Widening the lens for pandemic preparedness: children must be seen *and* heard

Anita J. Campbell,[a,b,*] Fiona M. Russell,[c,d] Ben J. Marais,[e,f] Philip N. Britton,[e,f,g] Asha C. Bowen,[a,b] Christopher C. Blyth,[a,b,h] Katie L. Flanagan,[i,j,k] Ameneh Khatami,[g,l] Archana Koirala,[r,s] Michelle Mahony,[t] Linny K. Phuong,[m,n,o] Nan Vasilunas,[x] Rachel H. Webb,[u,v,w] Phoebe C. M. Williams,[p,q] and Brendan J. McMullan,[y,z] on behalf of the Australian and New Zealand Paediatric Infectious Diseases Society of the Australasian Society of Infectious Diseases

[a]Department of Infectious Diseases, Perth Children's Hospital, Perth, Western Australia, Australia
[b]Wesfarmers Centre for Vaccines and Infectious Diseases, The Kids Research Institute Australia, University of Western Australia, Perth, Western Australia, Australia
[c]Department of Paediatrics, The University of Melbourne, Melbourne, Victoria, Australia
[d]Infection, Immunity and Global Health Theme, Murdoch Children's Research Institute, Parkville, Victoria, Australia
[e]Sydney Infectious Diseases Institute (Sydney ID), University of Sydney, Australia
[f]The Westmead Children's Hospital, Sydney, Sydney
[g]Sydney Medical School, Faculty of Medicine and Health, University of Sydney, Australia
[h]School of Medicine, University of Western Australia, Perth, WA, Australia
[i]School of Medicine, Faculty of Health Sciences, University of Tasmania, Launceston, TAS, Australia
[j]School of Health and Biomedical Science, RMIT University, Melbourne, Victoria, Australia
[k]Dept of Infectious Diseases, Launceston General Hospital, Launceston, Tasmania, Australia
[l]The Children's Hospital at Westmead, Sydney Children's Hospitals Network, Sydney, Australia
[m]Infectious Diseases Unit, Royal Children's Hospital Melbourne, Parkville, Australia
[n]Murdoch Children's Research Institute, Melbourne, Victoria, Australia
[o]Department of Paediatrics, University of Melbourne, Victoria, Australia
[p]School of Public Health, Faculty of Medicine, University of Sydney, Australia
[q]The Sydney Children's Hospital Network, Sydney, Australia
[r]National Centre for Immunisation Research and Surveillance, Westmead, New South Wales, Australia
[s]Department of Infectious Diseases, Nepean Hospital, Penrith, New South Wales, Australia
[t]Northern Territory Department of Health, Territory Pathology, Darwin, Northern Territory, Australia
[u]Kidz First Hospital, Counties Manukau Health District, Auckland, New Zealand
[v]Department of Paediatrics, Child and Youth Health, The University of Auckland, Auckland, New Zealand
[w]Starship Children's Hospital, Auckland Health District, Auckland, New Zealand
[x]Department of Infectious Diseases, Women's and Children's Hospital, Adelaide, South Australia, Australia
[y]Department of Infectious Diseases, Sydney Children's Hospital, Randwick, New South Wales, Australia
[z]School of Clinical Medicine, University of New South Wales, Sydney, New South Wales, Australia

The Australian and New Zealand Paediatric Infectious Diseases (ANZPID) Group of the Australasian Society for Infectious Diseases (ASID) calls for urgent consideration of the needs and voices of children in response to the COVID-19 pandemic, and in planning for future pandemics.

New diseases with pandemic potential are emerging at an alarming rate given the cumulative impacts of climate change and an expanding global population. Children of this generation and future generations will likely endure further pandemics over their lifetimes. Widening the lens for pandemic preparedness to better incorporate the needs and voices of children is essential to avert potential lifelong consequences and social harm that has occurred with the COVID-19 pandemic.

*Corresponding author. Department of Infectious Diseases, Perth Children's Hospital, Perth, Western Australia, Australia.
E-mail address: anita.campbell@thekids.org.au (A.J. Campbell).
© 2024 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC license (http://creativecommons.org/licenses/by-nc/4.0/).

