PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Impact evaluation of a social protection program paired with fee waivers on enrolment in Ghana's National Health Insurance Scheme
AUTHORS	Palermo, Tia; Valli, Elsa; Ángeles-Tagliaferro, Gustavo; de Milliano, Marlous; Adamba, Clement; Spadafora, Tayllor Renee; Barrington, Clare

VERSION 1 – REVIEW

REVIEWER	Carolyn Huang U.S. Department of Labor, USA This disclaimer informs readers that the views, thoughts, and opinions expressed in the text belong solely to the author, and not necessarily to the author's employer, organization, committee or other group or individual.
REVIEW RETURNED	09-Mar-2019

GENERAL COMMENTS	4) Identification strategy could be described in greater detail to ensure confidence that assumptions of RDD were met, including confirmation of the "sharpness"/adherence of treatment assignment based on quantitative assignment value (PMT). For replication purposes, the indicators used to construct the PMT should be laid out. 10) - There appears to be a discrepancy that needs to be reconciled in the number of individuals interviewed or by proxy at baseline, between Figure A1 and the results (Page 10, Line 14).. Based on the figure, it seems that there should be 4,968 (2,819 + 2,149) children in the sample and 7,333 (3,720+3,613) adults whereas results reports 4,736 children and 6,865 adults. Endline numbers are consistent.

REVIEWER	Kalyani Raghunathan International Food Policy Research Institute, India
REVIEW RETURNED	08-May-2019

GENERAL COMMENTS	Much has been written about the impact of cash transfer programs on health outcomes, including health-seeking behavior. Less is known about the effects of tying cash transfer schemes with health insurance, using the transfer in the former to cover the cost of enrolment in the latter. This paper uses the pilot expansion of a cash transfer scheme in Ghana – Livelihoods Empowerment Against Poverty (LEAP) – to a new demographic, that of pregnant women and children under the age of 12 months, to look at the impact of these cash and fee waivers on enrolment in the National Health Insurance Scheme (NHIS). Eligibility for the LEAP program was based on a proxy means test (PMT), the score on which was used to

	identify a comparison group, limited to those scoring close to the PMT cut-off. I have several points which I think need further explanation/investigation: • It in unclear when exactly LEAP 1000 was launched – while the authors give dates for the baseline and endline surveys in the subsection on Study setting and design, they do not tell us when the pilot was implemented. • What was the reason that women with children under the age of 15 months were enrolled in the study at baseline? According to previous description (page 6) LEAP 1000 is intended for pregnant women and children under the age of 12 months. • Since the timeline between baseline and endline was approximately two years and since LEAP 1000 eligibility was based on pregnancy status, how is the longitudinal nature of the data intended to help answer the research questions? Would it not have been more appropriate to sample two cross-sections of pregnant women/women with children<12 months? • The questions about NHIS enrolment are not comparable across baseline and endline. At baseline, respondents are asked if they are enrolled in any insurance scheme, with NHIS as an option. At endline, they are specifically asked about NHIS. This poses problems in interpretation. The framing used at baseline would likely bias downward reports of NHIS enrolment, especially if respondents were enrolled but didn't know/remember the name of the scheme. The framing used at endline, being a direct question, could bias upward reports of NHIS enrolment. Both of these biases working together would tend to overestimate the impact of the fee waiver on enrolment, wrongfully attributing this improvement in enrolment to the intervention (rather than to reporting biases). The authors do not discuss this at all. • When was the 'targeting phase' the authors refer to on page 7? How much prior to the actual evaluation? • On page 7, the authors say that the baseline survey collected information on 2497 women who were pregnant at the time of targeting or had a child under 15 months of age. They later say (page 9) that they stratify the results by age of the child (5-15 – is this months? Years?) and by age of the mother. Given the sampling criteria – pregnancy and age of child – the following stratification for analysis seems strange and needs justification. • Within the comparison households selected, were there multiple eligible women? If yes, how was the respondent woman chosen? Please elaborate. • It is incorrect to state that parallel trends are satisfied simply because treatment and comparison households belong to the same communities. This needs to be tested, using NHIS enrolment data from within both sets of households for a period of time prior to the baseline of this study. If this cannot be done due to lack of data, the authors should be up front about this limitation, and in that case rely more on the RDD nature of the study and demonstrate balance across a range of characteristics that could be related to enrolment. • Was any information of the waiving of the NHIS fee provided to the beneficiaries? Could some more detail be provided on this?

