## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (**http://bmjopen.bmj.com/site/about/resources/checklist.pdf**) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

## ARTICLE DETAILS

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| **TITLE (PROVISIONAL)** | Incidence and predictors of mortality among children admitted to the pediatric intensive care unit at the University of Gondar comprehensive specialized hospital, northwest Ethiopia: A prospective observational cohort study |
| **AUTHORS** | Teshager, Nahom; Amare, Ashenafi; Tamirat, koku |

## VERSION 1 – REVIEW

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| **REVIEWER** | Michael Canarie<br>Yale University School of Medicine |
| **REVIEW RETURNED** | 05-Feb-2020 |

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| **GENERAL COMMENTS** | I congratulate Dr. Teshegar and colleagues for undertaking and completing this study on the incidence and predictors of mortality in the PICU although University of Gondar in Ethiopia. As the authors note, there is limited data on this topic and research is much needed. Also, identifying modifiable factors associated with mortality takes on greater importance in resource limited settings. The authors have done as they set out to do, by reporting the incidence and predictors of mortality. However, the organization of the manuscript and its presentation obscure their good work. I would recommend the manuscript be strictly edited, proofread and reduced in length to highlight its strengths. There are a great many typos and syntactical errors, all the sections could be reduced in length and the number of table should be reduced to 2 or 3. In short, I feel the work needs to be significantly streamlined.<br><br>More specifically, by section:<br>ABSTRACT: Results: Normally demographic data is presented first. I am not sure it is important to mention the WHO classifications, moreover, it is confusion when you discuss both WHO classifications of disease and presenting diagnosis (which happens throughout he text). Also, why is not severe malnutrition mentioned as a predictor when it presented as such in the text?<br>Conclusion: The last sentence is vague and does not necessarily follow from what precedes it<br><br>Introduction:<br>This section seems too lengthy to me. In general, this introduction does not concisely introduce the problem (caring for the critically ill in RLS), the broad pathology, put it in context and discuss why the study will shed light on this. The first two paragraphs contribute very little, the third paragraph is too long, and the final paragraph.<br><br>Methods: In general, details on the setting could be reduced; significant editing is needed (e.g. p 7 lines 108-113). |

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| | There is no definition of “critical illness” or MODS. The use of PIMS-2 should not be justified in the methods section<br><br>Results: The tables are far too detailed (one slimmed down table on patient demographics/characteristics), and only results you think are significant or relevant to your discussion need to appear in the text.<br><br>Discussion:<br>You have completed an interesting study but the discussion does not elaborate or embellish your finding or discuss why they are relevant in an organized or effective manner. Normally the first paragraph of the discussion presents the pertinent findings and alludes to why they are significant. Subsequent paragraph discuss these results one at a time, looks at unexpected findings or lack thereof, puts it in context and concluded on the significance. The discussion here lacks focus.<br>It might also be interesting to discuss/divide these predictors based on patient characteristics v treatment issues. The association of mortality with mechanical ventilation is not a new one, an might warrant further discussion. For example, the presence of only one ventilator makes is almost certain that only the sickest patient receives mechanical ventilation. What is this determination based on? Is mechanical ventilation discontinued when care is considered futile? Do patients receive this treatment too late. Or does it expose patients to complications (as it has been associated with mortality in a study from Latin America (Earle M, CCM 1997). Finally you should be concluding on ways these predictors can be modified--which is why the study is important.<br><br>I cannot find the references at the end of the document.<br><br>If you have not, it might be good to include works from regional PICU or mixed units:<br>Kwizera et al. BMC Research Notes 2012, 5:47<br>Nyirasafari R Paediatrics and International Child Health 2017 VOL. 37 NO. 2<br>Vekaria-Hirani V International Journal of Pediatrics 2019<br>Or one discussing the limitations of PIMS 2 in RLS: Shukla VV International Journal of Peds 2014<br><br>Please revise this work as you have put in an excellent effort already and you have much to say. |

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| **REVIEWER** | Milind Tullu<br>Department of Pediatrics (& Pediatric Intensive Care Unit), Seth G.S. Medical College & KEM Hospital, Parel, Mumbai 400012, Maharashtra, INDIA. |
| **REVIEW RETURNED** | 11-Feb-2020 |

