrolled from the RCH center were less likely to seek any medical care for neonatal illnesses (71.8% (56/78) Vs 89.1% (146/164); p=0.0007), were less likely to seek care from Government providers (19.2% (15/78) Vs 43.3% (71/164); p=0.0002) and were also less likely to seek care from qualified non-government consultants (12.8% (10/78) Vs 21.9% (36/164); p=0.09). However, care-seeking from non-government dispensers was similar (42.3% (33/78) Vs 35.3% (58/164); p=0.29) among mothers enrolled at RCH center and district hospital. For cases in which any
medical care was sought (excluding hospitalization), families from the RCH center spent less than the families of the district hospital (p=0.07: Mann Whitney U Test).

5. Are the discussion and conclusions well balanced and adequately supported by the data?

Comment: The discussion and conclusions are limited and reasonable. Again, a stronger analytic plan may help with greater insight into the factors which determine how families from lower income strata make decisions regarding health care expenditure. The fact that hospitalizations were for IMNCI illnesses needs to be emphasized in the abstract as well as the discussion. Is there an explanation for the high proportion of children with low birth weight? **(MINOR ESSENTIAL REVISION)**

Response: We have now emphasized both in the Abstract as well as in Discussion that all hospitalizations were for IMNCI illnesses.

In Abstract, we have first mentioned IMNCI illnesses and have later written at page 3, line 5 “All hospitalizations were for IMNCI illnesses.”

In the Discussion; page 19, line 9… it reads: “We found that all the hospitalizations were for IMNCI illnesses and the combined overall mean expenditure incurred on IMNCI illnesses was nearly nine times higher as compared to that on non-IMNCI illnesses (903 INR Vs 121.6 INR).”

The high prevalence of low birth weight in this setting has been reported previously¹ and an ICMR study² has also reported high prevalence of low birth weight among urban poor.

References:


2. ICMR task force national collaborative study on identification of high risk families, mothers and outcome of their off-springs with particular reference to the problem of maternal nutrition, LBW, perinatal and infant morbidity and mortality in rural and urban slum communities, 1990.
Comment: Although the discussion states the supposed reasons why non-governmental dispensers were sought, these are not supported by data. (MINOR DISCRETIONARY REVISION)

Response: We have given in the RESULTS section (pg 17, line 18) “Conveyance cost was zero in 29.5% (23/78) cases in which care was sought from NGDs as compared to 6.6% (4/60) cases in GPs and 13.3% (4/30) cases in NGCs (p=0.002), respectively” We have also shown in Table 4 that the cost of conveyance in cases in which care was sought from NGDs was significantly low.

In Discussion (page 19, line 19) we have written “Mothers could have found care-seeking from NGDs as logistically more feasible as they were easily accessible (in vicinity) and medicines were dispensed at consultation.”

6. Are limitations of the work clearly stated?
   Yes.

Comment: Greater emphasis is required to make it clear that this is not a cost-of-illness study, since the costs incurred by the health care systems have not been calculated. (MINOR ESSENTIAL REVISION) Since the authors have a study population and cooperation from governmental authorities, they should consider doing more detailed costing studies which estimate the economic burden of neonatal morbidity on the family and on society.

Response: We have now emphasized in the DISCUSSION (page 21, line 12) that this is not a cost-of-illness study and it reads: “It should also be noted that this is not a cost-of-illness study since the costs incurred by the health systems have not been calculated and we only report out-of-pocket expenditure incurred by families in seeking care for neonatal illnesses.”
7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?

Comment: No. There are limited costing and out of pocket expenditure studies in India, but the discussion would benefit from setting this study in the context of other Indian and regional studies. (MINOR ESSENTIAL REVISION).

Response: We have now referred to some Indian and regional studies in the Discussion.

