

Headteacher challenges and opportunities of implementing COVID-19 preventive measures in schools in England from 2022 onwards

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Abstract

Objective: Government guidance to reduce COVID-19 transmission was rapidly implemented by headteachers in primary and secondary schools in England. This study investigated the main challenges and opportunities faced by headteachers during the pandemic recovery period (starting in March 2021 when schools reopened indefinitely). Findings are intended to inform education policy to support schools and for future outbreaks.

Design: Qualitative study involving semi-structured interviews.

Setting: Primary and secondary schools in England from April to September 2022.

Method: We undertook remote interviews using Zoom with 10 headteachers and senior leaders from six primary and four secondary schools. A thematic analysis was conducted to identify challenges and opportunities faced by schools when implementing COVID-19 preventive measures.

Results: Participants continued to implement some preventive measures (ventilation, optional face masks, handwashing) into the recovery period. Hybrid learning was a large burden on schools, even more so than remote learning. Many schools felt confident in their ability to scale preventive measures up or down if needed in the future. Due to the increased utilisation of resources dedicated to the COVID-19 response, school budgets were felt to be at risk for the forthcoming school years.

Conclusion: Implementation measures advised by the Government were perceived as helpful but came at a large human resource and financial cost. Schools should be provided with flexible guidance to allow leadership to tailor preventive measures to their own context. This would require technical advisory support to be available. Further research is needed to understand the impact of the COVID-19 recovery period on a wider scale for both teachers and students.

Keywords

COVID-19, education, pandemic, prevention measures, school-health

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Introduction

Globally, the COVID-19 pandemic is estimated to have impacted 1.6 billion students and young people worldwide (UNESCO, 2023). While less likely to experience severe infection (NHS, 2022), children are still able to catch, become ill and transmit COVID-19 (Hoffman and Miller, 2020; Office for National Statistics, 2022). In March 2020, the majority of UK schools were ordered to shut down with some exceptions, for vulnerable children and those with parents who were key workers¹ (Ministry of Housing Communities and Local Government, 2020; Southall et al., 2021). The impact of school closures has been reported to have affected children in numerous ways, including a decrease in mental well-being, child protection (with medical referrals falling 36%–39%), obesity (increasing by 4.5%) and the academic challenges felt by students (Bhopal et al., 2021; Garstang et al., 2020; National Child Measurement Programme, 2021; Viner et al., 2022). Teachers and senior leaders experienced challenges during school closures, as they faced major changes in their teaching environments, abrupt decision-making from the government, and often feared for their students' safety and well-being in unsafe homes (Kim and Asbury, 2020).

Schools reopened from early to mid-June 2020, followed by a national lockdown closing schools again in January 2021, and then re-opened in March 2021 (UK Government, 2020b). To reduce the risk of SARS-CoV-2 transmission among school staff and students, UK Government (2020a, 2020b) issued guidance on prevention and mitigation measures was issued to schools for the duration of the pandemic, with periodic changes and updates. In summary, the government advised 'bubbles' (no mixing of groups of students and staff outside of their assigned class or year group), routine COVID-19 testing (ending in April 2022), good ventilation, CO₂ monitoring, enhanced disinfection practices, staggered drop-off and pick-up times, masking (staff and secondary school students) and staying at home when sick (Sundaram et al., 2021; UK Government, 2020a, 2020b).

There is a growing body of literature examining the impact and feasibility of implementation of COVID-19 guidelines in schools during the early stages of the pandemic (Amin-Chowdhury et al., 2022; Bonell et al., 2022; Hoffman and Miller, 2020; Kim and Asbury, 2020; Sundaram et al., 2023a, 2023b). A national study researching headteachers in 105 English primary schools in the summer of 2020 identified that pressures on school staff to continue to provide education to students, a lack of parental support, minimal guidance for Special Educational Needs & Disability (SEND) students and managing the administrative burden of tracking and tracing COVID-19 contact, put significant stress on staff (Sundaram et al., 2021). However, overall, they found strong commitment from school staff to implementing government-recommended preventive measures.

Another research study by Sundaram et al. (2023a) examining the fidelity and feasibility of implementing COVID-19 preventive measures in the autumn of 2020 in 128 schools found high adherence by staff when implementing COVID-19 preventive measures, although implementation was more difficult for secondary schools. Staff were also reported to experience high emotional fatigue and high burnout from those in leadership positions (Sundaram et al., 2023b). In addition, a quantitative longitudinal research study conducted in 15 local authorities in England during the 2020–2021 school year found that physical distancing and separating students were not consistently implemented over time, but measures such as hand hygiene and enhanced cleaning were sustained (Sundaram et al., 2023b). In 2022, school attendance (by both students and staff) had also been reported to have not returned to the pre-pandemic average, and schools faced continued disruption with remote learning, non-teaching staff covers, and combined classroom teaching (Montacute et al., 2022).

