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COVID INQUIRY

Covid-19 in the UK: policy on children and schools

Deepti Gurdasani and colleagues argue UK covid policy did not give children sufficient priority and question the evidence behind government decisions

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Key messages

- Pandemic policy on children and schools reflected UK based scientific narratives that did not align with global scientific consensus
- Government relied on evidence that downplayed the seriousness of covid-19 in children, underestimated the benefits of precautionary measures, and overestimated the harms of vaccination
- Return to school in September 2020 with minimal emphasis on masking and air quality, and inadequate support for isolation may have accelerated community transmission
- The public inquiry should explore why the UK was an international outlier in its approach to protecting children and making schools and communities safer

Children in the United Kingdom have been severely affected by the covid-19 pandemic. The closure of schools deprived them of access not only to education but to the many other things that schools provide, from emotional support and life skills to, for some, regular meals. Some schools, especially those attended by children from more affluent families, were able to partially compensate by moving lessons online, but many could not, not least because many of their pupils were in families that were digitally excluded. Children from disadvantaged families were also disproportionately affected by bereavement as many had breadwinners in jobs that placed them at high risk of infection.

As the pandemic progressed, the needs of children continued to be overlooked. Schools reopened without measures to protect them and their families, in particular monitoring of indoor air quality and effective ventilation. When vaccines became available, there were long delays before recommending them for children and the messaging was confused. But worst of all, children in the UK were weaponised, exploited in an ideological battle by those who viewed any restriction on individual liberty as an unacceptable attack on their freedom. We examine the evidence behind government decisions and suggest what the public inquiry needs to consider so that we can learn for the future.

Unsafe reopening

The enormous educational and social benefits to children from attending school, particularly those vulnerable at home,[1] and the initial belief that covid-19 was a mild and inconsequential disease in children led the UK governments to reopen schools as soon as possible after the initial closures. However, reopening was not accompanied by a comprehensive package of measures to protect children returning to school. Schools relied on measures such as staggered start times, hand and surface hygiene, and class or year group bubbles. Masks were advised only for secondary schoolchildren, and mostly not in classrooms.

Government policy seems to have been based on three assumptions—namely, that children had a minimal role in community spread, particularly to vulnerable relatives; that schools were not loci of transmission; and that children were not harmed by infection. However, none of these assumptions is true, and this was knowable early on, when key decisions were made (table 1). Indeed, policies on children and schools (especially in England but to a lesser extent in devolved nations) diverged in many ways from those implemented by other governments (including many in western Europe, Southeast Asia, the Middle East) and were contrary to advice from the World Health Organization, the European Centre for Disease Prevention and Control, and US Centers for Disease Control and Prevention.[63-65]

Table 1 | Links between evidence and UK policy on children and schools

Date	Policy decision	Evidence or rationale cited to support policy	Comment and critique
March 2020	Schools closed on 20 March during accelerating spread in the UK	SAGE advised on 2 March that school closures along with several other interventions could reduce number of deaths, and peak pressures on the NHS[1 2] but early documents suggested that school closure would only have a modest impact, delaying rather than preventing infection.[3-9] On 16 March, SAGE advised school closures along with other interventions as soon as possible.[10] These were not implemented until 20 March, which constituted roughly one doubling time	Government acted to close schools three weeks after SAGE first advised that this intervention could save lives.[2] Earlier closure may have further reduced transmission and deaths during the first wave[11] and possibly the duration of school closures needed. The real world experience of other countries ahead of the UK in the pandemic (South Korea, Italy, China, Hong Kong, Singapore) that either closed schools or extended school holidays was noted[12] but largely ignored in favour of modelling based evidence.[7 10 13] The advice that school closures likely had modest impact[6 8] and that mitigations only delayed rather than prevented impact was flawed, as subsequent experience from many other countries has made clear
June 2020	Schools reopened after community transmission reduced	SAGE advised that school openings should be accompanied by distancing, hygiene, and ventilation.[14] There appears to have been uncertainty about whether R would exceed 1 with school reopening.	Attendance remained low in schools during June and July. Hygiene measures, isolation of cases and contacts, bubbles (with no cap in numbers), and staggered drop-off/pick-up and break times were instituted. With these measures, low attendance, and very low background community transmission, there were few outbreaks in schools during this period[15 16]
Autumn 2020	Schools restarted amid increasing community transmission rates with staggered start times, hand and surface hygiene measures, class or year bubbles, physical distancing for older children where possible, self-isolation for cases and identified contacts, masks in communal areas only for older secondary school children in Scotland, Northern Ireland, Wales, and in areas of local lockdowns in England.[17] In non-lockdown regions, schools had flexibility to introduce masks in communal areas in England[17]	SAGE Scientific Pandemic Influenza Group on Modelling (SPI-M-O) warned that a surge in transmission could occur on reopening[18]	Rapid increases in case numbers in school age children were seen following school re-opening in September 2020. As the alpha variant gained dominance, and lockdown was eased in early December, infection prevalence reached levels higher than all other age groups by the end of term. Rises of infection in children preceded those in other age groups. By this time, several studies confirmed that schools were major sites of transmission and school closures had contributed significantly to reducing community transmission in wave 1,[18-21] with both WHO and CDC recommending multilayered robust mitigations in schools, including masks
November 2020	Policy advised against masks in classrooms for primary[22] and secondary schoolchildren[23]	The assumed harms of masking (eg, difficulties keeping them on and communication difficulties) were heavily emphasised; benefits of masking were downplayed or denied, citing highly selected evidence	Many western European countries, US, Israel, Canada, and South East Asia had introduced masks in both primary and secondary schools by this point. Following more mainstream scientific evidence, CDC[24] and WHO[25] recommended masking of children as a key measure to reduce transmission in schools along with physical distancing and attention to air quality
September 2021	Bubbles introduced in schools	Restriction of contacts was assumed to reduce transmission	Although the principle was sound, implementation was flawed (some year group bubbles included hundreds of children)
	Physical distancing introduced in secondary schools, where possible	2 metre distancing (based on a droplet mode of transmission) was assumed to stop transmission	Distancing was hard to enforce, and not possible in many classrooms, given large class sizes. Time spent indoors, class size, and level of indoor crowding were given limited emphasis despite being crucial to preventing airborne transmission