Paragraph 3, page 21 “Due to poor coverage of any health insurance program, out-of-pocket expenditure contributes to three-quarter of the total expenditure on health care in India [17, 19]. Health expenditure on curative care is 6% of the household income and has been estimated to vary from 3% to 12% among highest and lowest income quintiles respectively [17]. At the same time the medical care expenditure made by a poor....”

Paragraph 4, page 20 “We found that the reported neonatal illnesses were significantly higher for male neonates but we did not find any statistical difference in out-of-pocket expenditures across genders. However, a study done in rural Uttar Pradesh found a gender bias in favor of male neonates both in terms of perception of illness and out-of-pocket expenditures [18].”

Paragraph 2, page 22 “......This type of impact of expenditure on health care drastically affects poor households making them even poorer and is a major cause of debts among poor families [17, 19]”

Paragraph 2, page 20 “Role of private sector in health care has witnessed a continuous rise during past two decades [17].....”

8. Do the title and abstract accurately convey what has been found?

Comment: ‘Inequalities in health status’ is probably overstating the case. Over 80% of the families studied had an income of less than 2000 INR, and despite the stratification into quintiles for baseline data, the data presented for illness in two groups, where other risk factors for illness have not been considered. (MINOR ESSENTIAL REVISION)
Response: We have changed the “Title” of the study. It now reads “Care-seeking behavior and out-of-pocket expenditure for sick newborns among urban poor in Lucknow, northern India: A prospective follow-up study.”

In the Methods section under the sub-heading of Setting we have referred to a previous study “Nearly 80% of the households in the urban slums of Lucknow have monthly incomes of less than 2000 INR (~ US $ 47) and approximately 30% of this is spent on health care [11].” However, this does not pertain to our study sample in which the median income was 2500 INR.

We have formed two groups (Group A and Group B) on the basis of income values under the sub-section “Morbidity and care-seeking behavior according to income strata” at page 12, line 14 in the previous version. These groups are formed to highlight some findings. However, in no way our aim is to find risk factors for neonatal illnesses using these two groups. This was not the objective of this study.

We have now written in Discussion (as a study limitation) at page 21, line 15 “….We have also not assessed the risk factors for neonatal illnesses in this study, as it has been widely researched in developing countries [21-24] and was not an objective of the current study.

9. Is the writing acceptable?

Comment: The text needs editing. The exchange rate for the US dollar is different in different places. (MINOR ESSENTIAL REVISION)

Response: The exchange rates for dollars have been made uniform throughout the text and have been explicitly stated in the text as well as in the footnotes of the tables.

10. Is it essential that this manuscript be seen by an expert statistician?

Comment: No. This manuscript could be improved with better analysis, but that is a discretionary revision.

Response: We have now included detailed analysis as and where indicated by the reviewer in previous comments.
11. **Level of interest:** An article whose findings are important to those with closely related research interests

12. **Quality of written English:** Needs some language corrections before being published

13. **Statistical review:** No, the manuscript does not need to be seen by a statistician.

14. **Declaration of competing interests:**
I declare that I have no competing interests.
Reviewer's report

Reviewer 2: Marcel Bilger

Reviewer's report:
The authors study neonatal health in Lucknow, the capital of Uttar Pradesh, India. They have collected data from two public hospitals in 2007 and gathered information on 510 neonates with a follow up between 4 and 8 weeks after their birth. They analyze the distributions of neonatal illnesses and health providers sought. The statistical analysis is complemented by conditional distributions: out-of-pocket expenditure according to type of illness and provider sought, and type illness and provider sought according to various income brackets. The authors find that half of the neonates developed at least one type of illness and that the burden of out-of-pocket expenditure often exceeds the family income, especially in the lowest income bracket. They conclude that income protection policies should be adopted and suggest introducing health insurance or subsidizing care for those who cannot afford it. The rationale for studying neonatal health in Lucknow is very convincingly exposed by the authors and the paper is well situated in the existing bibliography. An obvious contribution of this work is the collection of sound data on this important topic. The limitations of the data used also clearly appear in the discussion. However, I find the title somehow misleading as this paper does not aim at computing inequality indexes. I would thus avoid using the word “inequality” in the title. Moreover, even though this paper is obviously carefully written, it sometimes lacks mentioning important details, especially about the statistical analysis. Finally, I think that it is important to improve the readability of Section “Results” which I find a bit confusing. My comments below provide guidance on what could easily be improved on.

