## PEER REVIEW HISTORY



## ARTICLE DETAILS

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| **TITLE (PROVISIONAL)** | Non-communicable disease (NCD) corners in public sector health facilities in Bangladesh: Challenges and opportunities for improving NCD services at the primary health care level |
| **AUTHORS** | Rawal, Lal; Kanda, Kie; Biswas, Tuhin; Tanim, Md. Imtiaz; Poudel, Prakash; Renzaho, Andre; Abdullah, Abu; Shariful Islam, Sheikh Mohammed; Ahmed, Syed Masud |

## VERSION 1 – REVIEW

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| **REVIEWER** | Dinesh Neupane<br>Johns Hopkins Bloomberg School of Public Health, USA |
| **REVIEW RETURNED** | 14-Feb-2019 |

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| **GENERAL COMMENTS** | 1. The study presents the situation and challenges reported by doctors and planning officer faced by NCD Corners established in the public sector. In the rising trend of NCD morbidity and mortality, expanding the services related to NCDs at primary health care in many low and middle-income countries including Bangladesh is urgently needed. In this aspect, the article provides valuable insights which will be useful to the policymakers. However, the results of the paper are very discouraging. The conclusion is that NCD Corners are not working at all. Are there any positive aspects of NCD Corners in Bangladesh? Did not the authors find anything positive?<br><br>2. The study is missing important information from patient and policymakers. The lack of funding cannot be a sufficient justification for this. Further, the interview was only conducted for doctors and planning officer. Paramedics may have a different opinion regarding the NCD corners. It is likely that participants are not answerable for the lack of medicine, equipment and human resources. So, it is unclear why NCD Corners are established without having medicine, human resources and infrastructure. Thus, results need to be interpreted cautiously. I suggest to narrow down the scope of paper mentioning that results are based only on interview with medical doctors and planning officers.<br><br>3. The description of NCD Corners is incomplete. How many NCD Corners are functional across the country? What is the difference between NCD Clinic and OPD clinic? Are only physician-run NCD corners? Does the patient come at OPD clinic at first and refer to NCD Corners or patient can directly visit NCD corners? If they directly visit, what would happen to non-NCD cases? If the same doctor works for NCD Corner and OPD Clinic, how NCD Corners are distinct from OPD clinic? |

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| | 4. The specific activities of NCD corners are missing from the manuscript. What exactly NCD corners are supposed to do? How many staff are sectioned and who are they? For example in case of hypertension does the provider supposed to perform the following activities? measuring blood pressure, diagnosing hypertension, initiating treatment, refilling treatment, lifestyle counselling, support for adherence to medication? Are the provider received specific training on managing NCDs? If so, can the author describe more detail?<br><br>5. Authors repeatedly mentioned that selecting 12 NCD Corners as a major limitation of the study. The interpretation of the qualitative study does not depend on the sample size. It relies on whether the information was saturated or not. Does interviewing 15 participants saturated the information needed or not? |

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| **REVIEWER** | ngelgau, Michael<br>NIH, USA |
| **REVIEW RETURNED** | 22-Mar-2019 |

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| **GENERAL COMMENTS** | Reviewer Comments<br>Title: Non-communicable disease (NCD) corners in public sector health facilities in<br>Bangladesh: Challenges and opportunities for improving NCD services at primary health care level<br>Authors: Rawal LB et al.<br><br>General Comments<br>The authors conducted a quantitative and qualitative assessment of the upazila level clinics in Bangladesh and assessed basic infrastructure, availability of equipment and supplies, diagnostics and laboratory facilities, human resources, and NCD drug availability. In addition they interviewed clinic staff and queried about they awareness and capability to provide screening, diagnosis, treatment, and follow-up and referral. They present quantitative data on service readiness and qualitive data from the interviews and selected quotes from interviewees. Their major finding where that NCDs are a big problem, that the new NCD corners approach seemed to be helping address the burden, but that many challenges remain.<br><br>There are a number of areas that could strengthen the study including more information about the sampled NCD corners that participated and how they are similar/different for the others that did not participate. Information on how long the NCD corners has been established is needed. This may be an important factor in their performance and readiness. While the qualitative information was informative, more context from those other than the participant who gave the quote is needed. While descriptions of the frequency of NCDs seen in the clinic is provide, it is more qualitative and it is unclear how it represents the NCD burden.<br><br>The main strength of this study is the quantitative data from the readiness assessment. This data would benefit from having qualitative data more focused on why these deficiencies are noted and actions taken to remedy them. Less valuable is to finds readiness items missing and this being reconfirmed during the qualitative interviews – most of which is reported.<br><br>Specific Comments |

