PEER REVIEW HISTORY

BMJ Paediatrics Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below.

ARTICLE DETAILS

TITLE (PROVISIONAL)	The at risk child: a contemporary analysis of injured children in London and the South East of England. A prospective, multicentre cohort study.
AUTHORS	Elbourne, Ceri Cole, Elaine Marsh, Stephen Rex, Dean Makin, Erica Salter, Rebecca Brohi, Karim Edmonds, Naomi Cleeve, Stewart O'Neill, Breda

VERSION 1 – REVIEW

REVIEWER	Reviewer name: Dr. Stephen Mullen Institution and Country: Not applicable Competing interests: None
REVIEW RETURNED	08-May-2021

GENERAL COMMENTS	Dear author, Thank you for allowing me to read this well written and thought-provoking paper. I have some concerns (listed below) and would suggest alterations before acceptance for publication. 1) Inclusion criteria You mention the limitation of national trauma registry, in particular inclusion criteria. It is important to recognise that the same limitations exist within your study. It would be important to clarify your criteria for activation of a trauma call. I would also suggest a uniform upper age limit for inclusion (currently some centres 16 and other 18s). This would limit some variation. Why did you limit imaging to just CT heads? Is this historic from previous studies? It may have been prudent to include CT chest/abdo/pelvis. Transfer out -clarify if this transferring to ICU/MTC/IR/neurosurg etc Would state that pre-hospital deaths are excluded. 2) Outcomes Why did you choose in hospital mortality and not the more standard mortality at 30 days? I would like your secondary outcomes clarified a little more. Safeguarding concerns can be a vague term and should be clarified. Who raised these concerns? What type of contact was initiated with health visitor or social services? Confirmed abuse vs suspected? A considerable proportion of these are for information sharing and may not necessarily reflect a genuine safeguarding concern. Police and third sector referrals are mention in the results/discussion and should be included in methods.

	3) Age breakdown For the descriptive statistics had you considered breaking into <1s, 1-5, 6-11, >12. The higher proportion of NAI in the <1s would be my rationale for this (as you mention in your discussion) 4) Exclusions Six were excluded due to age. Please clarify this, especially given the variation in upper age limits between centres. 5) Results You mention adolescence but there is no definition (some variation in starting age and would be useful to clarify if 10 or 11). I think this section could be written a little cleaner to the benefit of the reader but there are some really powerful results. Do you have a definition of home and street (sounds pedantic but does home imply in the house or include garden, street in front of house; likewise is street referring to all cases outside the home or a certain distance from home). 6) Discussion I would use children and young people and not just children. Injury severe enough to activate a trauma call -some trauma calls are activated on MOI and not just severity of injury. This is not a complete overview of contemporary trauma as you had inclusion criteria that excluded a considerable proportion of cases. You mention national trauma registry but at no stage name TARN. Would be useful to clarify. Define what a third sector organisation is. You mention 'most are sustained as the result of unintentional falls' -no mention of this in the results and would be good to clarify the origin of this statement. For the sentence starting ' The consequence of falls in this age group' you use reference 17,18 for individual and economic effects for society. Reference 17 includes those ages 18-24, with a hx of TBI and were incarnated in Canada. I found it difficult to clarify when the TBI occurred in their population [mention a lag time of 6 and 12 months]. I am not sure if this is the most appropriate reference for the 0-5 yr group unless you can tie the TBI in reference 17 to the age group you are discussing. You state some cases may have been missed -did you put any steps in place to try to address this? Penetrating trauma is mentioned but no real discussion on knife crime. Would be good to back up your findings with other registries. Can you access police data? The low mortality rate in your cohort is falsely reassuring for penetrating injury and would be useful to have some further info. Table 1 Clearer title: should be able to read and understand outside of the paper I would include female % in the table Location of injury: 'other' needs to be clarified Under MOI you have blunt and penetrating twice, could be confusing to the reader Define polytrauma. Clarify what MTC level care is (is it transfer to a MTC from a TU?)