Response: We have removed the word “Inequalities” from the title, section on Statistical Analysis has been revised, and section on Results has been improved as per the reviewer’s suggestions which follow:

Major Compulsory Revisions

Comment: 1) p.8, line 7. The authors write that their income cut-off points represent quintile values. If this were the case, the number of observations should be the same in each group, which is clearly not the case here. These income classes should thus not be
referred to as quintile values. However, they are still reasonably well balanced and it seems to me that they could be kept unchanged.

**Response:** As, suggested by the reviewer we have kept the income strata unchanged. We agree that our income strata do not represent quintiles. However, we have further clarified the basis of the division of our baseline sample into income strata (at Page 9, line 1) which reads as under:

***Construction of income strata:***

We have constructed five strata on the basis of different income groups. These are S1: \( \leq 1700 \) INR \((n=105)\); S2: 1701-2000 INR \((n=136)\); S3: 2001-2500 INR \((n=82)\); S4: 2501-4000 INR \((n=118)\); S5: > 4000 INR \((n=69)\). The basis for deciding the cut-off points for these strata were quintile values. However, the strata are exhibiting unequal distribution because several persons were having a particular income equal to the cut-off points, namely quintile values.”

**Comment 2):** p.8, line 8. The authors mention having used Chi-square tests for comparison of categorical variables across income strata. In my opinion, they also should clarify what hypothesis they are checking. My understanding is that they do not test whether a given categorical variable is identically distributed across income strata as a whole but whether each of its categories is when considered independently from the others (which implies the creation of a binary variable relating to each category in order to perform the test). I would ask the authors to clarify this point.

**Response:** To assess the distribution of different categorical variables among five strata (S1-S5), the standard chi-square test for equality of proportions \((H_0: p_1 = p_2 = p_3 = p_4 = p_5)\) is used. These five groups are mutually exclusive. We did not perform binary logistic regression, hence there was no question of creating any binary variable.
Comment 3). p.9, line 12. The authors mention that only primary disease conditions are taken into account. Are there many neonates with multiple conditions, especially among IMNCI and non-IMNCI ones? How is the primary disease chosen in such cases? Finally, I understand that assigning each sick neonate to only one category of illness simplifies the analysis but it would a questionable solution if many neonates with multiple conditions were present in the sample.

Response: Among 481 followed-up neonates, 242 (50.3%) neonates were reported to have any illness and only 22 (4.5%) had multiple illnesses. We have classified neonatal illnesses into two types i.e. IMNCI and non-IMNCI; and fourteen sub-categories, 8 for IMNCI illnesses and 6 for non-IMNCI illnesses. IMNCI Illnesses were diarrhea with dehydration, persistent diarrhea, ear discharge, fever, pathological jaundice, meningitis, pneumonia, septicemia, more than 10 pustules and umbilical sepsis. Non-IMNCI illnesses were conjunctivitis, dermatitis, diarrhea, URI, physiological jaundice and others.

When there were more than one illness per patient, the study pediatrician used following rules to identify primary diagnosis for the purpose of analysis:

1. Among multiple IMNCI illnesses, that which was more likely to cause neonatal mortality as per available literature was selected.
2. Among IMNCI and non-IMNCI illnesses, IMNCI illness was selected.
3. Among two non-IMNCI illnesses, that which was likely to incur higher expenditure was selected.