REVIEWER	Samir Garg State Health Resource Centre, Chhattisgarh India
REVIEW RETURNED	30-Jun-2019

GENERAL COMMENTS	According to Alhassan et al (Reference no. 7), around 60% of the enrolled under NHIS have the exemption from paying premium. The

	current manuscript does not clarify whether NHIS provides premium-waiver for indigent or other categories, irrespective of LEAP programme. If NHIS provides exemptions for people outside LEAP, then the categories involved and criteria used should be described in comparison to LEAP. What proportion of country's population belongs to such categories and among them what proportion are covered under NHIS with or without LEAP? This information is necessary to understand the LEAP1000 intervention. The literature review in the introduction is thin. It does not cover adequate literature on Ghana's health system and NHIS. International literature on role of Publicly Funded Health Insurance schemes in poorer countries has also been ignored. No comparison of NHIS premium and amount of cash transfer has been provided. The statistical analysis has not addressed the potential issue of endogeneity. The quantitative analysis shows around 15 percent-point increase in NHIS enrolment for treatment group, reaching around 45% at endline. Considering that LEAP provided premium-waiver as well as cash, this seems to be a modest improvement in enrolment for LEAP beneficiaries. The important finding is that - most of the non-enrolled among LEAP families still expressed that premium-cost was the main barrier. This indicates a big problem in the way the LEAP intervention was implemented. Rest of the analysis does not explain this adequately. The discussion attributes the gap in enrollment to awareness and annual renewal requirement. The awareness aspect could have been included in the quantitative questions too. One major weakness in qualitative part of the study is that it did not cover stakeholders other than families. The confusion regarding premium-waiver among LEAP families is a major issue. It can be better explained if perspectives of other stakeholders, especially the implementers at various levels were also covered. Distance between the families and facilities where care is available under NHIS, i.e. geographical availability of services, could have been a factor. The analysis presented does not include this aspect. Annual renewals were found to be a barrier and recommendation is to do it away for LEAP families. There should be some information on why such a requirement exists in the scheme. What was the perspective of implementers from NHIS? If it should be removed, why limit the change to LEAP families? Similarly, why restrict premium-waivers to LEAP families? Why not make it free for all families in Ghana? Premiums constitute just 4% of NHIS income anyway (Alhassan et al – Reference 7). On Page 6, first three lines say that there are a lot of gaps in services. These are systemic gaps that increased enrollment cannot solve. Later analysis tends to ignore this aspect. Discussion repeats the introduction and does not compare the findings adequately with available literature on programmes promoting enrolment in health insurance schemes. There is also potential to invoke the 'targeting' vs 'universal' debate, which can be relevant to studies of such enrolment in welfare programmes. Isn't NHIS supposed to be a universal programme? The write-up has equated enrolment under NHIS with access to healthcare. This is an error. Enrolment in an insurance scheme may or may not improve access. Enrolment of a person with a particular view has been portrayed as evidence of impact (Page 12, line 8-9). It need not be. Poor availability of drugs in NHIS-accredited facilities has been described as a challenge beyond NHIS (Page 13, Line 2-3). It is

	difficult to accept this comment portraying this challenge as “beyond NHIS”. Availability of medicines is a very basic component which a scheme like NHIS should aim to address.