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| **GENERAL COMMENTS** | For Authors:<br>General: The paper needs to be completely rewritten with special emphasis on the sentence construction and grammar. Many of the sentences have been constructed like ‘spoken English’ rather than ‘written English’ and need to be revised. Also, the punctuation errors and errors related to letters (capitals, upper case, lower case, etc) need to be corrected. Authors should use past tense in the abstract and the main text (methods section and results section). Full form of |

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| | PIM 2 is - Pediatric Index of Mortality 2 (this has been wrongly written at all places in the text). All the short-forms/ abbreviations of various words/ phrases (in the main text) should be completely spelt out at first occurrence and then the short-forms/ abbreviations may be used. It is better to avoid unnecessary / non-standard short-forms and abbreviations and better to use full-forms/ complete word phrases of these instead.<br>Abstract: Avoid any short-forms (like SBP) in the abstract. In 'results' subsection of the abstract delete the words "of government employed" (lines 32-33), as this was associated with lower and not higher mortality. Delete the last line from the 'conclusions' subsection of the abstract (lines 40-41) as this is not the conclusion of this particular study but a general sentence. Strengths and limitations given after the abstract - delete the point "Some factors like……assessed" (lines 47-48) as it is not relevant.<br>Introduction: This is too long and has many general sentences related to PICU which are not relevant for this study. This section needs to be more focused and shortened to half of its present size.<br>Methods: In the subsection 'Population and sample', the figure of 395 (line 127) is mentioned while in the results section it is mentioned as 376. Please recheck and correct it. In 'data collection' subsection (and elsewhere in the text) it is better to use word "case record form" rather than the word "questionnaire". In variable of the study and operational definitions subsection, what is meant by the word "censored" (line 155)? Is it the correct word/ term to use? In the subsection 'patient and public involvement' it may be written that there was not direct patient contact and only patient records were accessed (line 179).<br>Results: There is no need to duplicate the information already given in tables (again) in the main text of the results section. Only one line of significant finding/ interpretation may be mentioned (in such cases where tables give most of the data) in the text of the results section. The data not presented in Tables needs to be given in details in the text of the results section.<br>Tables and Figures: The titles of all tables and figures should be brief. There is no need to write the words "who were admitted to the pediatric intensive care……Ethopia" in the titles of all the tables and figures. List the full-forms of all short-forms/ abbreviations used below each table as a footnote. Please recheck all the figures, percentages, p values, etc. mentioned in all the tables for accuracy.<br>Discussion: This needs to be brief and focused on the new findings noted in the present study and not a general discussion of the care to be given in a PICU. This section also needs to be re-written and reduced to half of its present size.<br>References: I could not locate the references section in the pdf file provided. |

**VERSION 1 – AUTHOR RESPONSE**

Reviewer 1

Reviewer comment: The authors have done as they set out to do, by reporting the incidence and predictors of mortality. However, the organization of the manuscript and its presentation obscure their good work. I would recommend the manuscript be strictly edited, proofread and reduced in length to highlight its strengths. There are a great many typos and syntactical errors, all the sections could be reduced in length and the number of table should be reduced to 2 or 3. In short, I feel the work needs