Using the above rules, illnesses in 22 neonates have been classified in the following table:
We have now written at page 12, line 12. “Mean number of illnesses per neonate was 1.09(± 0.28), n=242. We have considered only primary illnesses for analysis i.e. illnesses more likely to cause neonatal mortality (such as IMNCI illnesses) as per the available literature have been selected in cases of multiple illnesses (n=13). Cases where two non-IMNCI illnesses were reported, illnesses likely to incur higher medical expenditure were selected (n=9).”

Comment 4) p.14, line 7. I’m not convinced by the interpretations given here. First, the authors write that the cost of conveyance is significantly different between GPs and NGDs. To be convinced of this, I would like to see a finer measure of dispersion than the range, such as a standard deviation. Even though it still were statistically significant, this

<table>
<thead>
<tr>
<th>Neonates with multiple IMNCI illnesses (n=2)</th>
<th>IMNCI</th>
<th>Illness selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Septicemia</td>
<td>Meningitis</td>
</tr>
<tr>
<td>2.</td>
<td>Pneumonia</td>
<td>Persistent diarrhea</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMNCI and non-IMNCI Illness (n=11)</th>
<th>IMNCI</th>
<th>Non-IMNCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>Septicemia</td>
<td>Conjunctivitis</td>
</tr>
<tr>
<td>4.</td>
<td>Septicemia</td>
<td>Umbilical granuloma (Others)</td>
</tr>
<tr>
<td>5.</td>
<td>Septicemia</td>
<td>Oral thrush (Others)</td>
</tr>
<tr>
<td>6.</td>
<td>Septicemia</td>
<td>Diarrhea</td>
</tr>
<tr>
<td>7.</td>
<td>Septicemia</td>
<td>Conjunctivitis</td>
</tr>
<tr>
<td>8.</td>
<td>Fever</td>
<td>Oral thrush (Others)</td>
</tr>
<tr>
<td>9.</td>
<td>Fever</td>
<td>Umbilical granuloma (Others)</td>
</tr>
<tr>
<td>10.</td>
<td>Pneumonia</td>
<td>Dermatitis</td>
</tr>
<tr>
<td>11.</td>
<td>More than 10 pustules</td>
<td>URI</td>
</tr>
<tr>
<td>12.</td>
<td>Umbilical sepsis</td>
<td>URI</td>
</tr>
<tr>
<td>13.</td>
<td>Umbilical sepsis</td>
<td>Dermatitis</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Two non-IMNCI Illnesses (n=9)</th>
<th>Non-IMNCI</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.</td>
<td>URI</td>
</tr>
<tr>
<td>15.</td>
<td>Conjunctivitis</td>
</tr>
<tr>
<td>16.</td>
<td>Dermatitis</td>
</tr>
<tr>
<td>17.</td>
<td>Dermatitis</td>
</tr>
<tr>
<td>18.</td>
<td>URI</td>
</tr>
<tr>
<td>19.</td>
<td>Conjunctivitis</td>
</tr>
<tr>
<td>20.</td>
<td>URI</td>
</tr>
<tr>
<td>21.</td>
<td>Dermatitis</td>
</tr>
<tr>
<td>22.</td>
<td>Jaundice</td>
</tr>
</tbody>
</table>

Among these 22 neonates, multiple providers were consulted for only 2 cases (S.No 1 and S.No 7).
difference would still be very small relatively to the combined cost. On the other hand, the authors say that the combined cost of GPs and NGDs is not statistically different. This interpretation is based on a statistical test yielding a p-value of 0.07. However, the observed difference in cost is important: NGD services cost 77% more than GP ones. It might thus be the case that these costs are in fact different but that it is not possible to reject the hypothesis that they are the same based on the available sample. Indeed, the relatively small sample size combined with high dispersion might not provide sufficient statistical evidence. In short: the results do not show that the cost are the same, they simply cannot show that they are different. To conclude, the reverse interpretation seems more plausible to me: the cost of conveyance is about the same for both the GPs and NGDs but the combined cost is different due to higher consultation price and medicine. Does this reversed interpretation make sense to the authors based on their expertise of the Lucknow's context?