VERSION 1 – AUTHOR RESPONSE

Reviewer: 1
Reviewer Name: Carolyn Huang
Institution and Country: U.S. Department of Labor, USA
This disclaimer informs readers that the views, thoughts, and opinions expressed in the text belong solely to the author, and not necessarily to the author’s employer, organization, committee or other group or individual.
Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below
4) Identification strategy could be described in greater detail to ensure confidence that assumptions of RDD were met, including confirmation of the “sharpness”/adherence of treatment assignment based on quantitative assignment value (PMT). For replication purposes, the indicators used to construct the PMT should be laid out.

> *Response: We agree with the reviewer comment and revised the description of the identification strategy as well as the conditions for the validity of the RDD to hold as well as additional details on the sharpness/fuzziness design of the study (P9, lines 11-19). However, we are not permitted to share the details about the construction of the PMT as this information is not shareable as per government guidelines.*

There appears to be a discrepancy that needs to be reconciled in the number of individuals interviewed or by proxy at baseline, between Figure A1 and the results (Page 10, Line 14). Based on the figure, it seems that there should be 4,968 (2,819 + 2,149) children in the sample and 7,333 (3,720+3,613) adults whereas results reports 4,736 children and 6,865 adults. Endline numbers are consistent.

> *Response: We have verified and corrected the figures in Figure A1. Thank you for bringing this to our attention.*

Reviewer: 2
Reviewer Name: Kalyani Raghunathan
Institution and Country: International Food Policy Research Institute, India
Please state any competing interests or state ‘None declared’: None declared

Please leave your comments for the authors below
Much has been written about the impact of cash transfer programs on health outcomes, including health-seeking behavior. Less is known about the effects of tying cash transfer schemes with health insurance, using the transfer in the former to cover the cost of enrolment in the latter. This paper uses the pilot expansion of a cash transfer scheme in Ghana – Livelihoods Empowerment Against Poverty (LEAP) – to a new demographic, that of pregnant women and children under the age of 12 months, to look at the impact of these cash and fee waivers on enrolment in the National Health Insurance Scheme (NHIS). Eligibility for the LEAP program was based on a proxy means test (PMT), the score on which was used to identify a comparison group, limited to those scoring close to the PMT cut-off. I have several points which I think need further explanation/investigation:

- It in unclear when exactly LEAP 1000 was launched – while the authors give dates for the

baseline and endline surveys in the subsection on Study setting and design, they do not tell us when the pilot was implemented.

Response: targeting occurred between March and July 2015, and the first payment occurred in September 2015. We have added this information to the text (P10, line 2).

- What was the reason that women with children under the age of 15 months were enrolled in the study at baseline? According to previous description (page 6) LEAP 1000 is intended for pregnant women and children under the age of 12 months.

Response: In our original submission (and maintained the current version), the first endnote responds to this question as follows: "Infants under 15 months were accepted as eligible to avoid excluding children due to variations in quality of birth date data and/or the extended duration of the targeting process."

- Since the timeline between baseline and endline was approximately two years and since LEAP 1000 eligibility was based on pregnancy status, how is the longitudinal nature of the data intended to help answer the research questions? Would it not have been more appropriate to sample two cross-sections of pregnant women/women with children<12 months?

Response: Since assignment of households was only done once at baseline (no re-targeting), there were no additional beneficiaries added after baseline. Therefore, there was no reason to collect cross-sectional data at endline.

- The questions about NHIS enrolment are not comparable across baseline and endline. At baseline, respondents are asked if they are enrolled in any insurance scheme, with NHIS as an option. At endline, they are specifically asked about NHIS. This poses problems in interpretation. The framing used at baseline would likely bias downward reports of NHIS enrolment, especially if respondents were enrolled but didn't know/remember the name of the scheme. The framing used at endline, being a direct question, could bias upward reports of NHIS enrolment. Both of these biases working together would tend to overestimate the impact of the fee waiver on enrolment, wrongfully attributing this improvement in enrolment to the intervention (rather than to reporting biases). The authors do not discuss this at all.