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| | The manuscript needs a writer/editor to review it and correct numerous grammar, syntax, and typo errors. It will need a careful read and editing to remedy this problem.<br><br>NCD Corners is a non-standard way to describe a clinic. Please provide a definition of this space. |

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| **REVIEWER** | Isabel Garcia de Quevedo<br>CDC Foundation<br>USA |
| **REVIEW RETURNED** | 02-Apr-2019 |

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| **GENERAL COMMENTS** | I appreciate the opportunity to review this paper titled: Non-communicable disease (NCD) corners in public sector health facilities in Bangladesh: Challenges and opportunities for improving NCD services at primary health care level. The study provides an overview of NCD readiness at a specific level within the healthcare system in Bangladesh.<br><br>The title refers to NCD corners as the "unit of study" within Bangladesh health sector, however, there is no reference to NCD corners in the abstract, under setting.<br>In order for the reader to understand the health care system in Bangladesh, I would suggest adding a chart similar to the one this report: Governance and health service architecture https://www.who.int/alliance-hpsr/projects/alliancehpsr_bangladeshabridgedprimasys.pdf?ua=1. Giving an overview of how the Upazila health complex fits in the whole health care system, would be helpful if the reader is not aware of Bangladesh health system.<br>Sampling: It might be a bit far fetched to call it multi-stage sampling, I would first refer to the sampling as a convenience sample and then you can state it was done through stages, but this is not the statistical definition of multistage sampling.<br>The paper needs additional English language edits. I did not include all language edits in my review so please review as the grammar and language is not ready for publication. For example line 6, page 15 paragraph does not make sense as it is written now: "Some of those NCD corners which had glucometers available, however the supplies such as, glucometer strips or batteries were out of stock"<br>Specific comments by page, line number below:<br>1,45: Delete the word "altogether" – unnecessary for this sentence.<br>1,48: No need to say "The participants included"<br>2,16: I don't see strengths under strengths and limitations of this study. What is specifically the strength of this study? Can it be used by other regions or countries to evaluate their readiness? Can it help provide some perspective to put programs and/or policies in place?<br>3,14: Upozila – if written by mistake change to Upazila.<br>3, 48: This is the first time KII appears in text, please define.<br>11, 34: Patients' does not need an apostrophe in this situation.<br>Table 1 is not easy to read. The separation by division and UHC code is not useful unless the reader knows the area or the code. My suggestion would be to create a bar graph including on the x axis "physical infrastructure" column. And on the Y axis the number of facilities that have it. For example Adequate lighting – available in 10 out of 10 UHCs. Blood cholesterol assay – available in 4 out of 10 UHCs. |

**VERSION 1 – AUTHOR RESPONSE**

Reviewer: 1

1. The study presents the situation and challenges reported by doctors and planning officer faced by NCD Corners established in the public sector. In the rising trend of NCD morbidity and mortality, expanding the services related to NCDs at primary health care in many low and middle-income countries including Bangladesh is urgently needed. In this aspect, the article provides valuable insights which will be useful to the policymakers. However, the results of the paper are very discouraging. The conclusion is that NCD Corners are not working at all. Are there any positive aspects of NCD Corners in Bangladesh? Did not the authors find anything positive?

Response: Thank you for your thorough review of the paper and valuable feedback. Much appreciated. In the revised manuscript, we clarified the challenges faced by NCD corners and highlighted the initiatives being taken by the Government of Bangladesh for prevention and control efforts of NCDs in Bangladesh. Some of these include: Government's commitment to NCD prevention and control; setting up NCD corners at sub-district level as first point of care; allocation of health care staff for NCD corner; allocation resources (finance, logistics/ drugs and supplies); NCD education and counselling to increase awareness and; referral and follow up services when needed etcPlease see Abstract (findings and conclusion) and also the results, discussion and conclusion sections for details.