Table 1 | Links between evidence and UK policy on children and schools *(Continued)*

Date	Policy decision	Evidence or rationale cited to support policy	Comment and critique
January 2021	Schools closed partially, just one day after term started[26 27]	SAGE highlighted the substantial role of schools in transmission, and the need for mitigations to curb this in their report in December 2020.[28] The Environmental Modelling Group also highlighted the utility of CO2 monitoring and ventilation in reducing transmission at this time[29]	Despite clear warnings by SAGE, government policy chaotically delayed decisions on school closures, so that millions of children were tested and returned to school for a single day during high levels of transmission. Within one day, the Prime Minister's messaging shifted from "schools are safe", to "schools are vectors of transmission",[27] leaving school staff, students, and parents to plan around school closures at very short notice
	Introduction of rapid testing of asymptomatic secondary schoolchildren, staff, and household members of school, with isolation if positive	Asymptomatic transmission was known to occur	Initial roll-out of asymptomatic testing did not involve key stakeholders. Testing reduced but did not eliminate in-school transmission because of limited (and declining) uptake and false negative results. Lack of support for isolation, including for parents and carers, disincentivised testing, and uptake rapidly fell to low levels and continued to remain low until it was discontinued in April 2022
February 2021	UKHSA states that children are rarely seriously affected and transmission in schools is low. It also stated that the alpha variant was not more transmissible or severe in children[30]	This narrative is based on Skids seroprevalence study conducted June-July 2020 and Sep-Nov 2020,[16] ONS Schools Infection Survey,[31] and Warwick school absences study.[32] Basis for transmissibility of alpha is unknown	UKHSA claim ignored ecological and observational evidence of community transmission, infection in household members relating to school opening, and ONS data showing high infection rates in schoolchildren in December 2020. Additionally, the studies it relied on were flawed, being conducted at times of low attendance and underascertaining cases
	UKHSA does not advise masks or testing in primary schools on the basis that infection rates in primary school age children have been consistently lower than in secondary school age children and transmission from pupils to staff is uncommon[30]	The evidence behind these claims is not clear. The school infection survey showed lower PCR positivity in primary school children than secondary school children. However, during many periods when schools were open (eg, towards the end of term, December 2020), the ONS survey repeatedly showed that while primary school children had lower infection rates than secondary school children, they still had higher positivity than all adult age groups, with high educational disruption from covid-19 absences	There appears to be an age gradient in symptomaticity, which means younger children are even less likely to be symptomatic.[33] Other European countries offered primary school children the option of rapid testing, including Austria, which also offered accessible 'lollipop' and saliva tests to younger children. The ONS survey consistently showed high infection rates in both primary and secondary school age children while schools were open, and global studies consistently showed that those living in households with primary school age children were at higher risk of infection than age matched counterparts not living with children.[34-36]
March 2021	Schools re-opened with isolation of cases and contacts, hand and surface hygiene, social distancing, bubbles where possible, and masks and rapid testing in secondary schools	UKHSA advice and supporting evidence as above	Unlike the UK, many countries in Europe implemented mask wearing in both primary and secondary schools, as recommended by CDC. Although good ventilation was advised, no efforts were made to monitor air quality or supplement ventilation or air cleaning where needed
May 2021	Mask requirements were dropped in England, at a point when infection rates among children were rising steeply in regions where the new delta variant was gaining dominance[37]	The rationale has not been disclosed. A freedom of information request was rejected.[38] SAGE[39] and other experts[40] advised against removing masks at this point	Dropping masking requirements at this key point probably led to more rapid spread of the delta variant into the community, and mass school disruption.[40] Infection rates among school age children reached new heights, with a prevalence of 2.2% and 3.3% in primary and secondary school children, respectively, and more than a million children off school in July 2021.[41] Long covid numbers in children also increased