COVID-19 posed an unprecedented challenge to policymakers, given the uncertainty under which urgent decisions had to be made. Unfortunately, some of the public health measures exacerbated existing disparities in healthcare access and health outcomes globally. As island nations, Australia and New Zealand had the ability to strictly regulate closure of their national borders and also employed other public health measures including social distancing, school closures, vaccine mandates and restriction on physical activity.[1] However, the COVID-19 pandemic response had profound unintended consequences on the physical and mental health of children. COVID-19-related school closures were associated with significant and persistent learning deficits that have disproportionally affected children from lower socio-economic backgrounds due to inequitable access to online learning.[2,3] Other effects of the pandemic response include decreased physical activity contributing to childhood obesity,[4] increased food insecurity and malnutrition in settings where food access was restricted,[5] as well as increased screen time and its

The Lancet Regional Health - Western Pacific 2024;51: 101205
Published Online xxx
https://doi.org/10.1016/j.lanwpc.2024.101205

Box 1.
Public health recommendations for Australia and New Zealand to ensure that children and young people are seen *and* heard in future pandemics

Pre-pandemic outbreaks, health planning

Recommendation 1: Form a framework for child rights-informed ethical decision-making during pandemics that imbeds a formal, and sufficiently strong, youth and cargiver pro-active consultation and feedback mechanism.
Recommendation 2: Develop a national pandemic preparedness plan inclusive of a national school plan that classifies education facilities, disability, social welfare and maternal-child health services as 'essential services' and identifies staff caring for children in priority populations for immunisation.
Recommendation 3: Develop national public health transmission prevention strategies that aim to preserve outdoor play and physical activity as essential for child health and development.
Recommendation 4: Prepare pandemic plans with scenario based testing based on different transmission patterns and severity in children, and the research infrastructure that includes pre-designed and approved *Disease X* paediatric study protocols to be deployed early to inform school and public health preventative measures.
Recommendation 5: Prepare research infrastructure including pre-approved generic pandemic-adaptive trial protocols for future vaccines, pharmaceutical and non-pharmaceutical interventions which explictly include children, and can rapidly pivot to address Disease X.

Response in the event of a new pandemic (Disease X)

Recommendation 6: Convene a taskforce of leading paediatric infectious diseases, child development, public health physicians, child social services, child psychologists and education specialists, as well as regional and national youth and caregiver partner advocates to advise public health policy measures pertaining to children and adolescents.
Recommendation 7: Activate plans from Recommendations 1–5 undertaken pre-pandemic with engagement from key stakeholders outlined in Recommendation 6, inclusive of youth and cargiver advocates, who will be involved with facilitating transparent communication with the wider community.
Recommendation 8: Enact the national school pandemic plan, with explicit guidance for maintaining equitable access to education and child welfare during the course of the pandemic and following pandemic recovery.
Recommendation 9: Identify and prioritise high-risk child populations, ensuring additional services are provided to prevent widening health inequities related to the indirect effects of the pandemic.
Recommendation 10: Monitor the short- and long-term impact of public health and social measures on children as well as a child rights impact assessment (CRIA) to continuously inform and modify responses accordingly, addressing health and well-being impacts for children.

related effects.[4] Decreased child protection reporting was observed during the pandemic despite increased risk of child neglect and family violence with social isolation,[6] along with significant mental health impacts including a rise in anxiety and eating disorders. The needs of children therefore must be considered in future pandemic preparedness and young people and their representatives need to be given greater weight in decision making to avoid health and learning disparities for decades to come.[7]

Child health professionals have major concerns about the profound effect that pandemic disruption has had on children during crucial formative years. As yet, it is unknown what impact this is having on individuals reaching their full developmental potential and how these detrimental impacts will affect society. Paediatricians in some locations report a lengthening in waiting times beyond a year for developmental, behavioural and mental health assessments, and insufficient services to address the increase in developmental delay, eating disorders, depression and social anxiety.[8] Preparedness is needed to ensure that in future outbreaks, health and education access is equitably prioritised and that the detrimental effects to child physical and mental health are minimised.[9] Early childhood education centres, schools and other educational facilities should be classified as essential services, with vaccination and other prevention strategies prioritised for staff, and remote learning only considered as a last resort.[10] Access to disability, social welfare and maternal-child health and psychosocial services is vital. These should also be classified as essential services and prioritised in future pandemic planning.[11,12]