Relatively little research has focused on the challenges and opportunities in sustaining preventive measures in schools during the recovery period, that is from January 2022 onwards, and of

schools reopening. This article explores the challenges and opportunities of implementation of COVID-19 preventive measures by schools in the recovery period from 2022 onwards following UK Government (2020b) guidance. Our study and data collection focus on a time period which, in England, coincided with the peak of the Omicron variant of SARS-CoV-2 and required movement into the ‘living with COVID-19’ phase of the pandemic. This research was nested within a larger cohort study called the School Infection Survey–2 (SIS-2). Another article from the study data set has focused on mental well-being within the school community (McKay et al., 2023).

Our research aimed to answer the following research questions: (1) what were the challenges faced by schools implementing preventive measures advised by the UK Government; and (2) what opportunities for successful implementation of COVID-19 preventive measures within school systems and leadership structures were identified in the recovery period?

Methods

Participant recruitment

This qualitative study was nested within SIS-2, a large collaborative study undertaken by the Office of National Statistics (ONS), the United Kingdom Health Security Agency (UKHSA) and the London School of Hygiene and Tropical Medicine (LSHTM) (Ladhani et al., 2022). SIS-2 consisted of surveys sent to children, headteachers and parents to explore the mental health impacts of COVID-19 and the use of antibody testing in schools (ONS, 2022).

For the work reported in this paper, we used a convenience sample of SIS-2 schools and schools external to SIS-2, that volunteered to participate. We worked with ONS-employed School Engagement Officers to contact all SIS-2 schools to recruit 10 headteachers equally split between primary and secondary schools. Six of the 11 primary schools that expressed interest were purposively selected to reflect diversity in geographical location, school capacity (indicated through school OFSTED² ratings) and index of multiple deprivation. The two secondary schools that expressed interest were automatically enrolled given the low numbers volunteering to participate in the study. In total, eight headteachers who volunteered from the SIS-2 cohort were successfully recruited.

Due to low uptake from secondary schools, two more headteachers were recruited via email from outside the SIS-2 cohort. A total of 955 emails were sent out to secondary schools across all of England and four expressed interest in participating. Two of these four were enrolled as they responded to the request for an interview date. Additional details on recruitment are described elsewhere (McKay et al., 2023).

The final sample included 10 participants – nine headteachers and one senior leadership team member representing six primary schools and four secondary schools. All participants were given an information sheet and consent form and the opportunity to ask questions. After consent had been received, a date and time of the interview was set to be conducted on Zoom. Only one interview was not transcribed as consent for audio recording was not given (detailed notes were taken with permission). No financial compensation was provided to participants.

Data collection and analysis

A semi-structured topic guide was developed by adapting the qualitative topic guide from the SIS-1 study. New areas of focus including vaccination for secondary school students, mental health and the sustainability of implementing preventive measures in the recovery period. Key topics in the interview guide included implementation of preventive measures in a school setting; school

responses to infections; vaccination experiences; pandemic uncertainty; and sustainability. Mental wellbeing and support during COVID-19 for staff and students were also explored during the interviews and findings from this research have been published elsewhere (McKay et al., 2023).

Interviews lasted between 35 and 60 minutes and took place online between April and September 2022 using Zoom. All Zoom audio recordings were transcribed by a member of the research team (GV). Analysis took place using thematic analysis (Braun and Clarke, 2006). The first three interviews were inductively coded in NVivo by GM and GV using descriptive codes. Then axial coding was applied to bring the descriptive codes together into broader categories focusing on COVID-19 preventive measures advised by the UK Government. The remaining interviews were coded deductively while leaving space for the development of new codes and categories. Themes and sub-themes were then identified through discussions between GV and GM and engagement with the literature on preventive measures and COVID-19. Themes and key quotes were shared with the research team (NS, CB, PM, PND) for sense checking.

Ethics

The study was approved by the ethics committee of the London School of Hygiene and Tropical Medicine (Reference: 22657-6) and the UKHSA Research Ethics and Governance of Public Health Practice Group (Reference: R&D 474).

Findings

Three of the primary schools represented in the study in the West Midlands, one from London, one in the north-east of England and one in the south-west. Of the secondary schools, three were in the south-west, and one was in the east of England.