Response: There are two reasons for which we believe in practice does not bias the estimates: First, given the design, treatment and comparison groups are very similar, therefore we expect the bias in the T and C group to be very similar at each point in time. Therefore, in a DID approach these biases cancel out. Second, we believe this bias to be small since in practice NHIS is the only insurance available in these communities. At baseline, less than 0.2 per cent reported having a different insurance.

- When was the 'targeting phase' the authors refer to on page 7? How much prior to the actual evaluation?

Response: we have added the months of targeting (March – July 2015) in the text (P9, line 9).

- On page 7, the authors say that the baseline survey collected information on 2497 women who were pregnant at the time of targeting or had a child under 15 months of age. They later say (page 9) that they stratify the results by age of the child (5-15 – is this months? Years?) and by age of the mother. Given the sampling criteria – pregnancy and age of child – the following stratification for analysis seems strange and needs justification.

Response: we have added "years" to clarify that the age is in years, not months (P11, line 16). Indeed, the targeting and sampling criteria were based on pregnant women or women with a child under the age of 15 months. However, data were collected on NHIS enrolment of all household members, and therefore we conduct our analysis at both the household and individual level, where the latter includes all household members, not just those targeted by the program. This is justified because the NHIS fee waiver applies to all LEAP household members, not just the targeted individuals.

• Within the comparison households selected, were there multiple eligible women? If yes, how was the respondent woman chosen? Please elaborate.

Response: Only one woman per household is eligible for LEAP 1000. We have added this in the study setting and design section (P 8, line 23). A validation team from the social welfare department checked to confirm there were no multiple eligible women in a household before enrolment.

• It is incorrect to state that parallel trends are satisfied simply because treatment and comparison households belong to the same communities. This needs to be tested, using NHIS enrolment data from within both sets of households for a period of time prior to the baseline of this study. If this cannot be done due to lack of data, the authors should be up front about this limitation, and in that case rely more on the RDD nature of the study and demonstrate balance across a range of characteristics that could be related to enrolment.

Response: We agree with the reviewer comment that what stated in the paper is not correct. We also agree that for the parallel assumption would need a formal test using pre-baseline information. However, such data is not available. We changed the statement in the paper and acknowledge this issue in the paper (P12, lines 13-15). We are grateful for highlighting this issue. Additionally, baseline balance by household characteristics can be found in Table 1.

• Was any information of the waiving of the NHIS fee provided to the beneficiaries? Could some more detail be provided on this?

Response: we have added information under "study setting", including the fact that participants are informed of the waiver at the time of enrolment and general information campaigns have been implemented in communities (P8, line 25 – P9, lines 1-2).

Reviewer: 3
Reviewer Name: Samir Garg
Institution and Country: State Health Resource Centre, Chhattisgarh. India
Please state any competing interests or state 'None declared': 'None declared'

Please leave your comments for the authors below
According to Alhassan et al (Reference no. 7), around 60% of the enrolled under NHIS have the exemption from paying premium. The current manuscript does not clarify whether NHIS provides premium-waiver for indigent or other categories, irrespective of LEAP programme. If NHIS provides exemptions for people outside LEAP, then the categories involved and criteria used should be described in comparison to LEAP. What proportion of country's population belongs to such categories and among them what proportion are covered under NHIS with or without LEAP? This information is necessary to understand the LEAP1000 intervention.

Response: We have added a description of the exempted categories and the acts which declared these (P6, lines 21-24) and the estimated percentage of enrollees currently exempted (P6, line 24).

The literature review in the introduction is thin. It does not cover adequate literature on Ghana's health system and NHIS. International literature on role of Publicly Funded Health Insurance schemes in poorer countries has also been ignored.
No comparison of NHIS premium and amount of cash transfer has been provided.