to be significantly streamlined.
Author response: Thank you reviewer for the comments which is found to helpful to improve manuscript quality. Based your comments the number of tables are reduced to three and important variables narrated in the form of text and table in the main document of manuscript. All the authors proof read the manuscript.
Reviewer comment: ABSTRACT: Results: Normally demographic data is presented first. I am not sure it is important to mention the WHO classifications, moreover, it is confusion when you discuss both WHO classifications of disease and presenting diagnosis (which happens throughout he text). Also, why is not severe malnutrition mentioned as a predictor when it presented as such in the text?
Author response: Thank you reviewer for the comments which is found to helpful to improve manuscript quality. Based on your comment abstract result is corrected as “The median age at admission was 48 with interquartile range (IQR: 12 to 122) months, 28.1% were infants followed by adolescents (21.4%) and 59.7%) were males. The median observation time was 3 with (IQR: 1 to 6) days. One hundred two (32.6%) children died during the follow-up time and incidence of mortality was 6.9 deaths per 100 person-day observation. Weekend admission [Adjusted Hazard Ratio (AHR) =1.63, 95%CI: 1.02, 2.62], critical illness (AHR=1.79, 95%CI: 1.13, 2.85) need mechanical ventilation AHR=2.36, 95%CI: 1.39, 4.01) and PIM2 score (AHR=1.53, 95%CI: 1.36, 1.72) were predictors of mortality.”
Reviewer comment: Conclusion: The last sentence is vague and does not necessarily follow from what precedes it
Author response: Thank you reviewer for your comments and questions which is helpful for manuscript quality improvement. It is corrected as follow “Rate of mortality in the ICU was high, admission over weekends, caregivers' occupation, mechanical ventilation, critical illness diagnosis, and higher PIM 2 scores were found to be significant and independent predictors of mortality at the PICU.” is corrected in the main document.
Reviewer 2
Reviewer comment: Introduction:
This section seems too lengthy to me. In general, this introduction does not concisely introduce the problem (caring for the critically ill in RLS), the broad pathology, put it in context and discuss why the study will shed light on this. The first two paragraphs contribute very little, the third paragraph is too long, and the final paragraph.
Author response: Thank you reviewer for your comments. The introduction scion rewritten and rephrased in the main document to make chronologically ordered.
Reviewer comment: Methods: In general, details on the setting could be reduced; significant editing is needed (e.g. p 7 lines 108-113).
Author response: Thank you reviewer for your comments. Descriptions of the study setting is edited, rephrased and rewritten in the main document method section.
Reviewer comment: There is no definition of “critical illness” or MODS. The use of PIMS-2 should not be justified in the methods section
Author response: Thank you reviewer for your comments. Operational definition prepared for critical illness and MODS in the variable section of the manuscript. Mentioned in the variable of the study and operational definition section of the manuscript page 6, line 118-120.
Reviewer comment: Results: The tables are far too detailed (one slimmed down table on patient demographics/characteristics), and only results you think are significant or relevant to your discussion need to appear in the text.
Author response: Thank you reviewer for your comments. The content of the table corrected in the main manuscript included on the table 2 as clinical condition and we tried to mention and include the most relevant informations on it.
Reviewer comment: You have completed an interesting study but the discussion does not elaborate or embellish your finding or discuss why they are relevant in an organized or effective manner. Normally the first paragraph of the discussion presents the pertinent findings and alludes to why they are significant. Subsequent paragraph discuss these results one at a time, looks at unexpected

findings or lack thereof, puts it in context and concluded on the significance. The discussion here lacks focus.
Author response: Thank you reviewer for your comments. The discussion rewritten and tried to focus on the objectives and main findings of the study.
Reviewer comment: It might also be interesting to discuss/divide these predictors based on patient characteristics v treatment issues. The association of mortality with mechanical ventilation is not a new one, an might warrant further discussion. For example, the presence of only one ventilator makes is almost certain that only the sickest patient receives mechanical ventilation. What is this determination based on? Is mechanical ventilation discontinued when care is considered futile? Do patients receive this treatment too late. Or does it expose patients to complications (as it has been associated with mortality in a study from Latin America (Earle M, CCM 1997). Finally you should be concluding on ways these predictors can be modified--which is why the study is important.
Author response: Thank you reviewer for your comments. Patients who needed mechanical ventilation had increased mortality compared to those who did not need it. This finding is in line with the findings of other studies [25, 26]. The explanation for this might be because patients who need mechanical ventilation tend to have advanced disease stages. This can also be attributed to a limited number of mechanical ventilators we had. There might also be unrecognized ventilator-associated complications.
Reviewer comment: I cannot find the references at the end of the document.
Author response: Thank you reviewer for your comments. The references updated and incorporated in the main document

**VERSION 2 – REVIEW**

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| **REVIEWER** | Michael Canarie<br>Yale University of Medicine<br>New Haven, CT, USA |
| **REVIEW RETURNED** | 20-Apr-2020 |