Table 1 | Links between evidence and UK policy on children and schools *(Continued)*

Date	Policy decision	Evidence or rationale cited to support policy	Comment and critique
August 2021-April 2022	Vaccination of children and adolescents was delayed and considered non-urgent. Vaccination was offered to 16-17 yr olds in August 2021, late September 2021 to 12-15 yr olds, and April 2022 for 5-11 year olds. Vaccines for under 5s and boosters for under 16s have not been approved or offered as yet.	Covid-19 was assumed to be mild in children; infection of children was sometimes depicted as beneficial on the grounds that it built immunity. Policy advisers considered harms of vaccination (especially rare cardiac complications) to outweigh benefits. Long covid and reduction in education disruption was not considered in decision making	Covid-19 can be serious and even fatal in children; even tiny numbers of such outcomes are a tragedy. Immunity wanes quickly in children; reinfections are common. Evidence is growing evidence that covid-19 can become chronic in some children. Cardiac complications of covid-19 in children can be serious; those of the vaccine appear self-limiting and rare. International policy and practice was to vaccinate, and evidence consistently showed benefits outweighed risks in all age groups
August 2021	Government announced an end to quarantine for contacts of cases in those under 18 years and to school driven contact tracing.[42 43] Bubbling of students also ended	No evidential basis for this step provided by UKHSA	Schools opened at community infection rates 26-fold higher than the previous year.[44 45] Asymptomatic voluntary testing continued, but uptake remained low. Unsurprisingly, covid-19 absences and educational disruption also continued despite the end to the requirement for quarantining, as more children got infected and prevalence of SARS-CoV-2 hit 6% and 8% by the end of the 2021 in primary and secondary school children.[46]
	The UKHSA changed definitions of contacts so that most contacts of cases in school would not be considered, and therefore not be required to isolate or test[47]	No evidential basis provided	As contact tracers were not able to identify contacts in schools, school contacts were often not identified or contacted. UKHSA and DfE guidance suggests this was an anticipated consequence
September 2021	CO2 monitors were promised to schools but air quality measures (eg,. ventilation, filtration) were not prioritised	SAGE committees recommended improving ventilation in indoor spaces early in the pandemic.[29 48] Air quality measures were acknowledged as good practice, but the threshold set was higher than international and HSE standards[48-51]	SARS-CoV-2 is transmitted predominantly through the air.[52] School is a high risk activity because it involves high room occupancy for prolonged periods, often unmasked and vocalising.[53] Implementation of air quality measures failed (eg, CO2 monitors were promised but delivery delayed and utility limited[54 55]; only 3% of UK schools were considered eligible for air purifier kits by 21 January 2022).[56] The government's procurement process seems to have prioritised procurement of expensive HEPA air filtration devices when cheaper alternatives with lower noise levels were readily available
January 2022	Masks were introduced into secondary school classrooms in England during the omicron surge. These were dropped after three weeks in England. Scotland and Wales dropped requirements from 28 February and Northern Ireland on 21 March. Masking requirements in communal areas of schools were dropped after Easter in Scotland, Northern Ireland and on 9 May in Wales.	The emphasis always seems to have been on the inconvenience of masks, prioritising very limited evidence on harms over overwhelming evidence for benefits.[35 57 58] DfEs flawed study that did not differentiate between communal and classroom class wearing was cited as evidence on the effectiveness of mask wearing being inconclusive or unclear[59-61]	Dropping mask wearing in secondary schools, and lack of mask wearing in primary schools likely affected children, the least vaccinated group in the population. They had disproportionately high infection with point prevalence in primary school children reaching almost 15% during the omicron wave.[46] Numbers of children with long covid tripled over summer and autumn 2021, and increases in children again during the omicron wave.
April 2022	Free testing ended, including rapid testing in schools	Prevailing policy view was that the pandemic was now waning, in-school transmission was not a major concern and benefits of getting 'back to normal' outweighed risks	A roadmap for safer reopening of schools, with smaller class sizes, support for isolation, attention to air quality, outdoor lessons and use of large indoor spaces where possible, and locally led test and trace systems was repeatedly ignored[62]