The mutually inter-dependent 'needs of children' encompass physical, social, cultural, neuropsychological and spiritual needs.[13] The needs of children form the basis for universal child rights, outlined by the United Nations Convention on the Rights of the Child (UNCRC) of which Australia and New Zealand are signatories.[14] Recognition that children rely on adults as well as government public services and policies to meet these irrevocable needs, forms the basis for understanding and protecting child rights. The UNCRC outlines that children have a right to education and play (article 31 and article 28).[14] Public health responses to the COVID-19 pandemic significantly disrupted children's lives including socialisation, play and learning opportunities which are recognised as essential

for healthy brain development. The unique needs of children during times of crises therefore must be at the forefront of national policy. This will be achieved through a well defined road-map for inclusion of youth advocates and child health and educational representives in pandemic decision-making processes to ensure adequate representation of children's best interests.[15] Importantly, the inclusion of child and youth advocates in pandemic decision-making processes is necessary to ensure adequate representation of children's best interests.

The importance of incorporating the 'voice of children' in times of crisis and pandemic preparedness is outlined in article 12 of the UNCRC, that requires children be informed and consulted over matters that impact their lives and young peoples views be given due weight in accordance to their age and capacity.[14] Youth involvement in other areas of society including healthcare service provision, research and climate change have been demonstrated to be effective.[16] Youth and caregiver advocate partners at both a regional and national level are important to maintain child rights.[17] Their meaningful involvement includes youth consultation of public health policy measures pertaining to children and adolescents, youth partnership in creation of a child-rights informed ethical decision making framework, and youth assisting with public information for children, adolescents and caregivers during the pandemic.[7]

The next pandemic (*Disease X*) is likely to be another viral respiratory pathogen, which may be more severe in children. National mitigation and recovery plans as well as pandemic preparedness plans are urgently required to meet these significant gaps (Box 1).[8] ANZPID, along with other national and international bodies including the Royal Australasian College of Physicians (RACP),[8] UNICEF and WHO, support child health, human rights and educational leadership representation as well as regional and national youth and caregiver partner advocates to ensure that the needs of children are carefully considered in future pandemic planning and responses. This should occur alongside the creation of national and international frameworks for child-rights-informed ethical decision making for pandemic scenarios. This approach will enhance policies and practices to ensure children basic human rights are protected while managing the direct and indirect threats of future pandemic.

Contributors

Authors AJ Campbell, BJ McMullan, BJ Marais, FM Russell were involved in the initial drafting of the manuscript and all authors were involved in subsequent revisions of the manuscript including AJ. Campbell, FM. Russell, BJ. Marais, PN. Britton, AC. Bowen, CC. Blyth, KL. Flanagan, A Khatami, A Koirala, M Mahony, LK. Phuong, N Vasilunas, R.H. Webb, PCM. Williams and BJ. McMullan.

Declaration of interests

Brendan J McMullan is serving in the non-paid role of Chair of the Australian and New Zealand Paediatric Infectious Diseases (ANZPID) Special Interest group of the Australasian Society of Infectious Diseases (ASID) and previously served on the ASID board (2018–2022). AJC is serving in the non-paid role of Deputy Chair of the ANZPID Special Interest group of ASID; she received support for travel to Infectious Diseases Society of America Week as an invited speaker in October 2023. Archana Koirala, Ameneh Khatami, LKP, MM, NV, PCMW are all members of the ANZPID committee. NV is member of Vaccine Special Interest Group (VACSIG) of ASID. LKP, PCMW are committee members of the World Society of Pediatric Infectious Diseases (WISPID). Archana Koirala is chair of VACSIG of ASID and received payment from WISPID for conference travel and attendance and payment from the Australian Department of Health through the National Centre of Immunisation Research and Surveillance Australia. ACB received an Australian National Health and Medical Research Council (NHMRC) Grant (GNT 1175504) and is the chair of the data safety and monitoring board for the FOSUTI trial, TIARA trial, STAMPS trial and is the current President of WISPID and board member of the Riverview Church. Ben J Marais and CCB are current directors of ASID. FMR has received grants from the Wellcome Trust, World health Organisation, Australian NHMRC and Australian Department of Foreign Affairs and Trade. FMR has received payment to attend the International Society of Pneumonia and Pneumococcal Diseases in South Africa and to attend the World Health Organisation Conference in Switzerland.