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| **GENERAL COMMENTS** | Thank you for the opportunity to re-reviewed the manuscript "Incidence and predictors of mortality among children admitted to the pediatric intensive care unit at the University of Gondar comprehensive specialized hospital, northwest Ethiopia: A prospective observational cohort study," by N Teshagar et al. I am impressed with the effort the authors have displayed and continue to show in pursuing this important topic. While there remains interesting and relevant information in the manuscript, it continues to be weakened in my view by poor organization and lack of clarity of purpose and expression. There are also many typos that need to be addressed. I have made some more specific comments below which I sincerely hope might be helpful.<br>Abstract:<br>Should not University of Gondar Comprehensive Specialized Hospital be all in caps<br>Design: a single center study, correct?<br>Introduction:<br>It seems think that this section would benefit from better organization. For example, it seems to me that the first phrase of the first sentence might be a better way to begin the manuscript: "[Pediatric] intensive care units (PICUs) have the potential to save the lives of patients with life threatening illness." One could then proceed to discuss the patients who with limited organ system dysfunction, etc. who might benefit from PICU admission and the importance of patient selection in settings of limited resources but these. |

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| | The principle issue remains, what is the objective of the study? You state at the end of the introduction “this study aimed to determine the incidence and predictors of mortality among children admitted to the PICU.”<br>But prior to that you had discussed the use of a modified severity of illness score? Is this something you are hoping to apply and validate? When you say this study will help clinicians and case managers better manage their patients, do you mean using the severity tools to identify those at risk of mortality? Or the other risk factors you identify will help you better focus care/resources? I think more focus about your purpose would be helpful.<br>Methods:<br>This section is written with much greater clarity and lucidity than the remainder of the document.<br><br>Results<br>In general, this section seems to me too long and redundant. Data does not need to be in table and in text unless you chose to do so for emphasis. Table I remains too long and could be condensed (example: caregivers are overwhelmingly parents, why not just put “others”) . It would seem that comorbid condition and vaccination status might be well suited to this table.<br>The first sentence on the Clinical Condition, discussed when the patients were and admitted and where they came from—this should be 2 sentences.<br>Finally, can you calculate a predicted mortality using PIM2 if you don’t have all the data (PaO2 and pH)? I do not know that this is appropriate.<br>Discussion:<br>I think it is most effective when the first paragraph of the discussion makes a general statement about what was significant about the study, what were the pertinent findings and their possible relevance. This could then lead into a more elaborate discussion and a conclusion. The introductory paragraph here seems to contain far too much detail and does not summarize what was discovered. (A couple specific problems: The percent of those who left AMA should be in the results, the implications mentioned as a study limitation later in the discussion. And I don not believe Saudi Arabia is a resource limited/low income country.)<br>In my view a more compelling way to organize the discussion might be to stress the possible utility of using this abridged PIM2 score and how it could help identify patients at risk. I also think it is relevant to not just identify weekend admission as a risk factor for mortality, but to at least propose ways to combat this trend. When discussing government employ as a favorable predictor v peasants, it is probably noteworthy to mention not just identification of illness but proximity and transport to health care facilities and resources to pay for them? Finally, the “need for mechanical ventilation” is repeatedly mentioned in the results and the discussion. Do you mean those actually placed on a mechanical ventilator, or those who met criteria for mechanical ventilation. You could be clearer about this because both could be independent risk factors--since there is only 1 ventilator available. It is also true that placing and maintaining a patient on a ventilator can be perilous in and of itself a risk factor for mortality (Earle M, CCM 1997. 25:9).<br>I hope this helps. Good luck. |

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| **REVIEWER** | Milind Tullu<br>Department of Pediatrics (& Pediatric Intensive Care Unit), Seth G.S. Medical College & KEM Hospital, Parel, Mumbai 400012, |

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| | Maharashtra, INDIA. |
| **REVIEW RETURNED** | 28-Mar-2020 |

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| **GENERAL COMMENTS** | The authors have not submitted point by point reply to the comments given by me. However, I find that they have made most of the changes that I had requested for (except the ones given below).<br><br>1. Authors should use past tense in the abstract and the main text (methods section and results section).<br>2. Full form of PIM 2 is - Pediatric Index of Mortality 2 (this has still been wrongly written at all places in the text).<br>3. All the short-forms/ abbreviations of various words/ phrases (in the main text) should be completely spelt out at first occurrence and then the short-forms/ abbreviations may be used.<br>4. Methods: In the subsection 'patient and public involvement' it may be written that there was not direct patient contact and only patient records were accessed.<br>5. Tables and Figures: The titles of all tables and figures should be brief. There is no need to write the words "who were admitted to the pediatric intensive care……Ethopia" in the titles of all the tables and figures.<br>6. Tables : List the full-forms of all short-forms/ abbreviations used below each table as a footnote.<br>7. References: Most of the references are incomplete. References should be as per the Journal requirements. |