UK was international outlier

The UK response at each step was out of line with that in many other countries. Portugal and Austria required masks for all children aged 6 years and above in school as early as May 2020,[2] and Italy, Greece, Spain, Austria, France, and several states in Germany by required masks in primary and secondary schools by October. However, when school restarted in September 2020 in the UK, secondary school children were required to wear masks only in communal areas.

Germany invested substantially in ventilation in public buildings, including schools, during this period.[3] Denmark and Greece reduced class sizes. Israel, Spain, Denmark, and Italy increased physical distancing within classrooms. Several regions in Spain hired more teaching staff to maintain smaller bubbles and began using facilities like canteens and libraries to allow physical distancing. Masks in schools were maintained across Italy, France, Spain, Portugal, and Austria, and several states in Germany for the entire school year

until autumn 2021, when measures were briefly eased before being reinstituted during the delta wave.

The UK's approach reflects wider policy differences. Class sizes in England are among the highest in western Europe,[4] and chronic underfunding of schools and education combined with pre-existing social inequalities helped magnify the effect of the pandemic on children and families, exacerbating inequalities. Practical and financial support for people with symptoms or testing positive to isolate was inadequate: UK sick pay is the lowest across the Organisation for Economic Cooperation and Development (OECD), and government provided minimal additional funds with strict eligible criteria, and many applications turned down.

It also did not provide adequate support for parents or carers, which probably discouraged voluntary testing.[5] In Germany, for example, parents were paid child sickness benefit when looking after children with covid-19.[6] School attendance was mandatory for all children in the UK, with families choosing to remote school being put at risk of prosecution, disproportionately affecting clinically vulnerable households.[7]

The vaccine roll-out to 12-15 year olds started in the UK after most children in the US, Canada, Israel, and much of western Europe had already been vaccinated. Over 8.7 million 5-11-year-olds had been vaccinated in the US by the time the Joint Committee on Vaccination and Immunisation (JVCI) recommended vaccines for this group in February 2022.[66 67] The UK vaccination rate for primary school children remains far lower than the European average (two dose uptake 2.1% compared with median of 13.6% in 5-9 year olds across the EU, as of 21 July 2022).[68 69]

Children deemed low priority

Early pandemic policy rightly prioritised protecting those at greatest risk of severe acute disease and death, such as older people. But as the pandemic progressed, protecting children continued to be seen as low priority. The effect on children was underestimated consistently, as severe disease in children was compared with that in adults rather than against other childhood illnesses. Although deaths from covid-19 are rare in children (85 up to June 2022, table 2), they are more common than from many other childhood illnesses (eg, mumps, measles, varicella, rubella).[78] Furthermore, death rates for children were calculated using population denominators, ignoring the substantial changes in infection rates during the pandemic. For example, in the five months from December 2021 to mid-April 2022 about 50% of 8-11 year olds in the UK caught covid-19 compared with an estimated 40% over the previous 20 months.[8] Large numbers of children were infected in a short period with corresponding increases in absolute numbers admitted to hospital and deaths.

Table 2 | Health effects of government policy on children

Outcome	Region	Estimates (up to June 2022)	Comments
Long covid (2-16 years)[70]	UK	115 000 (28 day), 26 000 (1 year) 1.8% of primary school children, 4.8% of secondary school children (12 weeks)[71]	Rates have tripled since August 2020
Hospital admissions with covid-19 (<18 years)[72]	England	26 207	Admissions in England and Scotland between August 2020 and October 2021 exceeded those across 10 European countries put together, including Germany and Italy[73]
Deaths from covid-19 (<18 years)[74]	England and Wales	92 deaths involving covid-19 (covid on death certificate)	Annual deaths with covid as the underlying cause for 0-19 year olds exceeded deaths from measles, mumps, rubella, and varicella in 2019. Covid deaths among 0-19 year olds in 2021 were 56 compared with 1 from measles, 1 from varicella, and none from mumps and rubella in 2019[75]
Mental health	England	Overall mental health did not change or improved slightly[76 77]	Effect worse for children with special educational needs and disadvantaged children. Children reported anxiety about effect of pandemic on loved ones. Effect in primary school children correlated with restrictions and cases