2. The study is missing important information from patient and policymakers. The lack of funding cannot be a sufficient justification for this. Further, the interview was only conducted for doctors and planning officer. Paramedics may have a different opinion regarding the NCD corners. It is likely that participants are not answerable for the lack of medicine, equipment and human resources. So, it is unclear why NCD Corners are established without having medicine, human resources and infrastructure. Thus, results need to be interpreted cautiously. I suggest to narrow down the scope of paper mentioning that results are based only on interview with medical doctors and planning officers.

Response: We have now re-stated the limitations of the study to highlight your above concerns. Please see page 2, which also highlights that the study was focused on the medical doctors, managers and planning officers. Also, we have gathered data from the participants during stakeholder meeting in Dhaka, which was attended by several policy makers. We have incorporated these policy makers' opinion, feedback, comments and suggestions in the paper.

3. The description of NCD Corners is incomplete. How many NCD Corners are functional across the country? What is the difference between NCD Clinic and OPD clinic? Are only physician-run NCD corners? Does the patient come at OPD clinic at first and refer to NCD Corners or patient can directly visit NCD corners? If they directly visit, what would happen to non-NCD cases? If the same doctor works for NCD Corner and OPD Clinic, how NCD Corners are distinct from OPD clinic?

Response: Thanks for these thoughtful inquiries. We described how the NCD corners function in Introduction section (Paragraph 2). We described that the patterns of patients flow to the NCD corner varies, either directly visiting the assigned doctor to NCD corner or after the preliminary consultation in general OPD. Most NCD corners have developed pathways in the registration booth to direct the patient to the specific OPD unit based on the individual health problems. We have highlighted these findings in the result section, under the NCD service delivery/ screening, diagnosis and treatment sub-component.

4. The specific activities of NCD corners are missing from the manuscript. What exactly NCD corners are supposed to do? How many staff are sectioned and who are they? For example, in case of hypertension does the provider supposed to perform the following activities? measuring blood pressure, diagnosing hypertension, initiating treatment, refilling treatment, lifestyle counselling,

support for adherence to medication? Are the providers received specific training on managing NCDs? If so, can the author describe more detail?

Response: The NCD unit of DG health services has been playing key roles in terms of formulating SOP, developing training guidelines, and organizing NCD trainings for health care providers. The medical doctor of NCD unit were given opportunity to participate the NCD prevention and control related training, which also identified key roles and responsibilities of each NCD corner. Further, the UHCs are directed by the NCDC unit of DG health services in terms of establishing NCD corner in each UHC and delivering the NCD services according to the SOP. Availability of the equipment, tools and the levels of NCD services in each NCD corner varies, which we have described in the findings section (see results section under service readiness sub-theme for details), and most NCD corners do provide basic NCD services including NCD screening, diagnosis, consultation, counselling, and referral etc. In the revised manuscript, we have provided these details in the results section (under NCD service delivery/ screening, diagnosis and treatment sub-component).

5. Authors repeatedly mentioned that selecting 12 NCD Corners as a major limitation of the study. The interpretation of the qualitative study does not depend on the sample size. It relies on whether the information was saturated or not. Does interviewing 15 participants saturated the information needed or not?

Response: We acknowledge the reviewer's comment. We have removed the description about the sample size and revised the sections. We achieved the data saturation with 10 participants but kept the recruitment process continuing to ensure the participants were well representative from all geographical areas including haor (wetland area), coastal, rural and hill tract.

Reviewer 2:
General Comments
The authors conducted a quantitative and qualitative assessment of the upazila level clinics in Bangladesh and assessed basic infrastructure, availability of equipment and supplies, diagnostics and laboratory facilities, human resources, and NCD drug availability. In addition, they interviewed clinic staff and queried about they awareness and capability to provide screening, diagnosis, treatment, and follow-up and referral. They present quantitative data on service readiness and qualitive data from the interviews and selected quotes from interviewees. Their major finding where that NCDs are a big problem, that the new
NCD corners approach seemed to be helping address the burden, but that many challenges remain. There are a number of areas that could strengthen the study including more information about the sampled NCD corners that participated and how they are similar/different for the others that did not participate.
Information on how long the NCD corners has been established is needed. This may be an important factor in their performance and readiness. While the qualitative information was informative, more context from those other than the participant who gave the quote is needed. While descriptions of the frequency of NCDs seen in the clinic is provided, it is more qualitative and it is unclear how it represents the NCD burden.
The main strength of this study is the quantitative data from the readiness assessment. This data would benefit from having qualitative data more focused on why these deficiencies are noted and actions taken to remedy them. Less valuable is to finds readiness items missing and this being reconfirmed during the qualitative interviews – most of which is reported.