## VERSION 2 – AUTHOR RESPONSE

Response to Reviewer 1

1. Abstract: Should not University of Gondar Comprehensive Specialized Hospital be all in caps
We appreciate your detailed view of our document. We have corrected it both in the abstract and the other parts of the document.
2. Design: a single-center study, correct?
Yes. It is a single-center study. We have corrected it as to your suggestion.
3. Introduction: It seems I think that this section would benefit from better organization. For example, it seems to me that the first phrase of the first sentence might be a better way to begin the manuscript: "[Pediatric] intensive care units (PICUs) have the potential to save the lives of patients with a life-threatening illness." One could then proceed to discuss the patients with limited organ system dysfunction, etc. who might benefit from PICU admission and the importance of patient selection in settings of limited resources but these.
We appreciate your suggestions. We have modified the introduction of this document. We started with the importance of PICU in the care of critically ill children, and we stated who are the candidates for PICU admission (paragraph 1, line 47-50) and then proceeded with the importance of prioritizing patients for admission in low resource countries (paragraph 2, line 51-54). We then proceeded to describe measures of outcome in the PICU with a focus on mortality. Finally, we concluded the introduction by mentioning the aim of this study and its implication to the set up (last paragraph line 67-71 in the revised manuscript).
4. The principle issue remains, what is the objective of the study? You state at the end of the introduction, "this study aimed to determine the incidence and predictors of mortality among children admitted to the PICU." But prior to that, you had discussed the use of a modified severity of illness score? Is this something you are hoping to apply and validate?
The study aimed to determine the incidence and predictors of mortality among children admitted to a

pediatric intensive care unit at the University of Gondar comprehensive specialized hospital. No, validating PIM 2 tool is not our main objective in this study. We took PIM 2 as one predictor, among others. Higher PIM 2 score is found to be a predictor of mortality in other studies too.
5. When you say this study will help clinicians and case managers better manage their patients, do you mean using the severity tools to identify those at risk of mortality? Or the other risk factors you identify will help you better focus on care/resources? I think more focus on your purpose would be helpful.
The other risk factors we identify (including higher PIM 2 score at admission) will help us better focus on the most fruitful care and tunnel resources to the most efficient method of intervention for those at higher mortality risk thus contributing to recovery as well as making the assessment of the performance of the services delivered. We have mentioned this in the last paragraph of the introduction part in the revised manuscript.
6. Methods: This section is written with much greater clarity and lucidity than the remainder of the document.
We appreciate the positive assessment of our work.
7. Results: In general, this section seems to me too long and redundant. Data does not need to be in the table and in-text unless you chose to do so for emphasis. Table I remains too long and could be condensed (example: caregivers are overwhelmingly parents, why not just put "others"). It would seem that comorbid conditions and vaccination status might be well suited to this table.
We have reduced the results section by a significant amount and modified the tables as to your suggestions in the revised manuscript.
8. The first sentence on the Clinical Condition, discussed when the patients were and admitted and where they came from. This should be two sentences.
We have made it two separate sentences in the revised manuscript.
9. Finally, can you calculate predicted mortality using PIM2 if you don't have all the data (PaO2 and pH)? I do not know that this is appropriate.
PIM 2 scoring tool on QxMD instructs to enter "0" for unknown parameters. We agree it may create misclassification. Had it been done with all the 11 parameters, we think it would have a better prediction. It is still found to be an independent predictor of mortality though we scored it out of 9 parameters. We want to focus here that the missing parameters are common to all of the study participants (We didn't do ABG for all patients).
10. I think it is most effective when the first paragraph of the discussion makes a general statement about what was significant about the study, what were the pertinent findings and their possible relevance. This could then lead to a more elaborate discussion and a conclusion. The introductory paragraph here seems to contain far too much detail and does not summarize what was discovered. (A couple of specific problems: The percent of those who left AMA should be in the results, the implications mentioned as a study limitation later in the discussion. And I do not believe Saudi Arabia is a resource-limited/low-income country.
We thank you, reviewer, for your constructive suggestions. We have reduced the unnecessary details on the discussion part and reorganized the discussion part accordingly. We have taken out sentences that discuss LAMA in the revised manuscript.
11. In my view, a more compelling way to organize the discussion might be to stress the possible utility of using this abridged PIM2 score and how it could help identify patients at risk.
Amongst many disease severity assessment tools at baseline, PIM 2 does not need extensive laboratory investigation, and it is not affected by subsequent interventions since It is scored within one hour of admission resulting in early identification of the severity of illness and stratification of children for necessary intervention, which in turn helps in counseling caregivers of sick children. A unit increment in the PIM 2 score doubled the hazard of mortality, which shows the score is sensitive in detecting morality, and this scoring system is also validated and applicable in many PICUs across the world [19-23]. The higher observed mortality rate than the predicted one by PIM 2 score in our study indicates the poor quality of intensive care in our setting. (Discussion part, paragraph 6 line 234-241 in the revised manuscript)