From the interviews with 10 participants, the overarching themes identified concerned the challenges faced by schools when implementing the preventive measures advised by the UK Government, and opportunities for the successful implementation of COVID-19 preventive measures in the recovery period (January 2022 onwards).

Challenges faced by schools implementing preventive measures

Adapting to high staff absence during outbreak waves. It was stressed by most participants that the adjustments to ‘return to normal’ were incredibly burdensome for all staff, especially given the concurrent pressure to ensure hybrid learning environments. One primary headteacher stated,

I mean each phase of the pandemic had its own character and presented its own difficulties and challenges . . . But looking back on all of it now, I think the most difficult period of the whole thing was around October half term last year [October 2021] through to about Easter [2022] . . . We were sort of operating normally but we were operating with high levels of staff absence . . . normally, we don’t have large amounts of staff absence. So, we were coping with more or less 10 teachers off every day for about 6 months.

In addition, during the Omicron wave of the COVID-19 epidemic, a mixture of staff absence and recruitment challenges, and special health plans for vulnerable students caused major challenges in providing adequate levels of teaching support. One primary headteacher stated,

We’ve had to pull together and cover it [as headteacher] because we can’t get the staff, and that’s been the biggest thing for us. In the last six months or so, we’ve had vacancies in school because we’ve had

[vulnerable] children awarded education healthcare plans³ and not been able to appoint staff . . . whether that's a result of COVID or just staffing in general, we don't know but we do feel that COVID has got a lot to answer for it in that respect.

Managing hybrid and in-person learning modalities. Hybrid learning, or remote learning through digital and non-digital means with a mixture of online and offline teaching options (Howard et al., 2021), was felt by some participants to have led to an immense pressure of student safeguarding on top of carrying out curriculum requirements for each session. One secondary headteacher stated,

One of the things that we found difficult . . . was just to keep tabs on everything. Where was everybody . . . from a safeguarding perspective? . . . It's more difficult because you just got more and more phone calls . . . Do we know is this kid away from school today for a legitimate reason? It just adds more and more pressure.

A primary headteacher stated that the 2022 period (from January onwards) was more difficult than earlier phases of the pandemic given high prevalence levels of COVID-19 and the pressure to ensure students receive the same education despite missing a significant amount of school or tutoring sessions:

I think they're [the staff] finding now more stressful, because everything's supposed to be back to normal. Yet we've got high, really high levels of COVID in all the classes. Children are coming and going. They're trying to provide work for children at home . . . we've done school tutoring . . . and then that child's missed the tutoring . . . It's the illness [that] is very disruptive still, and I think that's impacting on staff.

During the recovery period, headteachers reported that staff struggled to cope with hybrid learning when teachers had to provide education both in-person when schools reopened and simultaneously online to children who tested positive for COVID-19 and were required to stay at home. The challenges were due to staff shortages and the need to balance very different learning modalities. One secondary headteacher stated,

Personally, I think that [the teachers] are under more stress now than before they were vaccinated. So, it was a physical threat before they were vaccinated. But I think being vaccinated and the pressures being piled on them . . . like when we were doing [hybrid learning], all of my staff had a class in front of them and a group of children online at the same time, I didn't have enough staff for one to be doing the online learning, and one to be doing the teaching in school.

Challenges to COVID-19 testing responsibilities. COVID-19 testing was agreed by participants to be important but came with significant logistical oversight and budget challenges for supporting and managing staff. One secondary headteacher said,

So, the IT systems that sat behind the recording [of the COVID-19 test result] notification to parents – that was unbelievably challenging. It's not a simple as putting an apron on and swabbing a child. All of that became back-office stuff, [it was] really expensive in terms of overtime . . . for staff to be able to do those simple things.

When it came to staff rapid testing for COVID-19, participants reported that their schools encouraged but did not mandate lateral flow testing, and that staff were generally compliant with twice-weekly testing, although in some cases staff did not report via the NHS app, but instead reported internally to their colleagues. One primary headteacher stated,

... [what the staff] didn't necessarily engage with was reporting [results] through the app, or through the website ... even though we have those discussions that the more people that report gives [the government] a better data set to work with ... We have a WhatsApp staff group ... So that was our reporting mechanism.

Generally, participants reported that parents were having their children tested using COVID-19 rapid tests according to the guidance. However, one participant stated that some parents preferred not to know whether their child was positive or not, as it would cause disruption to not attend school. The same primary headteacher felt empathy for such parents, as some may not have been able to make provision for alternative childcare and the loss of earnings if they had to stay at home from work.