Response: We have added several studies from Ghana, Africa and a multi-country (from two regions) study to the introduction (P 5, lines 12-20; P5, line 24-25 – P6, lines 1-2; P6, lines 7-8; P7, lines 11-14; P7, lines 17-21; P8, lines 1-4) and have tied study findings to previous studies in the discussion (P15, line 24; P16, lines 4 and 10). We have also added ranges for both LEAP payments (P8, line 7) and NHIS premiums (P7, lines 5-7).

The statistical analysis has not addressed the potential issue of endogeneity.

Response: The quasi-experimental using an RDD addresses the potential endogeneity issue between treatment and outcomes of interest. Thus there is no need to address further, as there would be in an observational-design study, where program placement or take-up might be correlated with outcomes of interest.

The quantitative analysis shows around 15 percent-point increase in NHIS enrolment for treatment group, reaching around 45% at endline. Considering that LEAP provided premium-waiver as well as cash, this seems to be a modest improvement in enrolment for LEAP beneficiaries. The important finding is that - most of the non-enrolled among LEAP families still expressed that premium-cost was the main barrier. This indicates a big problem in the way the LEAP intervention was implemented. Rest of the analysis does not explain this adequately. The discussion attributes the gap in enrollment to awareness and annual renewal requirement. The awareness aspect could have been included in the quantitative questions too.

Response. We agree with the reviewer that this question warrants further investigation in future research, and the finding that the waiver alone is not enough to increase enrolment to 100% or even a majority of participants is an important contribution of this paper. However, more in depth questions were not included in the questionnaires and therefore we cannot perform any further quantitative analyses with existing data. Nevertheless, we have explored this question with qualitative data.

One major weakness in qualitative part of the study is that it did not cover stakeholders other than families. The confusion regarding premium-waiver among LEAP families is a major issue. It can be better explained if perspectives of other stakeholders, especially the implementers at various levels were also covered.

Response: Thank you for this comment. We identified the issue of confusion regarding premium waiver in our interviews with LEAP beneficiaries, which is what we present as a key result in the current study. The study we present did not include key informant interviews with stakeholders. We agree that stakeholders could provide additional perspective on this confusion and the context of NHIS enrollment/renewal, but that is beyond the scope of the current study. Future research could include such key informant interviews, and we have added that future research is to further contextualize understanding of the premium waiver confusion.

Distance between the families and facilities where care is available under NHIS, i.e. geographical availability of services, could have been a factor. The analysis presented does not include this aspect.

Response: We agree that distance to facilities can be a factor in accessing healthcare and we plan to investigate this moderating factor in future papers which examine health seeking behaviors.

Annual renewals were found to be a barrier and recommendation is to do it away for LEAP families. There should be some information on why such a requirement exists in the scheme. What was the perspective of implementers from NHIS? If it should be removed, why limit the change to LEAP families?

Response: We have added language on why the annual renewal requirement exists, namely because the programme administrators believe that individuals' circumstances can change, requiring that they be placed into a difference category (P7, lines 15-21). Because the current study only examines LEAP eligible and comparable households, it is beyond the scope of our analysis to recommend fee waivers for the broader population.

Similarly, why restrict premium-waivers to LEAP families? Why not make it free for all families in Ghana? Premiums constitute just 4% of NHIS income anyway (Alhassan et al – Reference 7).

Response: In fact, waivers are not limited to LEAP families. We have added a description of the exempted categories and the acts which declared these at the end of page P6, lines 18-23. Recommendations on removing fees for all families in Ghana is beyond the scope of the current analysis and financial sustainability of the NHIS is still a challenge that government is trying to address.

On Page 6, first three lines say that there are a lot of gaps in services. These are systemic gaps that increased enrollment cannot solve. Later analysis tends to ignore this aspect.

Response: We agree that enrollment is a necessary but not sufficient condition for access to quality healthcare and have added text in the introduction (P6, lines 5-7) and discussion (P16, lines 24-25) to reflect this.