REVIEWER	Reviewer name: Dr. Catherine Bradshaw Institution and Country: Bristol Royal Hospital for Children, Paediatric Surgery, United Kingdom of Great Britain and Northern Ireland Competing interests: None

REVIEW RETURNED	14-May-2021

GENERAL COMMENTS	This is a well written paper providing a useful and up to date snapshot of paediatric trauma epidemiology in the London trauma network. The rise in interpersonal violence especially within the adolescent population is concerning. Although the pattern of injury that they have identified may also be seen in other urban areas, it is important that the authors recognise and acknowledge that it remains unknown whether or not this is reflective of other areas in the UK. The authors have used safeguarding concerns as their secondary outcome; however the definition of "safeguarding concerns raised" was not clear in the methodology. Did this include children that were discussed in local safeguarding meetings or only children that required an onward referral? Variation in local hospital policies relating to safeguarding in trauma may have an impact on this. Appreciating that the definition of paediatric was a pragmatic one with local variation between hospital definitions, this inconsistency makes the data for the adolescent population more difficult to interpret. Including the 16 and 17 year olds in Figure 1A is somewhat misleading as it appears that there is significantly less trauma in these years, however this is only because not all centres will define these patients as paediatric. It may therefore be clearer to separate out the 16 and 17 year olds. The discussion suggests that mortality is lower than previously reported. As this study has used a significantly broader inclusion criteria this may only be reflective of the inclusion of a large volume of more minor trauma. The authors suggest that the current national trauma registry is biased due to its inclusion criteria, although they have not stated what this is. Why is this felt to be the case? It would be useful to know if any mortality or children with safeguarding concerns were identified by this study that would not have been included in the national trauma registry.

VERSION 1 – AUTHOR RESPONSE

VERSION 2 – REVIEW

REVIEWER	Reviewer name: Dr. Stephen Mullen Institution and Country: Not applicable Competing interests: None
REVIEW RETURNED	14-Jul-2021

GENERAL COMMENTS	Thanks for sending you amended version of your paper. 1) Abstract -the conclusion of the abstract includes information that is not in the results section of the abstract. To describe a change, you need to state what the current literature states and how your data is different. 2) Introduction Well written and clear. Good use of relevant references. 3) Methods Age breakdown -should it be equal or greater than 12? (currently 12 is not included in any group). Reference your definition of adolescents in terms of age (most are 10 or 11). While it is clearer why there is a variation in the upper age range (16 vs 18), I still think the study would benefit from a uniform upper age limit. 4) Results

	Personal preference so feel free not to change but half is not 52% and a tenth is not 11.4%. Would remove terms like 'just' -leave your interpretation of the data to the discussion. Page 11, line 19, sentence starting a fifth -reads a little clunky. The paragraph regarding safeguarding may need clarified a little - you start by saying 1 in 4 have a safeguarding concern -based on SS or HV referral as per methods. Later in the paragraphs, you state 44% had a safeguarding concern but 63% were referred for SS or HV input. 4) Discussion Be consistent with terms -either children or children and young people (suggest the latter given some are aged up to 18). I think you need to offer some explanation why your data is different to TARN. Your study is London specific which has a much higher rate of knife crime than the rest England/UK. As such, the results will never be comparable. The prevention message is still very important. TARN inclusion criteria will play some role in the variation but is not the only variable. Regarding the variation in mortality, I think you need to offer some explanation in the variation. Part will be the definition of severe and moderate trauma which are based on ISS (in the studies referenced) and this is different to your definition. Page 13, line 17, inuried is spelt wrong.