The effect of long covid on children was also largely ignored in policy on the basis that it was uncertain. This was despite early evidence from the Office for National Statistics (ONS) that substantial numbers of children reported persistent symptoms post-infection. Given that over 90% of young children are thought to have been infected with SARS-CoV-2, even if a small proportion of children were considered at risk of developing persistent infection, this is substantial effect at population level.[8] Indeed, the ONS school survey estimated that 1.8% and 4.8% of all primary school and year 7 to 13 pupils have had persistent symptoms for at least 12 weeks that affected their daily life since March 2020.[10]

Government policy also did not consider the wider impact of community transmission on children, including the effect of death or long covid in carers.[12] Over 13 000 children lost a parent from covid-19 compared with estimates of 6000 for Germany, 6700 for France, 3400 for Spain, and 4800 for Italy.[79]

Transmission risk was ignored

The government prioritised reopening schools but failed to do anything to reduce disruption to education caused by spread of covid-19 in schools. This resulted in high levels of absences in children and staff, even after requirements for isolation of contacts were removed.[11]

Despite repeated warnings by the Scientific Advisory Group for Emergencies (SAGE)[13 14] of the important role schools played in transmission (table 1), policy decisions drew on an implicit or explicit narrative that schools were not major sites of transmission

of the virus and that the harms of remote schooling outweighed the benefits of in-person schooling.

Evidence accumulated that schools were important sites of transmission during summer 2020.[15-17 24] Several ecological studies across the world identified school closures as one of the most effective interventions in modifying epidemic growth.[15-17 24] Large studies across the UK,[25] US,[18] Denmark,[19] and Sweden[20] also found a higher risk of infection in household members living with children compared with those not living with children, as well as in teachers doing in-person teaching.

However, the UK Health and Security Agency's (UKHSA) research,[22] conducted at a time when attendance and infection prevalence was low, predictably showed few outbreaks within schools. This was interpreted as showing that in-school transmission was minimal. Similarly, the ONS Schools Infection Survey finding that infection rates in schoolchildren were lower than in the community,[80] was interpreted to mean that schools were not contributing significantly to transmission, when it was almost certainly because many children with covid-19 and their contacts were not sampled because they were isolating at home. There also seems to have been increased focus on a systematic review by a UK team (including members of SAGE)[26] that suggested children had reduced susceptibility to infection, with policy makers ignoring that children often have one of the highest exposure rates because of school environments.

The primary evidence included in the review had serious flaws, as has been highlighted before.[27] In particular, many studies failed to take account of the fact that infected children are often asymptomatic or have atypical symptoms[28-32] and will therefore be missed when case ascertainment is based on symptoms or symptom based testing. Most studies either did not test contacts or tested contacts only if they developed symptoms. Furthermore, studies that focus on seroprevalence data[81] also underestimate infection and transmission in children. This is because seroconversion occurs at a lower rate in children,[34] with waning of antibodies and seroreversion occurring more rapidly than in adults.

Another systematic review (with some of the same authors) that synthesised studies on the effect of school openings and closures[26 27 36 37] concluded that the role of schools in transmission is uncertain. This also had from major flaws, including exclusion of critical studies and misinterpretation of included evidence.

Diverse study types confirm the role of schools in transmission (ecological studies of interventions, observational studies of infection in teachers and household members of children, genomic surveillance studies[29 38 39]). In addition, the SARS-CoV-2 Infection Survey conducted by the UK Office of National Statistics (ONS) through random community household surveillance (hence avoiding the biases described above) indicated that infection rates among children were often highest when schools were open. Increases and falls mirrored the opening and closing of schools (fig 1).[40] This was evident even during half terms, where drops in infection prevalence among children often preceded those in parental and other age groups.