**Response:** We agree with the reviewer that the difference in mean costs of conveyance among GPs and NGDs may be small relative to the difference in the combined cost. We have removed the sentence “But since cost of conveyance was significantly higher in care-seeking from GPs, combined expenditure did not differ significantly between NGDs and GPs” given in the previous version.

We have now written at page 19, line 4 “Mean out-of-pocket expenditure in seeking care from NGDs was 1.77 times higher and from NGCs was 3 times higher as compared to Government Providers (p<0.001).” Now, we have also given Standard Deviations (SDs) for mean out-of-pocket expenditures in Table 4 and the unit of measurement i.e. Indian Rupees (INR) as a footnote.

**Minor Essential Revisions:**

Comment 5). p.2, line 12. The description of the methods is incomplete as it only describes the sample used. I would suggest mentioning what kind of statistical analysis is performed in the study. Maybe the 4 last lines of the previous section (Background) could be moved here. The same comment applies to section (Methods, p.5) which I would rename “Data” as it exclusively describes the dataset. The methods used are in fact described in the next section (Data Analysis, p.8). I find however that this section is too
short and that the paper would gain by adding a clear description of the statistical analysis performed in the study. Maybe the tables could be presented here, which would make the presentation of the results easier to read.

**Response:** As per the suggestions of the reviewer, the **Methods** section in **Abstract** has been revised. It now reads:

“**Methods:** The study was conducted at an urban Reproductive and Child Health (RCH) center and a District hospital. Neonates were enrolled within 48 hours of birth and were followed-up once at 6 weeks ± 15 days at the OPD of the respective hospitals or at home. This study assessed (1) distribution of neonatal illnesses and different health providers sought (2) distribution of out-of-pocket expenditures by type of illness and type of health provider sought (3) socio-economic distribution of neonatal illnesses, care-seeking behavior and out-of-pocket expenditures. Per-protocol analysis was performed.”

Under the main heading of **Methods** (in Main text) we have given sub-headings of (1) **Study design** (2) **Setting** (3) **Participants** and (4) **Construction of income strata**. We have now included “**Construction of income strata**” as a sub-heading in Methods section.

As per the reviewer’s suggestion we have now included a detailed **Statistical Analysis** section, which reads as under:

**Statistical Analysis:**

To assess the distribution of different categorical variables among five strata (S1-S5) in Table 1, chi-square test for equality of proportions (H$_0$: $p_1 = p_2 = p_3 = p_4 = p_5$) is used. The point prevalence of neonatal illnesses along with 95% confidence intervals have been given in Table 2. The mean, standard deviation along with range have been given for out-of-pocket expenditure for non-hospitalized (Table 3) as well as for hospitalized neonates. To compare the care-seeking expenditure among the three health care-providers (Table 4), Kruskall-Wallis test is used, whereas for pair-wise comparison Mann-Whitney U test is used. Mann Whitney U test is uniformly used wherever pair-wise comparison of incomes
or expenditures is done and chi-square test has been used wherever proportions have been compared. We also report crude odds ratios (OR) along with 95% confidence intervals and p-values for baseline variables associated with care-seeking behavior. Per-protocol analysis has been performed. For all statistical tests p-value of < 0.05 is taken to be significant.”

Comment 6) p.3, line 4. The rationale for recommending promotion of qualified medical care-seeking for sick neonates is missing in the conclusion. I would add it here to make this conclusion stand-alone.

Response: We have revised the Conclusion and now it reads:

“Since more than half of the neonates have morbidity and out-of-pocket expenditure on neonatal illnesses often exceeds the family income of the lower strata of the low income group in the community, there is a need to either introduce health insurance scheme or subsidize health care for them. Also, since NGDs, half of which could be unqualified are leading health providers, qualified medical care-seeking for sick newborns should be promoted in urban Lucknow.”

Comment 7). p.6, line 3. Is there information on participation rate? Were most mothers willing to come to the OPD on pre-specified dates?