Responses:
Response: As provisioned by the DG Health Services, Ministry of Health and Family Welfare, Bangladesh, the structure of Upazila Health complexes are more or less similar throughout the

country. The structure of the NCD corners also do not vary significantly. Upon consultation with the NCD control unit of DG health services, we selected the 12 NCD corners using convenience sampling. We clarified the process of sample selection in the methods section. In the introduction section (Paragraph 2), we described that the duration of the NCD corners ranged from two years to five years.

Specific Comments
The manuscript needs a writer/editor to review it and correct numerous grammars, syntax, and typo errors. It will need a careful read and editing to remedy this problem. NCD Corners is a non-standard way to describe a clinic. Please provide a definition of this space.

Response: We have made substantial revision to the manuscript along with major correction on grammars, syntax and typos. Also, the NCD corner details and how it functions is provided in the introduction section (paragraph 2).

Reviewer 3:
The title refers to NCD corners as the “unit of study” within Bangladesh health sector, however, there is no reference to NCD corners in the abstract, under setting.
In order for the reader to understand the health care system in Bangladesh, I would suggest adding a chart similar to the one this report: Governance and health service architecture https://www.who.int/alliancehpsr/ projects/alliancehpsr_bangladeshabridgedprimasys.pdf?ua=1. Giving an overview of how the Upazila health complex fits in the whole health care system, would be helpful if the reader is not aware of Bangladesh health system.

Response: Thank you so much for your comment/ feedback. Much appreciated. We have described the details of health care systems of Bangladesh, including how the health systems functions, organogram including the upazila health complex, how these health complexes function and provide health services at community levels.

Sampling: It might be a bit far-fetched to call it multi-stage sampling, I would first refer to the sampling as a convenience sample and then you can state it was done through stages, but this is not the statistical definition of multistage sampling.
Response: Thank you for your comment/ feedback. We have now revised this and used terminologies like convenience samples and using different stages. We have removed the term multi-stage.

The paper needs additional English language edits. I did not include all language edits in my review so please review as the grammar and language is not ready for publication.
For example, line 6, page 15 paragraph does not make sense as it is written now: “Some of those NCD corners which had glucometers available, however the supplies such as, glucometer strips or batteries were out of stock”

Response: Thanks for your observation. We have revised this statement and also made substantial revision to other similar statements throughout the manuscript.

Specific comments by page, line number below:
1,45: Delete the word “altogether” – unnecessary for this sentence.
Response: Done
1,48: No need to say “The participants included”
Response: Changes made.

2,16: I don't see strengths under strengths and limitations of this study. What is specifically the strength of this study? Can it be used by other regions or countries to evaluate their readiness? Can it help provide some perspective to put programs and/or policies in place?

Response: In the revised manuscript, we have elaborated the strengths and limitations more clearly.

3,14: Upozila – if written by mistake change to Upazila.
Response: Changes made throughout the manuscript.
3, 48: This is the first time KII appears in text, please define.

Response: Changes made

11, 34: Patients' does not need an apostrophe in this situation.
Responses: Changed.

Table 1 is not easy to read. The separation by division and UHC code is not useful unless the reader knows the area or the code. My suggestion would be to create a bar graph including on the x axis "physical infrastructure" column. And on the Y axis the number of facilities that have it. For example, Adequate lighting – available in 10 out of 10 UHCs. Blood cholesterol assay – available in 4 out of 10 UHCs.

Response: Again, thank you for your thoughtful comment/ feedback. We have actually prepared the graphs and explored scope of replacing the table with the graphs. However, given relatively less details that the graphs will present compared to the ones we have included in the table at the moment, we still think that the Table would be best fit. However, we have included the figures as Appendix A, in case you think that we could still present the findings in Figure form.