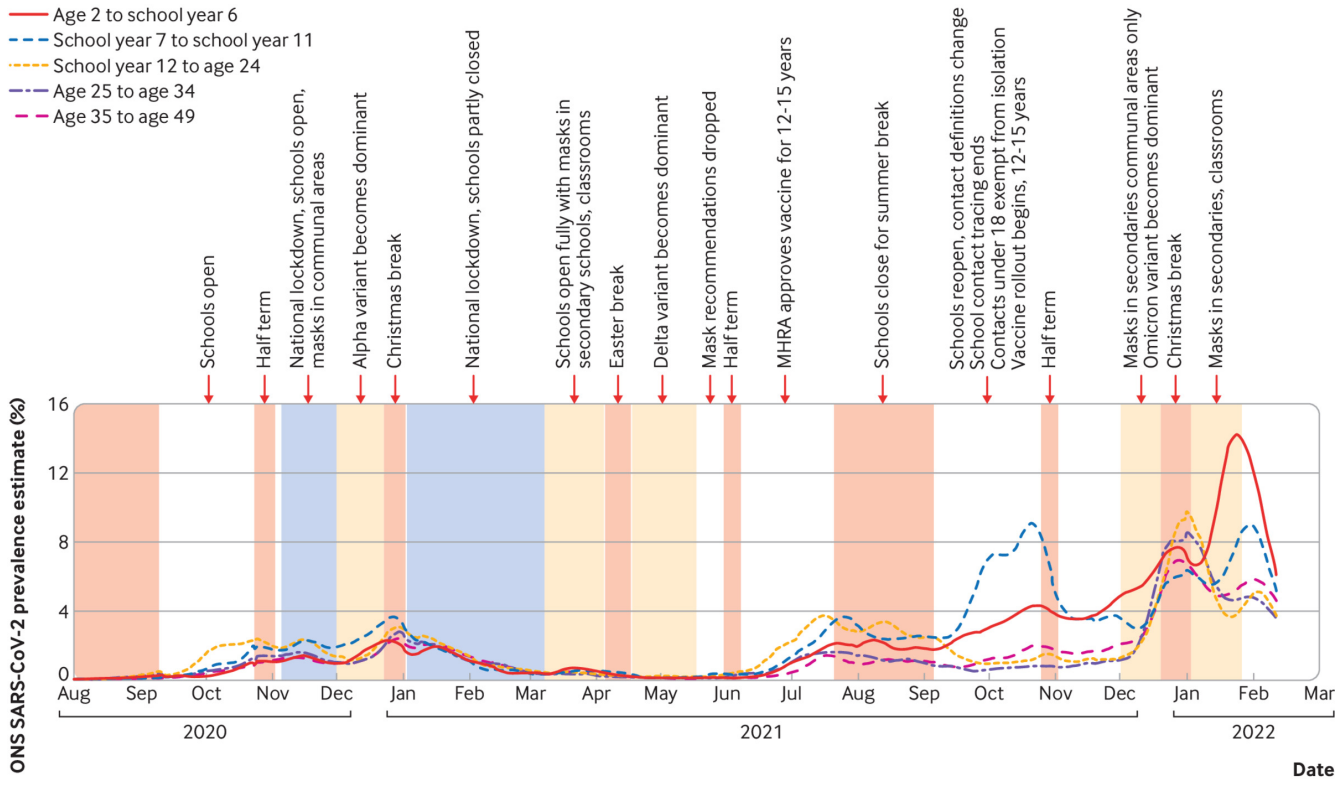

Fig 1 | SARS-CoV-2 prevalence measured in Office for National Statistics Infection Survey from March 2021 to 2022 and correlation with school opening. Orange highlighted regions show periods of school closure. Yellow highlighted areas show periods during which masks were required in school either in communal areas or classrooms. Blue highlighted areas show periods of lockdown. Data for adults aged ≥50 years not shown for ease of readability, but prevalence was lower than for school age children consistently

Air quality received too little attention

Covid-19 is an airborne disease.[41] Schools are high risk settings for airborne spread,[42] and reducing transmission requires attention to air quality by ventilation (eg, opening windows, fans, and monitoring carbon dioxide levels to assess adequacy of efforts), filtration (with inbuilt or portable filters), or sterilisation (eg, with ultraviolet light).[43] Carbon dioxide levels in indoor air reflect the amount of exhaled air. The CDC recommends supplementing ventilation at 800 ppm, while the Federation of European Heating, Ventilation and Air Conditioning Associations (REHVA) stipulates a target of below 1000 ppm.[44 45 47] The UK Health and Safety Executive recommends a threshold of 800 ppm in areas where continuous talking occurs.[46]

Despite recommendations by international public health bodies and SAGE committees to improve ventilation early in the pandemic,[45 48] little was done until September 2021. Over 90% of schools reported opening windows periodically to ventilate or even for most of the day, but the adequacy of these measures is hard to quantify without data on air quality.[49] All schools were promised CO_2 monitors,[50] but delivery was considerably delayed,[51] and their utility limited by inadequate supply and barriers to ventilation (eg, temperature, limited window opening).[49 51] The Department for Education (DfE) and Public Health Scotland also stipulated a much higher cut-off (>1500 ppm) for action than international standards,[52] even though high CO_2 levels impair concentration[53] and learning.