12. I also think it is relevant to not just identify weekend admission as a risk factor for mortality, but to at least propose ways to combat this trend.
We have stated about it on the discussion part of the revised manuscript, paragraph 3 lines 217-226, and on the recommendation part.
13. When discussing government employees as a favorable predictor v peasant, it is probably noteworthy to mention not just identification of illness but proximity and transport to health care facilities and resources to pay for them?
This study also highlighted how being a caregiver who is a government employee was associated with lower risk mortality compared to caregivers of peasants. This finding could be explained by differences in health-seeking behavior, access to funds for transportation, and early identification of danger signs between these groups. (discussion part, paragraph 4 line 227-230in the revised manuscript.
14. Finally, the “need for mechanical ventilation” is repeatedly mentioned in the results and the discussion. Do you mean those actually placed on a mechanical ventilator, or those who met criteria for mechanical ventilation? You could be clearer about this because both could be independent risk factors--since there is only one ventilator available. It is also true that placing and maintaining a patient on a ventilator can be perilous in and of itself a risk factor for mortality (Earle M, CCM 1997. 25:9).
We thank you, reviewer, for your insight. By "need for mechanical ventilation," we refer to those “who met the criteria for mechanical ventilation.” Patients who need mechanical ventilation tend to have advanced disease stages. This can also be attributed to a limited number of mechanical ventilators in our PICU. There might also be unrecognized ventilator-associated complications in those who were placed on a mechanical ventilator. We have made it clear in the revised manuscript.
Reviewer: 2
1. The authors should use the past tense in the abstract and the main text (methods section and results section).
Thank you, reviewer, for the constructive comments you gave us. We have made a correction as to your comment in thee revised manuscript.
2. The full form of PIM 2 is - Pediatric Index of Mortality 2 (this has still been wrongly written at all places in the text).
Corrected in the revised manuscript.
3. All the short-forms/ abbreviations of various words/ phrases (in the main text) should be completely spelled out at first occurrence, and then the short-forms/ abbreviations may be used.
Done. In the revised manuscript.
4. Methods: In the subsection 'patient and public involvement', it may be written that there was no direct patient contact, and only patient records were accessed.
We thank you, reviewer, for your suggestion. There was no direct patient contact and only patient records were accessed by investigators (line 143 of the revised manuscript)
5. Tables and Figures: The titles of all tables and figures should be brief. There is no need to write the words “who were admitted to the pediatric intensive care…… Ethiopia” in the titles of all the tables and figures
We have corrected it in the revised manuscript as to your suggestion.
6. Tables: List the full-forms of all short-forms/ abbreviations used below each table as a footnote.
We have put the long forms as a footnote under each table in the revised manuscript.
7. References: Most of the references are incomplete. References should be as per the Journal requirements.
We appreciate your detailed view into our document. We have adjusted the references as to the journal's requirement in the revised manuscript.

**VERSION 3 – REVIEW**

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| **REVIEWER** | Michael Canarie<br>USA |
| **REVIEW RETURNED** | 09-Jul-2020 |