Discussion repeats the introduction and does not compare the findings adequately with available literature on programmes promoting enrolment in health insurance schemes[TMP1]. There is also potential to invoke the 'targeting' vs 'universal' debate, which can be relevant to studies of such enrolment in welfare programmes. Isn't NHIS supposed to be a universal programme?
The write-up has equated enrolment under NHIS with access to healthcare. This is an error. Enrolment in an insurance scheme may or may not improve access.
Enrolment of a person with a particular view has been portrayed as evidence of impact (Page 12, line 8-9). It need not be.

Response: We agree with the review that enrolment does not equal access, and have added language to this effect in the introduction (P6, lines 5-7) and discussion (P16, lines 24-25). In this interpretation we include the language "potential impact," which we believe is supported by the quantitative evidence of programme impacts, and thereby justifiable. While it is impossible to know in any one case whether the waiver and programme integration had the suggested impact, the qualitative interviews (while non-generalizable) are meant to further elucidate some of the impacts found in the quantitative findings.

Poor availability of drugs in NHIS-accredited facilities has been described as a challenge beyond NHIS (Page 13, Line 2-3). It is difficult to accept this comment portraying this challenge as "beyond NHIS". Availability of medicines is a very basic component which a scheme like NHIS should aim to address.

Response: We agree that affordability of drugs is within the mandate of NHIS and have removed the language "reflecting health systems challenges beyond NHIS" in this sentence.

VERSION 2 – REVIEW

REVIEWER	Samir Garg State Health Resource Centre, Chhattisgarh, India
REVIEW RETURNED	01-Sep-2019

GENERAL COMMENTS	The authors have addressed some of the comments but a few issues still remain. The issues that need to be considered include the following: 1. It is not valid to use the adjective 'large' for impact in the conclusion paragraph of the Abstract. It seems to suggest that impact was bigger than the gaps whereas the data-analysis does not show that. 2. The authors have stated in their response to a comment from this reviewer– "We agree with the reviewer that this question warrants further investigation in future research, and the finding that the waiver alone is not enough to increase enrolment to 100% or even a

	majority of participants is an important contribution of this paper. However, more in depth questions were not included in the questionnaires and therefore we cannot perform any further quantitative analyses with existing data. Nevertheless, we have explored this question with qualitative data." The above issue needs to be highlighted in the write-up too. 3. The authors have agreed that distance and geographical availability of services under NHIS is an important aspect not covered by the study. This needs to be acknowledged in the Limitations section. 4. The authors have agreed that the qualitative study did not include important stakeholders like the implementers. This needs to be acknowledged in the Limitations section. 5. The study has not looked at stakeholder perspectives like those of NHIA employees. But, it recommends better orientation of NHIA employees in order to improve the outcomes. No direct assessment has been made of what gaps exist in their orientation. In such a situation, the recommendation can at best be a tentative one. Similarly, the study has not looked at data systems but recommends changes in them for improving the programme. 6. Poor communication with LEAP eligible families or other stakeholders has been presented as a key finding and included in Strengths of the study section. No quantitative or qualitative data has been reported in the study that demonstrates poor communication was the cause. The authors have derived this indirectly from qualitative data (e.g. that LEAP eligible families also said that fee was a barrier). This finding and recommendation should have been presented in more tentative terms, rather than claiming that the study demonstrates poor communication was the cause of gaps. 7. The authors have chosen to persist with the usage - 'health impact' (Page 16 Line 1-2). Although it is preceded by 'potential pathway', the usage is not valid because the study has covered only the dimension of 'insurance enrolment'. 8. The concluding sentence (p17, line 4), again conflates access with enrolment. 9. The article mentions that "access to health insurance is a necessary but not sufficient condition for ensuring access to healthcare". No citation has been provided to substantiate that health insurance is a necessary condition for ensuring access to healthcare. It is important here to note that the context in which the term 'health insurance' here is of schemes like NHIS. There can be other ways apart from insurance in which health systems ensure access.