REVIEWER	Reviewer name: Dr. Catherine Bradshaw Institution and Country: Bristol Royal Hospital for Children, Paediatric Surgery, United Kingdom of Great Britain and Northern Ireland Competing interests: None
REVIEW RETURNED	23-Jun-2021

GENERAL COMMENTS	Thank you for your detailed and thorough responses and clarifications. The study is a pragmatic one with valuable results and discussion that adds to the current literature on this topic. Although it is not without its limitations I feel that the authors have addressed and clearly documented these within the paper.

VERSION 2 – AUTHOR RESPONSE

To: The Editor in Chief and Associate Editor, BMJ Paediatrics Open

Re: ***The at risk child: a contemporary analysis of injured children in London and the South East of England. A prospective, multicentre cohort study.***

Dear Prof. Choonara and Dr. Chong,

Thank you for the recent feedback from the referees of our paper.

We are grateful for the opportunity to respond to the comments raised and for allowing us to submit a revised version of our manuscript.

Changes to the manuscript have been made in bold within the manuscript and tables, and individual responses to referees comments are below in italicised font.

Yours sincerely,

Ms. Ceri Elbourne
Corresponding author (on behalf of all authors)

Editor in Chief Comments to Author
A few minor points only
Thank you.

Reviewer: 1
Dr. Catherine Bradshaw, Bristol Royal Hospital for Children
Comments to the Author
Thank you for your detailed and thorough responses and clarifications.
The study is a pragmatic one with valuable results and discussion that adds to the current literature on this topic. Although it is not without its limitations I feel that the authors have addressed and clearly documented these within the paper.
Thank you.

Reviewer: 2
Dr. Stephen Mullen
Comments to the Author
Thanks for sending you amended version of your paper.

1) Abstract -the conclusion of the abstract includes information that is not in the results section of the abstract. To describe a change, you need to state what the current literature states and how your data is different.
Thank you for highlighting this, we are limited by the word count in the abstract however the wording has been amended to reflect your suggestion.

2) Introduction
Well written and clear. Good use of relevant references.
Thank you.

3) Methods
Age breakdown -should it be equal or greater than 12? (currently 12 is not included in any group).
Yes, it should – thank you this has been amended in the text.

Reference your definition of adolescents in terms of age (most are 10 or 11).
We are unable to provide a reference for this, as a study group we felt that this was an appropriate cut off for this purpose of this study and have amended the wording in the text to reflect this and have acknowledged this in the limitations.

While it is clearer why there is a variation in the upper age range (16 vs 18), I still think the study would benefit from a uniform upper age limit.
We have added a sentence to acknowledge this in the limitations.

4) Results

Personal preference so feel free not to change but half is not 52% and a tenth is not 11.4%. Would remove terms like 'just' -leave your interpretation of the data to the discussion.
Thank you, the text has ben amended.

Page 11, line 19, sentence starting a fifth -reads a little clunky.
This has been reworded.

The paragraph regarding safeguarding may need clarified a little -you start by saying 1 in 4 have a safeguarding concern -based on SS or HV referral as per methods. Later in the paragraphs, you state 44% had a safeguarding concern but 63% were referred for SS or HV input.
Thank you for this comment – the 44% and 63% referred to the breakdown in under 1 years – we have amended this sentence to make this clearer.

4) Discussion
Be consistent with terms -either children or children and young people (suggest the latter given some are aged up to 18).
This has been amended.

I think you need to offer some explanation why your data is different to TARN. Your study is London specific which has a much higher rate of knife crime than the rest England/UK. As such, the results will never be comparable. The prevention message is still very important. TARN inclusion criteria will play some role in the variation but is not the only variable.
Thank you, we have referenced TARN in the discussion and have added a sentence to the limitations to discuss this.

Regarding the variation in mortality, I think you need to offer some explanation in the variation. Part will be the definition of severe and moderate trauma which are based on ISS (in the studies referenced) and this is different to your definition.
Thank you, the one death in this cohort was severely injured with a head injury, however we have added a sentence to the limitations to reflect your comment.

Page 13, line 17, inuried is spelt wrong.
Corrected.