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)	Treatment for acute bronchiolitis before and after implementation of new national guidelines: a retrospective observational study from primary and secondary care in Oslo, Norway
AUTHORS	Klem, Nicolai Skjerven, Håvard Ove Nilsen, Beate Brekke, Mette Vallersnes, Odd Martin

VERSION 1 – REVIEW

REVIEWER	Reviewer name: Dr. Jacqueline Le Geyet Institution and Country: not applicable Competing interests: None
REVIEW RETURNED	10-Apr-2021

GENERAL COMMENTS	Thank you for this submission. A clearly written, easily understandable study. Relatively minor comments.... page 3 line 13 "Guidelines, often made in the specialist health services for specific conditions..." doesn't quite make sense. Did you mean something like " guidelines, often made by hospital specialists, are often perceived not to fit the primary care population" page 7 line 21 complaint not complain page 10 line 43. this statement is a bit inflammatory! Perhaps saying lower rather than low.... or else you might have some angry primary care readers... page 11 line 24 "rather than what actually benefits the patients" perhaps rephrase to what is evidenced based management page 13 lines 26-36. I agree - and i think this is a distinct weakness of the study... i'm presuming your primary care settings don't have the triage system (could this be clarifies for the international readers?), ie wouldn't have caught the "airway illness" as an umbrella term? I'm guessing "viral illness" or "lower respiratory tract infection" or similar would have been a common diagnosis given rather than just bronchiolitis. Therefore I suspect quite a large number of eligible cases were missed. I'm not sure "we may have missed some patients" is necessarily strong enough....

REVIEWER	Reviewer name: Dr. Conrad Kabali Institution and Country: 2264 Spence Lane, Burlington, Ontario, L7L6L3, Canada Competing interests: None
REVIEW RETURNED	10-Apr-2021

GENERAL COMMENTS	Overall, the manuscript is well written, and the analysis is clear. I have two comments.

	Page 7, line 6: Can you add year 2012 in your analysis? It will help strengthen (or weaken) your argument as to whether the trend is linked to the introduction of new guidelines. Page 8, line 35: What was the percentage of missing data in the registry and how did you determine that imputation was not necessary? Please elaborate.

VERSION 1 – AUTHOR RESPONSE

Dear Dr. Ian Maconochie and Prof. Imti Choonara
Thank you for this opportunity to revise our manuscript and for the valuable comments from you and the reviewers.

Editor in Chief:
- Title add "retrospective" before "observational".
We have modified the title accordingly.

Reviewer: 1 - Dr. Jacqueline Le Geyet
Comments to the Author: Thank you for this submission. A clearly written, easily understandable study. Relatively minor comments....
- Page 3 line 13 "Guidelines, often made in the specialist health services for specific conditions..." doesn't quite make sense. Did you mean something like " guidelines, often made by hospital specialists, are often perceived not to fit the primary care population"
Thank you very much for this very helpful suggestion. We have clarified the statement as recommended.
- Page 7 line 21 complaint not complain
We have corrected this.
- Page 10 line 43. this statement is a bit inflammatory! Perhaps saying lower rather than low.... or else you might have some angry primary care readers...
We appreciate the warning and agree that the original wording was a bit harsh. We have modified the statement.
- Page 11 line 24 "rather than what actually benefits the patients" perhaps rephrase to what is evidenced based management
We have modified the statement accordingly.
- Page 13 lines 26-36. I agree - and i think this is a distinct weakness of the study... i'm presuming your primary care settings don't have the triage system (could this be clarifies for the international readers?), ie wouldn't have caught the "airway illness" as an umbrella term? I'm guessing "viral illness" or "lower respiratory tract infection" or similar would have been a common diagnosis given rather than just bronchiolitis. Therefore I suspect quite a large number of eligible cases were missed. I'm not sure "we may have missed some patients" is necessarily strong enough....
The Oslo Accident and Emergency Outpatient Clinic uses the Manchester Triage System (MTS) before the patients are seen by our doctors. However, the specific triage chart used is not registered in our electronic patient records. Potentially eligible patients were identified from the complaint on presentation (free text field) registered by the triage nurses in the patient registration list. Our study personnel read all patient records where the complaint on presentation was related to airway

illnesses, including the ones you mention; “viral illness”, “lower respiratory tract infections”, as well as several other diagnoses.
This work was done manually which may have resulted in mistakes and cases being overlooked. Still, we think we cast our net wide enough to catch nearly all patients with bronchiolitis. We have now elaborated on this in the method section.
That being said, if the doctor treating the patient did not give the patient a bronchiolitis diagnosis or describe bronchiolitis treatment and relevant symptoms in the case notes, the patient was not included. This is probably what gives the largest reduction in the study population. We have tried to clarify this in the last paragraph in the revised Strengths and limitations section.

Reviewer: 2 - Dr. Conrad Kabali
Comments to the Author: Overall, the manuscript is well written, and the analysis is clear. I have two comments.
- Page 7, line 6: Can you add year 2012 in your analysis? It will help strengthen (or weaken) your argument as to whether the trend is linked to the introduction of new guidelines.
Thank you very much for this kind assessment of our manuscript. We agree that adding data from the year 2012 would strengthen our argument. This was however not done when we designed the study, and the requested data unfortunately are not available to us. Still, we consider our argument valid.
- Page 8, line 35: What was the percentage of missing data in the registry and how did you determine that imputation was not necessary? Please elaborate.
We determined that imputation was not necessary, partly due to the large number of study participants. Furthermore, vital signs were recorded in the vast majority of cases (see table below), and we consider the recorded data to give a representative description. In addition, we did not do statistical analyses where missing data would hamper the power of the study (e.g. regression analyses). CRP was not measured in about one of three patients, but this would not constitute missing data as such, as measuring CRP or not is a clinical decision.
When clinical signs (e.g. retractions and cyanosis), diagnostic investigations, or treatments were not mentioned in the patient records, we considered these clinical signs not present and the diagnostics or treatments not performed. This may have resulted in some underestimation of these signs, diagnostics and treatments, though probably without any impact on our conclusions. We have added a statement on this issue in the second paragraph in our revised Strengths and limitations section.

Table – Missing data and Imputation

	OAEOC	OUH
Total n of patients	1197 (100%)	680 (100%)
Heart Rate	639 (94%)	995 (83%)
Saturation	626 (92%)	1069 (89%)
Respiratory Rate	618 (91%)	1006 (84%)
Temperature	607 (89%)	944 (79%)

On behalf of the authors
Yours sincerely,

Nicolai Klem
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