**VERSION 2 – REVIEW**

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| **REVIEWER** | Dinesh Neupane<br>Johns Hopkins Bloomberg School of Public Health |
| **REVIEW RETURNED** | 02-Jul-2019 |

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| **GENERAL COMMENTS** | The authors have done a commendable job in revising the whole article. Please see the attached file for additional minor comments.<br><br>- The reviewer provided a marked copy with comments. Please contact the publisher for full details. |

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| **REVIEWER** | Isabel Garcia de Quevedo<br>CDC Foundation<br>USA |
| **REVIEW RETURNED** | 28-Jun-2019 |

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| **GENERAL COMMENTS** | Thank you for the opportunity for reviewing this paper again. I believe this is an interesting evaluation of how NCD cornesrs in Bangladesh have been operating and what are their challenges, however, the way the paper is written now it is not very clear. Overall suggestion to review and reorganize the paper, as it still has some highlighted sections and some grammar edits.<br>Please see a few of my comments below: |

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| | 1. The paper still needs editorial language review throughout the document. For example: “We also used health facility observation check-list” an “a” should be included before the word health<br>2. The abstract specifies that 3 data collection methods were used: in-depth interviews, a checklist and a stakeholder meeting, however it is not clear as to who participated in which.<br>3. Under study design, what is health media? Please specify<br>4. Line 25 still has a note to insert a figure<br>5. Sampling strategy for upazilas is specified, but it is not specified how id you select KII and/or interviewees.<br>6. Figure 1 is missing |

**VERSION 2 – AUTHOR RESPONSE**

Editor’s comments

1. Please ensure that the clean and tracked versions of your manuscript are consistent. For example, currently the patient and public involvement statement is present in the clean version of the manuscript but not the manuscript with the tracked changes.

Response: Thank you for your comments. In our previous revision, authors commented on multiple copies, and in merging the comments into one single copy we mistakenly left out the public involvement statement in the Track Changed version that was submitted. In the current revision, we have tried to maintain revision in a single copy.

2. Please work to improve the quality of the English throughout your manuscript. We recommend asking a native English-speaking colleague to assist you or to enlist the help of a professional copyediting service.

Response: Few of our co-authors, who are the Native English speaker too, have thoroughly reviewed the English aspect of the manuscript and we have made substantial revision to the manuscript accordingly.

3. Please revise the ‘Strengths and limitations’ section of your manuscript (after the abstract). This section should contain five short bullet points, no longer than one sentence each, that relate specifically to the methods. The results of the study should not be summarised here.

Response: As advised, we have revised this section and it reads as below:

Strengths and limitations of the study:

• This study is the first to assess the NCD services provided through the government led NCD corners in Bangladesh and to identify challenges and opportunities to strengthening NCD services at the primary health care level.

• We conducted 15 in-depth qualitative interviews with the public sector health care providers, collected data on the NCD service readiness using a health facility observation checklist and conducted a stakeholder meeting.

• Findings of this study are supportive of the national policy to expand NCD corners for improving NCD prevention and management services at the primary health care level.

• This study was unable to capture information beyond four administrative divisions, hence limiting the generalizability of our findings and we did not collect data from patients, which could have added additional insights from the consumers' perspective.

4. Along with your revised manuscript, please include a copy of the SRQR checklist for reporting of qualitative research, indicating the page/line numbers of your manuscript where the relevant information can be found

(http://journals.lww.com/academicmedicine/fulltext/2014/09000/Standards_for_Reporting_Qualitative_Research___A.21.aspx)

Response: The following details to the use of SRQR checklist in our study has now been added (Pls see methods section, page 5, lines 14-21). Also, a copy of the SRQR is attached as an Appendix A, Supplementary document.

The collection and analysis of data from 15 in-depth interviews adhered to the Standards for Reporting Qualitative Research (SRQR) and strategies were employed to enhance the trustworthiness (credibility, transferability, dependability, confirmability and transferability) of the study findings. This included checking the data for accuracy, organising debriefings for completeness of data (KK and IT), using team meeting for coding consensus and providing adequate information about the participants, study settings, and data collection as well as use of direct quotes of the participants to support the findings.