VERSION 2 – AUTHOR RESPONSE

Previous Reviewer 2 comments:

Reviewer Name: Kalyani Raghunathan
Institution and Country: International Food Policy Research Institute, India
Please state any competing interests or state 'None declared': None declared

• Since the timeline between baseline and endline was approximately two years and since LEAP 1000 eligibility was based on pregnancy status, how is the longitudinal nature of the data intended to help answer the research questions? Would it not have been more appropriate to sample two cross-

sections of pregnant women/women with children<12 months?

First Response: Since assignment of households was only done once at baseline (no re-targeting), there were no additional beneficiaries added after baseline. Therefore, there was no reason to collect cross-sectional data at endline.

New response: We have added this justification on P10 (lines2-3).

• The questions about NHIS enrolment are not comparable across baseline and endline. At baseline, respondents are asked if they are enrolled in any insurance scheme, with NHIS as an option. At endline, they are specifically asked about NHIS. This poses problems in interpretation. The framing used at baseline would likely bias downward reports of NHIS enrolment, especially if respondents were enrolled but didn't know/remember the name of the scheme. The framing used at endline, being a direct question, could bias upward reports of NHIS enrolment. Both of these biases working together would tend to overestimate the impact of the fee waiver on enrolment, wrongfully attributing this improvement in enrolment to the intervention (rather than to reporting biases). The authors do not discuss this at all.

First Response: There are two reasons for which we believe in practice does not bias the estimates: First, given the design, treatment and comparison groups are very similar, therefore we expect the bias in the T and C group to be very similar at each point in time. Therefore, in a DID approach these biases cancel out. Second, we believe this bias to be small since in practice NHIS is the only insurance available in these communities. At baseline, less than 0.2 per cent reported having a different insurance.

New response: We have added this explanation on P17 (lines 5-12).

• On page 7, the authors say that the baseline survey collected information on 2497 women who were pregnant at the time of targeting or had a child under 15 months of age. They later say (page 9) that they stratify the results by age of the child (5-15 – is this months? Years?) and by age of the mother. Given the sampling criteria – pregnancy and age of child – the following stratification for analysis seems strange and needs justification.

First Response: we have added "years" to clarify that the age is in years, not months (P11, line 16). Indeed, the targeting and sampling criteria were based on pregnant women or women with a child under the age of 15 months. However, data were collected on NHIS enrolment of all household members, and therefore we conduct our analysis at both the household and individual level, where the latter includes all household members, not just those targeted by the program. This is justified because the NHIS fee waiver applies to all LEAP household members, not just the targeted individuals.

New response: We have added these explanations on P11 (lines 21-24) and 12 (lines 1-2).

Reviewer(s)' Comments to Author:

Reviewer: 3
Reviewer Name: Samir Garg
Institution and Country: State Health Resource Centre, Chhattisgarh, India
Please state any competing interests or state 'None declared': None declared

Please leave your comments for the authors below
The authors have addressed some of the comments but a few issues still remain. The issues that

need to be considered include the following:

1. It is not valid to use the adjective 'large' for impact in the conclusion paragraph of the Abstract. It seems to suggest that impact was bigger than the gaps whereas the data-analysis does not show that.
Response: We have changed "large" to "significant" (abstract, line 12 and discussion, P 16, line 14)

2. The authors have stated in their response to a comment from this reviewer– "We agree with the reviewer that this question warrants further investigation in future research, and the finding that the waiver alone is not enough to increase enrolment to 100% or even a majority of participants is an important contribution of this paper. However, more in depth questions were not included in the questionnaires and therefore we cannot perform any further quantitative analyses with existing data. Nevertheless, we have explored this question with qualitative data."
The above issue needs to be highlighted in the write-up too.
Response: We have added the following statement in the discussion: "Our data do not allow further investigation as to why respondents - who should be eligible for fee waivers - reported costs as a major barrier to enrolment, and future research should examine this further" (P17, lines 18-20). However, we are not able to address the reviewer's comments about suggestions as to what types of quant/qual questions could have been added to the questionnaires, as data have already been collected and these questions were not included, especially since it is impossible to predict the findings before endline and therefore include more in depth questions to unpack those findings.