Response:
At enrollment 496 (97.3%) mothers were willing and consented to come to the OPD on pre-specified dates. Only 14 (2.7%) mothers were not sure and none of them said ‘No’.

We have written under the sub-section on Participants and definitions “Mothers, most (97.3%) of which were willing to come to the outpatients’ department (OPD) with the baby for follow-up on pre-specified dates in the next 6-8 weeks for DPT immunization were enrolled, after obtaining written informed consent.”
Comment 8). pp. 8-9. The results presented here are not all presented in a table, which makes it hard to go through them independently from the text. I would add a column in Table 1 giving the unconditional frequencies of the categorical variables and sample means of the quantitative ones.

Response: Table 1 has been revised and now includes a new column of unconditional frequencies (Overall and site-wise). The results presented at pp. 8-9 (previous version) do not pertain to Table 1. We have only given it in text and there is no duplication in a table.

Comment 9). p. 9, line 9. I would mention here that we are now looking at Table 2.

Response: Now we have mentioned it and in the revised manuscript it appears at page 12, line 8.

Comment 10). p. 10, lines 11-20. I recommend complementing Table 3 by adding a line for all IMNCI illnesses and another for all non-IMNCI ones. This would make this part of the text easier to follow.

Response: We have now included at p. 14 line 3 “Out-of-pocket expenditures for IMNCI illnesses which were diarrhea with dehydration, persistent diarrhea, ear discharge, fever, pneumonia, septicemia, more than 10 pustules and umbilical sepsis have been shown in Table 3, along with out-of-pocket expenditures on non-IMNCI illnesses which were conjunctivitis, dermatitis, diarrhea, upper respiratory tract infection, jaundice and others.”

Comment 11). p. 11, lines 3-10. I find confusing that Table 3 presents out-of-pocket expenditure for non-hospitalized neonates in Indian rupees whereas the same information for hospitalized neonates is presented in US dollars. In addition, sample means are sometimes given without the unit of measurement and the reader is left wondering whether they relate to INR or US$. I strongly recommend to chose only one unit of measurement and to stick to it all over the text and tables as well.

Response: Now, Indian Rupees (INR) has been taken as a uniform unit of measurement throughout the text and it has been explicitly stated in the text as well as in the footnote of the Tables. All figures have been re-checked and all typographical errors have been removed.
Comment 12). p.14, line 2. I would note that neonatal morbidity seems to be significantly lower only in the richest income bracket.

Response: We have removed the sentence “Neonatal morbidity was higher among lower income strata but these were less likely to seek any medical care. We also found that government’s subsidized services were used mostly by the higher income groups.” which appeared in the previous version.

We now write “we observed that sick newborns among lower income strata were less likely to receive any medical care (<0.0001) and were also less likely to be seen by GPs (p=0.03)”

Discretionary Revisions:

Comment 13). p.7, line 10. I find the word “extract” rather strong. Maybe “get” or “obtain” would be more adequate.

Response: As suggested by the reviewer, we have now removed “extract” and have used the word “obtain” at page 8, line 1 in the revised manuscript.

Comment 14). p.8, line 10. I would define the abbreviation for Indian rupees (INR) the first time it is used (either on page 2., line 19 or p.5, line 10).

Response: As suggested, this has been done in the abstract (page 3, line 2) as well as at the start of the text at page 5, line 12 in the revised manuscript.

Comment 15). p.9, line 14. I would write “over all” in one word. This also appears later on in the text.

Response: We have now used “overall” instead of “over all” throughout the text.

Comment 16). p.11, line 20. I would define the abbreviation “LBW” the first time it is used.

Response: This has been done the first time where it has been used i.e. at page 15 line 16 in the revised manuscript.
Comment 17). p.16. Considering that the conclusion is very short I would merge it with the discussion.

Response: We have merged the conclusion with the discussion in the revised manuscript.

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests: I declare that I have no competing interests.