Acknowledgements

Role of the funding source: AJ Campbell holds a Raine clinician fellowship grant and FM Russell, AC Bowen, CC Blyth, PCM Williams, A Khatami and BJ McMullan hold NHMRC Investigator Grants.

All authors report this funding had no role in the decision for writing of the manuscript or to submit the manuscript for publication.

References

1 Van Nguyen H, Lan Nguyen H, Thi Minh Dao A, et al. The COVID-19 pandemic in Australia: public health responses, opportunities and challenges. *Int J Health Plann Manag*. 2022;37(1):5–13.
2 Hammerstein S, König C, Dreisörner T, Frey A. Effects of COVID-19-related school closures on student achievement-A systematic review. *Front Psychol*. 2021;12:746289.
3 Sato K, Fukai T, Fujisawa KK, Nakamuro M. Association between the COVID-19 pandemic and early childhood development. *JAMA Pediatr*. 2023;177(9):930–938.
4 Olive LS, Sciberras E, Berkowitz TS, et al. Child and parent physical activity, sleep, and screen time during COVID-19 and associations with mental health: implications for future psycho-cardiological disease? *Front Psychiatr*. 2021;12:774858.
5 Mark HE, Dias da Costa G, Pagliari C, Unger SA. Malnutrition: the silent pandemic. *BMJ*. 2020;371:m4593.
6 Katz I, Katz C, Andresen S, et al. Child maltreatment reports and Child Protection Service responses during COVID-19: knowledge exchange among Australia, Brazil, Canada, Colombia, Germany, Israel, and South Africa. *Child Abuse Negl*. 2021;116 (Pt 2):105078.
7 Campbell S, Carnevale FA. Children as an afterthought during COVID-19: defining a child-inclusive ethical framework for pandemic policymaking. *BMC Med Ethics*. 2022;23(1):126.
8 *Kids covid catch up campaign*. Royal Australian College of Physicians; 2022. https://kidscatchup.org.au/.
9 Basseal JM, Bennett CM, Collignon P, et al. Key lessons from the COVID-19 public health response in Australia. *Lancet Reg Health West Pac*. 2023;30:100616.
10 Buonsenso D, Roland D, De Rose C, et al. Schools closures during the COVID-19 pandemic: a catastrophic global situation. *Pediatr Infect Dis J*. 2021;40(4):e146–e150.
11 Keenan PM, Doody O. An update of the reported effects of the COVID-19 pandemic on person with intellectual disability and their carers: a scoping review. *Ann Med*. 2023;55(1):2196437.

12 Fung A, Ricci MF. Rethinking 'essential' and 'nonessential': the developmental paediatrician's COVID-19 response. *Paediatr Child Health*. 2020;25(5):265–267.

13 Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *Am Psychol*. 2000;55(1):68–78.

14 Convention on the rights of the child, 20 November 1989. *Annu Rev Popul Law*. 1989;16(95):485–501.

15 Nicholas D, Patershuk C, Koller D, et al. Pandemic planning in pediatric care: a website policy review and national survey data. *Health Pol*. 2010;96(2):134–142.

16 Postma L, Luchtenberg ML, Verhagen AAE, Maeckelberghe EL. Involving children and young people in paediatric research priority setting: a narrative review. *BMJ Paediatr Open*. 2022;6(1).

17 Larcher V, Brierley J. Children of COVID-19: pawns, pathfinders or partners? *J Med Ethics*. 2020;46(8):508–509.