Only 3% of schools have been considered eligible for air purifiers up to January 2022.[82] Over half of English schools were still unable to use CO_2 monitors in December 2021,[51] and of the 19% that reported consistently high values of CO_2, 53% said these were not improved despite taking action to improve ventilation.[51] No policy has been introduced setting ventilation standards in new school buildings.

Masking undervalued and de-emphasised

Policy on masking in schools must be considered in the context of UK policy on masking more generally, which was characterised by competing scientific narratives, policy inertia, and public conflict (especially around government mandated encroachments on individual 'freedoms').[54] Masks for the public were initially depicted as having unproved efficacy for preventing transmission and as potentially harmful fomites. Powerful pressure groups, including the parent group Us for Them, campaigned against masking of children.[55]

Against this background, PHE expressed concerns about mask wearing by schoolchildren, particularly those in primary school, and the English DfE stated in August 2020 that masking in school "should be avoided" as it would lead to a "negative impact on learning and teaching."[56] Masking within classrooms was not recommended in England, Northern Ireland, and Wales throughout 2020. Masks were introduced in communal areas for secondary school students in November 2020. In Scotland, masks were introduced in communal areas only for secondary school students in August 2020 but extended to classrooms in November 2020.

Lack of masking was compounded by the large class sizes, no cap on bubble sizes (bubbles often being hundreds of children), and crowded classrooms making physical distancing impossible in many schools. This is likely to have contributed to the growth of the second wave, as the alpha variant spread within schools and into communities in late 2020.[59-61]

UK policies contrasted starkly with those in comparable countries. In February 2021, for example, the US CDC recommended all children wear masks in school,[57] and WHO recommended masks for all children above the age of 12 years when physical distancing could not be maintained, advising a risk-based approach for 5-11 year olds based on local transmission rates and other factors. Both organisations highlighted the need for ventilation, physical distancing, and multilayered mitigations in schools.

Mask use remained low in classrooms in England, with secondary school headteachers reporting only 32% of secondary school children wearing masks in classrooms in December 2021.[49] In January 2022, nearly two years into the pandemic, UKHSA and DfE[58] acknowledged the large body of observational evidence showing that masks were effective in reducing transmission, including in school.[62 70 71 78] However, masks were reintroduced in secondary schools for just three weeks during the omicron wave (table 1). Far more weight was given to limited DfE surveys showing that 80% of secondary school children thought masks made it difficult to communicate (although 70% also reported they made them feel safe).[58] These negative effects were presented without modelling the additional educational benefits if masking reduced the number of school days lost because of covid-19 infections (including staff absences and long covid).

By contrast, the Scottish working group highlighted strong support among young people for mask wearing and identified no negative effects in their qualitative research.[76] The CDC states that the limited available data indicate "no clear evidence that masking impairs emotional or language development in children." Another study examining 7-13 year olds showed that while there may be some loss of emotional information from wearing masks, children can still infer emotions from faces and probably use many other cues to make these inferences, and that mask wearing is unlikely to have any major impact on social interactions of children in their daily lives.[77 79 83]

UK policy on masking in schools relied heavily on a small, highly flawed and non-peer-reviewed study that the DfE conducted over two weeks in October 2021.[58] This study was underpowered and had too short a follow-up period to test the effectiveness of masking. It did not distinguish between mask wearing in classrooms and masking only in communal areas, and no participants were masked during lunch breaks. The lack of a significant difference between masked and unmasked arms was interpreted as evidence that the effectiveness of mask wearing was limited or inconclusive.[58 84 85] The report failed to fully acknowledge the limitations of the study design and largely ignored the global evidence that masks significantly reduced school based transmission.[18 70 71]

Because masking in schools was undervalued, little attention was paid to the type or quality of mask that might be worn by children, or when masking might be particularly effective (or ineffective). Well fitting, high grade (respirator) masks protect the wearer against virus in the air, hence may have an important role in protecting clinically vulnerable children (or children with clinically vulnerable household contacts) even when others in the classroom are unmasked. The effect of masking on particular groups (eg, people withhearing impairment or special needs), and children under the age of 3 years was rightly acknowledged, but the evidence from around the world that millions of children routinely wear masks in class without an adverse effect on their wellbeing or learning was ignored. Exercise (especially prolonged and strenuous) and vocalisation (especially singing) greatly increases such emission. The removal of masks for indoor physical education, singing, and communal assemblies makes no scientific sense but was rarely flagged as high risk.