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| **GENERAL COMMENTS** | Thank you for the opportunity to review a revised version of Incidence and predictors of mortality among children admitted to the pediatric intensive care unit at the University of Gondar comprehensive specialized hospital, northwest Ethiopia: A prospective observational cohort study. I believe the manuscript continues to improve over previous versions and provides an important insight into an understudied field. But I still think revisions are necessary before publication. I have made some of these recommendations in prior reviews. In general, I believe the data is here but this manuscript would still benefit from editing, honing and focusing the piece .<br>In general, the abstract is successful at summarizing the contents. However, I believe here and throughout the manuscript it would be more appropriate to refer to the tool used as a modified PIM2 as you are not using all the data requested (i.e. no arterial blood gas results). The introduction is not succinct or effective. In particular, the first three paragraphs (2, 2 and 1 sentence long) should be combined into one more cohesive, concise introductory paragraph presenting the utility and challenges of critical care. Moreover, as you are proposing a modified too to predict mortality, shouldn't this be mentioned as one of the purposes of the study? In the final paragraph, the authors state the study "might" add to the literature in this field; it would be better to be more assertive.<br>I believe the result section continues to be too long. Data represented in tables should sparingly be mentioned in text, and for emphasis-or vice versa. The tables are too dense and should be edited. (Easy things like listing both number of males and females should be removed.) Paragraphs can be combined and slimmed down (p 10). Also, it is appropriate to cite predicted mortality when using a modified score? (p 9).<br>The discussion could start with a clearer sentence and more fortified paragraph (alluding to results and possible implications of these). The second paragraph compares the mortality rate to that in other countries, but these are not really comparable—they are not all low-income countries. I have previously referred to studies from regional countries such as Uganda (Atunmany) and Rwanda (Nyirasafari) which would be more appropriate references. Saudi Arabia and Latin America do not seem fitting. Comparisons.<br>It would seem to me that the discussion the risk factors for mortality, it would seem that emphasis should be placed on those that are modifiable—weekend admission and concerning modified PIMS score. For example, it might follow that attempting better weekend coverage or focusing care on those with dangerous PIM 2 scores could. The conclusion asserting a need for more intensive care physicians or ventilators might not be so realistic, so perhaps one should concentrate on more practical, feasible solutions? |

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| **REVIEWER** | Professor (Dr.) Milind Tullu<br>Seth G.S. Medical College & KEM Hospital, Mumbai, INDIA. |
| **REVIEW RETURNED** | 27-Jun-2020 |

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| **GENERAL COMMENTS** | No further comments. |

## VERSION 3 – AUTHOR RESPONSE

Response to Reviewer 1

1. I believe here and throughout the manuscript it would be more appropriate to refer to the tool used as a modified PIM2 as you are not using all the data requested (i.e. no arterial blood gas results).
Response: We appreciate your detailed view of our document. We have corrected it both in the abstract and the other parts of the document.

2. The introduction is not succinct or effective. In particular, the first three paragraphs (2, 2 and 1 sentence long) should be combined into one more cohesive, concise introductory paragraph presenting the utility and challenges of critical care.
Response: Thank you Reviewer. We have rewritten the introduction
3. As you are proposing a modified PIM2 to predict mortality, shouldn't this be mentioned as one of the purposes of the study?
Response: We are doing another manuscript on" Validation of Pediatric Index of Mortality-2 Scoring System in a Pediatric Intensive Care Unit at the University of Gondar comprehensive specialized hospital, Ethiopia"

4. I believe the result section continues to be too long. Data represented in tables should sparingly be mentioned in text, and for emphasis-or vice versa. The tables are too dense and should be edited. (Easy things like listing both number of males and females should be removed.) Paragraphs can be combined and slimmed down (p 10). Also, it is appropriate to cite predicted mortality when using a modified score? (p 9)
Response: we have reduced it as to your suggestion in the main document.
5. The discussion could start with a clearer sentence and more fortified paragraph (alluding to results and possible implications of these).
Response: We have rewritten it as to your suggestion.
6. I have previously referred to studies from regional countries such as Uganda (Atunmanya) and Rwanda (Nyirasafari) which would be more appropriate references
Response: I took the Rwandan Study and other studies done in low income countries, but I didn't use the Ugandan study by Atunmanya because it is about capacity of intensive care units which is not related to my study. Thank you for your suggestion reviewer.
7. It would seem to me that the discussion the risk factors for mortality, it would seem that emphasis should be placed on those that are modifiable—weekend admission and concerning modified PIMS score. For example, it might follow that attempting better weekend coverage or focusing care on those with dangerous PIM 2 scores could. The conclusion asserting a need for more intensive care physicians or ventilators might not be so realistic, so perhaps one should concentrate on more practical, feasible solutions?
Response: Corrected and conclusion modified in the main document. Thank you, reviewer, for your constructive comments for the improvement of our document.