5. Please provide more information about the participants at the start of the results section. This could include area of employment, type of job, range of years of experience, number of men and women interviewed etc. Please do not include any individual, identifiable data.

Response: Again, thank you. We have now added following details in the result section as advised. Pls see page 5, lines 27-38 and page 6, lines 1-5:

Participants: Participants for the qualitative interviews (N=15) included Upazila health and family planning officers (n=4), resident medical officers (n=6), medical doctors (n=4) and civil surgeons (n=1). Of the 15 participants, 12 were males and 3 were females and their duration of employment ranged from 18 months (for resident medical officers) to the fifteen years (for civil surgeon). All participants, except civil surgeon were based at the UHC, and were responsible for the provision of clinical and preventive health services. Civil surgeon was based at the district hospital and was responsible for the overall management of health service delivery in its' catchment area. Participants for the stakeholder meeting were government health managers and health policy makers working at the Directorate General of Health Services, Ministry of Health and Family Welfare; researchers and academicians from different research institutes and universities; representatives from international and national non-governmental organizations; private health practitioners and representatives of news media.

Participants noted that the burden of NCDs in Bangladesh is increasing rapidly and the government's initiative to establish NCD corners at the UHC level was timely. Participants also highlighted several challenges including the shortage of human resources, inadequate capacity building in NCD prevention and management, limited supplies of drugs and logistics, and poor monitoring of service delivery and coordination mechanisms.

6. Please ensure that all reviewer comments are reflected by adequate modification to the text, not just explained in the point by point response. For example, in response to reviewer 2, it is not clear where in the manuscript you have clarified that the duration of the NCD corners ranged from two years to five years.

Response: Apology for the inconvenience. We have included these details in the introduction section as below. (Pls see page 2, Introduction, Lines 4-8)

In 2012, the government initiated a new initiative, NCD corner at upazila (sub-district) health complexes (UHCs) for addressing NCDs. These NCD corners are dedicated to providing prevention and care services for common NCDs and related conditions such as cardiovascular diseases (CVDs), diabetes, and chronic respiratory diseases (asthma and chronic obstructive pulmonary disease); and screening for certain cancers.

7. Please ensure that all comments from reviewer 2 have been responded to. For example, we cannot see a response to the comment "While the qualitative information was informative, more context from those other than the participant who gave the quote is needed".

Response: We have thoroughly revised the results section and added with relevant details to ensure more contextual to study as advised. Pls see the results section the following pages:

Page 6, lines 3-9; 14-20; 24-28; 33-35

Page 9, lines 1-6; 21-25; 30-35

Page 10, lines 13-18; 32-34

Reviewer 3:

1. The paper still needs editorial language review throughout the document. For example: “We also used health facility observation check-list” an “a” should be included before the word health

Response: Thank you for your comment. Few co-authors in this manuscript are the native English speaker too, so they have now done a thorough edit of the language.

2. The abstract specifies that 3 data collection methods were used: in-depth interviews, a checklist and a stakeholder meeting, however it is not clear as to who participated in which.

Response: We have now added with details in the abstract, under the participant section as below (Pls see page 1, lines 39-43):

Participants for the in-depth interviews were health service providers, namely, Upazila health and family planning officers (n=4), resident medical officers (n=6), medical doctors (n=4) and civil surgeons (n=1). Participants for the stakeholder meeting were health policy makers, health program managers, researchers, academicians, NGO workers, private health practitioners, and news media reporters.

3. Under study design, what is health media? Please specify

Response: We mean to say the media primarily reporting health related news. We have now replaced this with “news media”. We hope this is much simpler. Pls see page 1, line 35.

4. Line 25 still has a note to insert a figure

Response: As per authors guidelines, figure is submitted in a separate file, which will be inserted to page 5 as indicated.

5. Sampling strategy for upazilas is specified, but it is not specified how did you select KII and/or interviewees.

Response: Thank you again. We have now added following details to the methods section. Pls see page 4, lines 6-9:

An inventory of staff responsible for providing NCD services through the NCD corners was undertaken, then the participants were purposefully selected to achieve diversity in terms of experience, level of appointment and field of training.

6. Figure 1 is missing

Response: Figure 1 is a Sampling strategy, as per authors guidelines, it is provided in a separate file attached in the manuscript submission.