Testing and support for isolation

Given the importance of pre-symptomatic transmission, and the high levels of asymptomatic infection in children, frequent testing was important to reduce spread. However, many parents caring for children at home faced potentially unaffordable costs as there was limited financial[86] and practical support for isolation, providing little incentive for voluntary routine testing. The initial roll out of asymptomatic testing was poorly planned with little involvement of teachers and parents.[87] Uptake of testing reduced steadily to only 21% of secondary school children registering tests in May-June 2021.[88] Testing was never made available to primary school children, unlike in other European countries (eg, Austria), where accessible testing (eg, saliva tests) for young children was prioritised. Free testing ended in April 2022.

Late vaccination

The flawed narrative that children were not severely affected by covid-19 led to delays in offering vaccination to children in the UK compared with other countries. When the minutes of JCVI meetings were released belatedly in November 2021,[89] they revealed that the modelling by PHE and Warwick University had suggested a substantial benefit of vaccinating these age groups but the committee chose not to recommend it. By the time children were offered vaccination, a substantial proportion had been infected. This also led the JCVI to raise the idea that vaccination was low priority and infection was desirable to develop natural immunity in children, and "boost" parents' immunity.[89] No evidence to support this view has been reported. UKHSA's work has shown that children seroorevert rapidly[81] and reinfection even within three months is not uncommon.[90] This is consistent with global evidence that children have lower levels and faster waning of antibodies than adults.[34 90 -92] Recent evidence also suggests that elicited neutralising antibody titres are higher after vaccination than after infection in children.[93]

JCVI minutes suggest it gave much more weight to the potential long term effects of the vaccine than to the known effects of infection. Long covid gets only a short mention,[89] even though it was known to be more common and concerning than any adverse events from the vaccine at the time. Furthermore, the JCVI, unlike other countries, recommended a 12 week wait between doses for adolescents, and the same wait between infection and dosing. This meant substantial delays in vaccination for many children who were infected before or during the vaccination schedule. These JCVI positions and recommendations went against the evidence and the policies of many other countries and organisations.[94 -97]

As most countries move to providing third doses to children, the UK remains well behind, with no discussions around boosters for under 16s or vaccination for children under 5. Vaccine uptake remains lower than the European average among children.

Lack of support for learning

Headteachers and their staff worked tirelessly to provide as much support for their pupils as possible during the pandemic. However, like the NHS, schools entered the pandemic greatly weakened by a decade of austerity and struggled to cope. The government's scheme to purchase laptops for schools fell far short of what was promised.[98] Lack of appropriate remote schooling provision and technological barriers affected children unequally.[99] The most deprived students and students in state schools and colleges were less likely to experience online learning and have interactions with teachers, students, and peers than less deprived students and students in independent schools.[99] Inequalities in loss of learning in reading and numeracy predictably continued well into 2021 because of lack of support, particularly for disadvantaged students. Stripping back of catch-up funding for children has left schools, children, and families struggling.[100] Despite the behavioural insights committee repeatedly advising government to engage with key communities and stakeholders, little was done.

Broader issues

We have catalogued areas in which the response by governments at Westminster and in the devolved nations let children down (box). We trust that the public inquiry will examine these in more detail to inform the specific lessons that arise. However, there are some broader issues that must be examined.

No-one disputes that keeping schools open should be a high priority, but they should be safe, with measures to minimise transmission among children and to their families. Some children died and others have been left severely disabled. Others have been orphaned. For those affected, this is a high cost to bear. Serious illness and death of children should not be so easily dismissed. Of course these severe outcomes were much less common than in older people but this is the wrong comparison. Cancer in children is also rare, but that does not mean it can be ignored. The appropriate comparison is with other childhood illnesses.

More widely, much of the evidence that was generated and used was problematic. Many of the studies that should have been able to inform policy were poorly designed and inadequate to answer the question posed. Key reviews misinterpreted some of the evidence examined.

What was it about the decision making process in the UK that, while claiming to act in the best interests of children, let them down so badly? In many cases it seems that there was a failure to update guidance on, for example, school transmission, efficacy of masks, importance of airborne spread, or illness in children. The debate on children and covid has become particularly polarised,[101] but structured and predetermined processes to review evidence, both domestic and international, might have facilitated translation of evidence into policy and incorporated learning from mistakes into future policy making.

Questions for the public inquiry

- Why was preventing covid-19 in children deemed low priority
- Why was transmission risk in schools underestimated?
- Why was so little attention paid to air quality?
- Why were testing and support for isolating given little attention?
- Why was masking in schools undervalued and de-emphasised?
- Why was vaccination offered late to children and considered low priority?
- Why was more not done to support learning?

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