

Lockdown measures reduced the risk of covid-19, but had unintended consequences for children

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The coronavirus disease 2019 (covid-19) pandemic is undoubtedly the biggest public health crisis since the second world war, and its consequences will be felt for many years to come. The outbreak spread at unprecedented speed across continents, resulting in illness and death, particularly among the frail and elderly. An unusual feature of the pandemic, however, has been the relative sparing of children and young people by SARS-CoV-2, who account for only 1-3% of covid-19 cases, with only 5% of those tested developing severe or critical disease, and very few deaths reported worldwide, compared to other causes of childhood deaths, and to covid-19 case-fatality rates of up to 15% in older adults. [1-5]

Unlike many other viral respiratory infections such as influenza, children appear less likely to be infected with SARS-CoV-2 than adults and there is accumulating evidence from household transmission studies and outbreak investigations in educational settings that children do not contribute significantly to community transmission. [6,7] That the lockdown has significantly reduced the risk of SARS-CoV-2 in children is undeniable and it is likely that incidence of other highly transmissible viral infections, especially respiratory and gastrointestinal infections, were also reduced during lockdown.

These benefits, however, are overshadowed by the negative consequences of the lockdown. First and foremost is the direct impact on their health. Emergency departments in the UK experienced unprecedented reductions of >50% in attendances during lockdown. [8] In Scotland, children's emergency department attendances fell proportionally more than any other age-group. This raises concerns that children with critical illnesses were not accessing health services on time and, therefore, suffering potentially avoidable harm.

At the end of April 2020, we undertook a snapshot survey of more than 4,000 paediatricians across the UK and Ireland through the British Paediatric Surveillance Unit (BPSU) of the Royal College of Paediatrics and Child Health (RCPCH). 60% of paediatricians responded within 7 days and, and 241 (32%) of 752 emergency department paediatricians had witnessed delayed presentations. Free text responses revealed diabetes mellitus (new diagnosis/diabetic ketoacidosis) as by far the most common delayed presentation, followed by delayed presentations of sepsis and new cancer diagnoses. [9] There were also nine deaths, resulting mainly from sepsis and malignancy, where delayed presentation was considered by the reporting paediatrician to be a significant contributing factor – higher than the total number of childhood covid-19 deaths reported over the same period in England. While emergency department attendances have improved somewhat, they were still a third lower June 2020 compared to the same period in the previous year, raising real concerns that the problems of delayed presentations of critical illnesses and accessing health and social care is continuing. [8] Similar findings were reported in a small case series from Italy. [10].

In the BPSU survey, the reasons for the delayed presentations included parents strictly adhering to the "Stay at Home" messaging by the government, as well as parental concerns about getting infected by SARS-CoV-2 in hospital and not wanting to disturb doctors during the pandemic. Paediatric oncologists have reported a reduction in referrals for cancer assessment which raises concerns about undiagnosed cancer in the community and late presentations in the coming weeks.

Similarly, in addition to the reported delays in presentations of child protection cases, community paediatricians have raised concerns about the lack of referrals for child protection assessment at a time when many parents struggle to cope with staying at home. Reports of poor mental health, including depression and anxiety, domestic violence, and concerns about suicide, all increased during the lockdown, again disproportionately affecting the most disadvantaged families. [11-13]

The lockdown also resulted in declining childhood immunisation rates, especially for the measles-mumps-rubella (MMR) vaccine at one year of age, raising concerns of future outbreaks.[14] While there are signs of immunisation programmes returning to normal activity in primary care, school-based immunisation programmes need to be reactivated as soon as possible to avoid large cohorts from missing out on protection against vaccine-preventable infections. There are similar issues with lack of access to dental services and routine outpatient services for managing chronic childhood conditions.

In addition to the above factors, there are other social consequences of the lockdown that are more difficult to measure. The loss of learning, which is more likely to affect the most disadvantaged children, is likely to have significant long-term effects, both at the individual and societal level. [15] There are also wider social consequences resulting from isolation and loss of interaction with other children, both for the younger age-groups and for adolescents, many of whom are likely to experience depression and anxiety both during and many years after enforced isolation; importantly, this risk increases with the duration of isolation. [16]

There is currently no evidence to support a major role for children in SARS-CoV-2 transmission within the household, community or educational settings, with studies reporting little to no impact of school closures predicted for transmission or death due to covid-19. [6,7,17] The benefits of children returning to schools are undeniable, but returning to schools needs to be approached with all the appropriate precautions in place. Extensive infection control and prevention measures have been recommended to protect students and staff returning to school, including close and effective links between schools and local health protection teams supporting the NHS Test and Trace. [18] These interventions need to be carefully assessed for their value and impact in reducing the risk of SARS-CoV-2 infection and transmission. Sentinel surveillance in educational settings across England is currently in place and will provide important information to facilitate the safe return of staff and students to school in the autumn. [19].

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