3. The authors have agreed that distance and geographical availability of services under NHIS is an important aspect not covered by the study. This needs to be acknowledged in the Limitations section.

Response: We have added the following statement on Page 17: "A third limitation is that we did not examine how distance to and quality of health services might moderate programme impacts on enrolment" (P17, lines 12-16).

4. The authors have agreed that the qualitative study did not include important stakeholders like the implementers. This needs to be acknowledged in the Limitations section.

Response: We have added the following statement on Page 17 (lines 13-16): "Finally, qualitative interviews did not cover implementers, which could have provided important insights on communication related to fee waivers and further understanding reasons for perceived costs barriers, and implementers' own understanding of the fee waiver process."

5. The study has not looked at stakeholder perspectives like those of NHIA employees. But, it recommends better orientation of NHIA employees in order to improve the outcomes. No direct assessment has been made of what gaps exist in their orientation. In such a situation, the recommendation can at best be a tentative one. Similarly, the study has not looked at data systems but recommends changes in them for improving the programme.

Response: We have revised the language related to the findings (P16, lines 15-16) as follows, "possible reasons for this finding may include insufficient communication or misunderstanding…" and "This finding may suggest the need to improve communication with program participants and/or implementers..." and have added language on limitations/future research recommendations (P17, lines 13-16) as follows: "Finally, qualitative interviews did not cover implementers, which could have provided important insights on communication related to fee waivers, reasons for perceived costs barriers, and implementers' own understanding of the fee waiver process." Finally, we revised the recommendation on data systems as follows: "Also, while beyond the scope of the current findings, linking of data systems may be helpful…" (P16, lines 24-25).

6. Poor communication with LEAP eligible families or other stakeholders has been presented as a key finding and included in Strengths of the study section. No quantitative or qualitative data has been reported in the study that demonstrates poor communication was the cause. The authors have derived this indirectly from qualitative data (e.g. that LEAP eligible families also said that fee was a barrier). This finding and recommendation should have been presented in more tentative terms, rather than claiming that the study demonstrates poor communication was the cause of gaps.

Response: We have revised the language to say that our findings “possible reasons for this finding may include insufficient communication or misunderstanding” (P16, lines 15-16).

7. The authors have chosen to persist with the usage - ‘health impact’ (Page 16 Line 1-2). Although it is preceded by ‘potential pathway’, the usage is not valid because the study has covered only the dimension of ‘insurance enrolment’.

Response: We have revised the language as follows (P16, lines 11-13) “Our findings highlight a potential pathway through which unconditional cash transfers may improve health, namely by increasing insurance coverage, which could ultimately lead to increased access to preventive and curative healthcare services.” While the reviewer is correct in pointing out that health insurance is not health/well-being, this paper provides an incremental contribution to the literature on cash transfers and health by studying an intermediary pathway, namely health insurance, which is aimed to facilitate access to health services. Thus, we believe this is still an important point to make.

8. The concluding sentence (p17, line 4), again conflates access with enrolment.

Response: We have revised as follows (P17, line 23): “Moreover, access to health insurance can help reduce barriers, but alone does not ensure access to healthcare.”

9. The article mentions that “access to health insurance is a necessary but not sufficient condition for ensuring access to healthcare”. No citation has been provided to substantiate that health insurance is a necessary condition for ensuring access to healthcare. It is important here to note that the context in which the term ‘health insurance’ here is of schemes like NHIS. There can be other ways apart from insurance in which health systems ensure access.

Response: We have revised as follows (P17, line 23): "Moreover, access to health insurance can help reduce barriers, but alone does not ensure access to healthcare."