

Preparing for a pandemic directly affecting children

Although children have largely avoided severe morbidity and mortality from direct COVID-19 infection, this might not be the case in future pandemics with novel pathogens. Children are not little adults. The professional expertise, dedicated equipment to care for them, their clinical presentation and management required can be significantly different from adult patients. Children and young people have the right to the highest attainable standard of health. The mandate of the European Health Emergency Preparedness and Response Authority (HERA) must protect this right by ensuring that healthcare systems across Europe are ready to care children and young people in the event of a pandemic targeting this population.

Proposed HERA Mandate

Knowledge anticipation, generation and dissemination: The stated goal of leveraging the power of artificial intelligence and predictive models to anticipate threats will require robust data sets that must include enough paediatric data to make accurate predictions about this population. Because paediatric data sets are small by nature, cross-border data sharing systems will be needed to pool data and create data lakes. These systems will also be essential for monitoring and rapidly understanding clinical and epidemiological features once an outbreak occurs.

Development capacity: As articulated in the proposed revision of the rules for developing medicines for children and rare diseases, the paediatric population faces unique barriers regarding the development of and access to medicines. To ensure that children and young people have access to the appropriate countermeasures, any evaluation of market and regulatory challenges must take their specific needs into account. Another factor in ensuring adequate development of pandemic countermeasures for children and young people will be investment in paediatric research and innovation infrastructure. There is already a disproportionately small portion of research funds spent on health topics dedicated to children, and the recovery efforts threaten to widen this gap.¹ In the case of COVID-19, the novel paediatric

multisystem inflammatory syndrome-temporally associated with COVID-19 (PIMS-TS) in young people highlights the need for paediatric-focused research to characterize new diseases and identify treatments.^{2,3}

Production capacity: Production capacity is a crucial issue for paediatrics. The availability of child-specific equipment is often limited at baseline due to low volume needs. A sudden increase in demand would have a more negative impact than the shortages noted in adults during the COVID-19 pandemic. To protect child health in a future pandemic, HERA will need mechanisms to ensure that health systems have the capacity to quickly increase the number of paediatric ICU beds and the requisite equipment needed to care for critically ill children.

Training: In addition to biopharmaceutics and bio-manufacturing, the mandate for HERA should also address the training needs of healthcare professionals. Systems that allow for the rapid acquisition of new skills, such as critical care, will be essential for keeping the population safe. During the COVID-19 pandemic adult health systems have been forced to quickly increase the number of intensive care unit (ICU) beds with some counting on the support of children's hospitals to treat adult patients or 'lend' staff.⁴ Considering the specificity of paediatrics, it would not be similarly feasible to increase paediatric ICU capacity using the support of adult hospitals staff. Saving children's lives in a future pandemic will require health systems to have the ability to rapidly source competent staff to care for an increased number of critically ill children.

Including children in every policy

We do not comment here on the proposed policy options to structure HERA. Instead, we make the general recommendation that whichever structure it takes, there must be a fixed position or office that ensures the needs of children and young people are addressed in each aspect of HERA.

The creation of the European Health Emergency Preparedness and Response Authority has the potential to ensure that children and young people stay safe during the next pandemic. But this will only happen with systematic input from the paediatric community and the inclusion of child-health in every policy decision. ECHO and our members look forward to working with the Commission as this initiative develops.

References

1. Modi N, Clark H, Wolfe I, Costello A, Budge H. A healthy nation: strengthening child health research in the UK. *The Lancet* 2013; 381: 73–87.
2. Grimaud M, Starck J, Levy M, *et al.* Acute myocarditis and multisystem inflammatory emerging disease following SARS-CoV-2 infection in critically ill children. *Ann Intensive Care* 2020; 10: 69.
3. Toubiana J, Poirault C, Corsia A, *et al.* Kawasaki-like multisystem inflammatory syndrome in children during the covid-19 pandemic in Paris, France: prospective observational study. *BMJ* 2020; m2094.
4. Sinha R, Aramburo A, Deep A, *et al.* Caring for critically ill adults in paediatric intensive care units in England during the COVID-19 pandemic: planning, implementation and lessons for the future. *Arch Dis Child* 2021; archdischild-2020-320962.

About ECHO

ECHO advocates for children's health and their access to the best quality care through the collaborative work of children's hospitals.

ECHO Members

Barcelona: Sant Joan de Déu Barcelona Children's Hospital – **Copenhagen:** Rigshospitalet – **Dublin:** Children's Hospital Group – **Florence:** Meyer Children's Hospital – **Helsinki:** HUS New Children's Hospital – **London:** Great Ormond Street Hospital for Children – **Munich:** Dr. von Hauner Children's Hospital – **Oslo:** Oslo University Hospital – **Paris:** Necker-Enfants Universitary Malades Hospital – **Riga:** Children's Clinical University Hospital – **Rotterdam:** Erasmus – MC Sophia Children's Hospital – **Petach-Tikva:** Schneider Children's Hospital of Israel – **Warsaw:** Children's Memorial Health Institute