Letter to the Editor: "Measles outbreak in the Philippines: epidemiological and clinical characteristics of hospitalized children, 2016–2019"

Hoang-Anh Ngo,[a,*] Nhung T. H. Pham,[b,c] Phuc Huu Phan,[d] Minh Hung Tran,[e] and Hoang Nguyen Vu[e]

[a]Usher Institute, The University of Edinburgh, Edinburgh, United Kingdom
[b]Department of Infection Control and Prevention, Vietnam National Children's Hospital, Hanoi, Viet Nam
[c]Vietnam Field Epidemiology Training Program, Viet Nam
[d]Pediatric Intensive Care Unit, Vietnam National Children's Hospital, Hanoi, Viet Nam
[e]Department of Mathematics, École Polytechnique, Institut Polytechnique de Paris, Palaiseau, France

The Lancet Regional Health - Western Pacific 2023;31: 100695
Published Online xxx
https://doi.org/10.1016/j.lanwpc.2023.100695

To the Editor:

As readers of *The Lancet Regional Health – Western Pacific*, along with the fact that measles outbreaks have been warned of perfect storm of conditions for within 2022 by UNICEF and WHO, we pay a significant interest to the content of the paper entitled "Measles outbreak in the Philippines: Epidemiological and clinical characteristics of hospitalized children, 2016–2019" published earlier within the same journal.[1,2] However, upon reproducing the results, we suspect that the authors has made several computational errors.

First, in Table 1, the authors did not state the referenced group within two characteristics, vitamin A supplementation and clinical information. This prevents readers from understanding the related context of the odds ratios (ORs), while also obstructs us from re-evaluating the calculation of the crude ORs within these sub-groups.

Apart from the two characteristics, using the package epitools v0.5–10.1 available within R statistical software v4.1.3, we were able to re-calculate 15 remaining ORs using the unconditional maximum likelihood estimation (Wald) method, with the p-value calculated using the mid-p method.[3,4] Among them, 6 (**40%**) are significantly different from the original results (more information can be found in the highlighted details in the attached table below). Besides, there is also one typographical error in the calculation of the percentage of children that have an interval of 0–3 days between fever onset and hospital admission.

In this letter, we do not investigate the calculation of the adjusted ORs since the detailed information of the patients involved in the research are not publicly available.

From the provided information, we encourage the authors, reviewers and editors to revisit and/or further elaborate on the methods for the calculation and conclusion of any OR within the paper, and make changes wherever applicable.

Yours sincerely.

Contributors

H.A.N: Conceptualisation, Formal Analysis, Supervision, Writing – Original Draft Preparation; **N.T.H.P**: Formal Analysis, Validation, Writing – Review & Editing; **P.H.P**: Supervision, Validation, Writing – Review & Editing; **M.H.T**: Formal Analysis, Writing – Review & Editing; **H.N.V**: Formal Analysis, Writing – Review & Editing.

Availability of data and materials

The information analysed within this letter are available in the GitHub repository, https://github.com/hoanganhngo610/recalculate-ORs-measles-Philippines-LRHWP.

Declaration of interests

The authors declare that they have no conflict of interest regarding the publication of this letter to the editor.

Acknowledgments

Funding: No specific grant from funding agencies in the public, commercial or not-for-profit sectors supported the publication of this letter to the editor.

References

1 World Health Organization. UNICEF and WHO warn of perfect storm of conditions for measles outbreaks, affecting children. Available online: https://www.who.int/news/item/27-04-2022-unicef-and-who-warn-of%2d%2dperfect-storm%2d%2dof-conditions-for-measles-outbreaks%2d%2daffecting-children. Accessed December 2, 2022.
2 Domai FM, Agrupis KA, Han SM, et al. Measles outbreak in the Philippines: Epidemiological and clinical characteristics of hospitalized children, 2016-2019. *Lancet Reg Health West Pacific*. 2022; 19:100334.
3 R Core Team. *R: A language an environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing; 2022. URL https://www.R-project.org/.
4 Aragon TJ. Epitools: epidemiology tools. R Package version 0.5-10. 1. URL https://CRAN.R-project.org/package=epitools; 2020.

DOIs of original articles: https://doi.org/10.1016/j.lanwpc.2023.100696, https://doi.org/10.1016/j.lanwpc.2021.100334
*Corresponding author.
E-mail address: h.a.ngo@sms.ed.ac.uk (H.-A. Ngo).

Variable	Reported number and percentages in the original article	Calculated percentages (if different) by the authors of this letter	Reported crude ORS within the original article		Re-calculated crude ORs by the authors of this letter	
			OR (95% CI)	P value	OR (95% CI)	P value
Age group (months)						
<3			**1.07 (0.29–3.90)**	**0.919**	**0.87 (0.21–3.66)**	**0.926**
3–5			1.82 (1.13–2.93)	0.013	1.82 (1.13–2.93)	0.016
6–8			1.29 (0.83–2.01)	0.256	1.29 (0.82–2.02)	0.261
9–11			1.14 (0.67–1.94)	0.622	1.13 (0.66–1.93)	0.648
12–24			1.72 (1.12–2.66)	0.014	1.72 (1.12–1.66)	0.015
>24			Ref		Ref	
Sex						
Male			Ref		Ref	
Female			0.96 (0.71–1.29)	0.765	0.95 (0.71–1.29)	0.761
Region of residence						
In NCR			Ref		Ref	
Outside NCR			1.55 (1.04–2.31)	0.032	1.53 (1.02-2.29)	0.046
Admission timing						
Non-epidemic			Ref		Ref	
Epidemic			**3.52 (1.22–10.20)**	**0.020**	**4.09 (1.30–12.88)**	**0.003**
Vaccine status						
Vaccinated (≥1 doses)			Ref		Ref	
Non-vaccinated			**1.75 (1.05–2.93)**	**0.032**	**1.80 (1.07–3.03)**	**0.019**
Duration between fever onset and admission (days)						
0 – 3d	**48 (239)**	**48 (2.3)**	Ref		Ref	
4 – 6d			1.44 (1.01–2.05)	0.044	1.44 (1.01–2.06)	0.04
7–14d			2.45 (1.58–3.78)	<0.001	2.44 (1.57–3.78)	<0.001
>14d			**1.81 (0.35–9.53)**	**0.482**	**1.24 (0.17–9.24)**	**0.759**
Duration between rash onset and admission (days)						
0 –3d			Ref		Ref	
4 –6d			1.88 (1.25–2.81)	0.002	1.85 (1.24–2.78)	0.005
7–14d			**3.84 (2.04–7.23)**	**<0.001**	**3.70 (1.94–7.05)**	**<0.001**
>14d			**1.03 (0.06–17.19)**	**0.986**	**0.00 (0.00-inf)**	**0.629**

Table 1: **Re-calculated odds ratios (ORs) for the association between socio-demographic and clinical characteristics and deaths. The newly calculated and original ORs are considered to be significantly different if and only if the difference is greater than or equal to 0.05, and are marked in bold.**