**Challenges and opportunities for child health services in responses to the COVID19 pandemic**

Many countries have universal child health services as part of an early intervention strategy to promote long-term developmental and physical health outcomes. These services are delivered with remarkable similarity globally by nurses, health visitors and/or paediatricians, and share common goals: to address health inequalities, promote public health, identify vulnerability, and refer for additional support. The COVID19 pandemic poses direct implications for infant mortality and morbidity in low and middle-income countries through closure and disruption to these services. Services in high-income countries have also been affected by redeployment of staff, staff burnout, and potentially dangerous caseload allocations (Dow & Conti, 2020). The impact of this reallocation of services has been reflected by families directly, with only 11% of mothers in the UK reporting having seen a health visitor face-to-face (Babies in Lockdown, 2020). This is of concern as family needs will be higher than pre-pandemic, with many affected by bereavement, family illness, and change to financial circumstances. When universal services are unable to deliver on the quantity or quality of expected contacts, this carries additional implications for more specialist services that rely on these referral routes.

While immediate responses to the unprecedented first wave of the pandemic led to short term impacts on service delivery, it is important to monitor changes to service delivery in recurrent waves of the disease, and the cumulative impact on families. It must also be recognised that many of these services were under threat *prior to* the pandemic. In the UK, less than 1% of national funding in the 2019/20 financial year went to children’s mental health services, and it was unclear how much funding was allocated specifically for 0-2-year olds and many commissioners reported decreased spending from previous years (Lennon, 2021). To understand the impact of COVID, research and practice must be more granular in its interpretation of changes by trying to establish the extent to which changes in rates of adverse physical and mental health outcomes are directly resulting from COVID (e.g. loneliness, anxiety) or through families not receiving appropriate early intervention from services (Fallon et al, 2021).

Considering the overwhelming adjustments to service delivery, it is important to also review how the interventional *content* and *quality* of visits are being experienced by families. We cannot simply provide the same amount of support and information in less time and with less staff. We need to identify evidence-based interventions deliverable in a brief format, with consensus on the priority components (Newham et al, 2020). The need to reduce the risk of infection coupled with reduced capacity of work forces has presented challenges but also opportunities. One global example is that there has been increased adoption and implementation of telehealth, including digital technology alternatives. This expediting of innovation and engagement with more flexible approaches offers positives. For example, underserved/rural communities with lack of accessibility to local services may become better connected; some families may face fewer practical barriers to access, including transport, childcare, and attending during working hours. However, we must also recognise existing digital inequalities and variation within and across countries in terms of accessibility and ability to use technology. In the UK, 16% of the population are unable to access the internet and those facing social deprivation are those most likely to be without technology and at the highest level of need for intervention (NHS England, 2020). To prevent creating further disparities in support provided, we need to recognise what recommended interventions are less applicable in a remote format, document what innovative practices have been feasible and acceptable, and disseminate beyond local networks through growing partnerships between statutory services and voluntary and community organisations.

It is critical to monitor whether changes to service delivery to reduce the risk of infection may compromise efforts to promote and protect emotional and physical safeguarding of the child. In-person appointments enable physical assessment and demonstration of infant feeding techniques and routine infant care but also allow healthcare professionals to conduct physical and mental health assessments of both mother and child post-delivery that can identify injury, infection, and even abuse. Telehealth may not offer the same opportunities to pick up or explore concerns and, in addition, communication in-person may be compromised by virtue of masks worn by health professionals and by parents. In addition to communication being potentially different, healthcare professionals often describe how the home environment provides contextual cues of how families are coping. With 80% of service providers reporting *increased* exposure to domestic conflict, child abuse or neglect in 0-2 year olds, the level of undetected risk is also likely to have increased (Reed, 2021). Conversely when discussing sensitive topics, it is possible that – for some – telehealth interactions may promote identification and disclosure of concerns, including parental and infant mental health difficulties. This becomes more complex with the involvement of the partner during lockdown as there is a higher probability of them being home. This offers more opportunity for being partner-inclusive but may also compromise the opportunity for a parent to speak with a professional away from a partner and, for example, their ability to disclose abuse. We need to identify what factors determine families engaging with services compared to pre-COVID19, to recognise what adjustments should remain available after the pandemic to promote personalised care.

An unprecedented public health challenge has been met with rapid changes to practice, new solutions, and innovation by individual professionals and by services. While regional data provides insight, we need comparative and longitudinal data at both a national and international level to distinguish to what extent service provision and health outcomes have followed pre-covid19 downward trajectories, worsened because of COVID directly, or improved because of innovation resulting from the challenges that COVID19 has brought. Cross-cultural comparisons with countries which have increased local services as opposed to promoting virtual alternatives are underway (<https://aspire-covid19.com/>) and will provide interesting insights into adapting to COVID19, but there is much wider global learning on how we can rapidly adapt, innovate, and implement services to address the lack of support and inequalities that many families were experiencing prior to the pandemic.

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**Authorship details and contact details for corresponding author**

**Corresponding author:** Dr James J Newham, Faculty of Health and Life Sciences, Northumbria University, Newcastle upon Tyne, UK Email: [james.newham@northumbria.ac.uk](mailto:james.newham@northumbria.ac.uk)

Dr Vicky Fallon, Department of Psychology, Institute of Population Health, University of Liverpool, , Liverpool, UK. Email: [V.Fallon@liverpool.ac.uk](mailto:V.Fallon@liverpool.ac.uk)

Dr Zoe Darwin, Department of Nursing and Midwifery, School of Human and Health Sciences, University of Huddersfield, Huddersfield, UK Email: [Z.Darwin@hud.ac.uk](mailto:Z.Darwin@hud.ac.uk)