Financial constraints due to heating bills and cleaning costs. The financial impacts of implementing preventive measures were mentioned by several participants. With much higher costs of heating in the winter due to the need to keep school windows open, and the increased costs of cleaning, participants were worried about finances in the upcoming school year (2022–2023). A secondary headteacher voiced their concern over the need to spend money from their emergency fund to cover the costs of heating, stating,

[We] spent more on emergency cover this year than we ever have done. That has been a huge issue, because it hasn't taken us into deficit, because I manage the school budget really tightly. But what it has done is eaten into any contingency, to carry forward into next year [2022–23].

Keeping doors and windows open was universally agreed to be a positive preventive measure and was widely implemented in the recovery period. Keeping windows open was the default option, as keeping doors open allowed in too much noise and disrupted learning. There were challenges however to keeping windows open, including wind, rain and cold. The need for increased ventilation contributed to increased costs, with one primary headteacher stating,

So, we have been cold for 2 years [keeping windows open], our gas bill is enormous again. We haven't had any complaints, well children have said they're cold, but we haven't had parents complaining, as they've understood why we're doing what we're doing.

Many headteachers stated they have had to use their limited budget to pay for extra cleaning by private contractors which had stretched school budgets. This has resulted in some headteachers doing the cleaning themselves during break times. One primary headteacher stated,

[we have been] paying for extra cleaning through a [private finance agreement], which is much more expensive than getting a cleaner yourself .. So, therefore I do some of the cleaning myself, which isn't great, and I think I took it on not realising that with still be doing it now ... Basically, the cleaners clean at lunch time, and they haven't got time to clean the lunch tables so I clean all the lunch tables.

Less than desired autonomy in implementing government guidance. When participants were asked to reflect on the role of the UK Government and the interpretation and implementation of guidance supplied by the Department of Education (DofE) 2 years into the pandemic, mixed responses were received. Some participants complained that government guidelines arrived in the form of a large volume of information sent at the last minute, at the same time as measures were publicly announced. One primary headteacher stated,

I watched the TV just like you. That's how I found out about new policy. We needed a heads up. Parents thought that schools were told before it hit the news. They didn't understand that we were finding out when you do.

Participants felt that they should have been given more autonomy (especially in the later stages of the pandemic) in making decisions about how to implement preventive measures instead of relying on advice from their local authority or spending a large amount of time trying to speak with Public Health England to understand the guidance. One secondary headteacher stated,

... things that I found difficult during the pandemic were trying to stay on top of the guidance. In the end, we would probably make our own decisions on some things ... the guidance was so deep, and it changed, and you never really knew ... I like autonomy, I like academic control. But that ... was perhaps not well suited to the challenges of a pandemic ... I remember being on the phone, and just thinking, this is just a waste of my time with Public Health England ...

Challenges in COVID-19 vaccination uptake and coordination in secondary schools. From January 2022, school-based COVID-19 vaccination programmes led by external School Age Immunisation Service (SAIS) teams offered children aged 12 to 15 years two doses of vaccine (UK Government, 2022). Participants from secondary schools reported that they saw a lower uptake of the COVID-19 vaccination than they had done of routine vaccination campaigns. They thought this might have to do with having less logistical control over coordinating the vaccination programme such as informing parents in advance and arranging scheduling. Having an external body such as the NHS in charge of the vaccination programme proved difficult for some participants. One secondary headteacher stated,

Yeah, I would have to look at the numbers ... But [there was] substantially lower uptake [of the COVID-19 vaccination than] for something like MMR or the BCGs, and the cervical cancer one ... there's an extent to which, we're facilitating that service [the routine vaccinations] we provide ... we're a host, so we don't see all the permissions [from the parents], just a list of the students who are taking it.

Opportunities for the successful implementation of COVID-19 preventive measures within school systems and leadership structures

Improved school system flow. When schools reopened, headteachers were mostly able to put physical distancing measures such as one-way systems in place, so long as their school was big and modern enough. In older schools, or in schools where there were space constraints, creative solutions needed to be found. Some headteachers developed a system whereby students stayed in a particular wing of the building for all their activities. An unexpected positive aspect of one-way systems was that they helped some students with special educational needs to feel more comfortable by creating an organised and calm movement system. One secondary headteacher described why the one-way systems in their school were there to stay,

... [we've kept the] one-way systems that we didn't have in place before, because the students prefer it. Some of the SEND students [prefer] the flow of traffic going in one direction rather than face to face. So, there are things that we have kept and there are things that we've learned to take away.

In general, accessibility issues including how easy it was to get to outdoor space. Exit door locations and the overall architecture of the school played a large part in how well one-way systems worked.

Carbon dioxide monitors as learning tools. Carbon dioxide monitors were used by all the schools in this study and allowed schools to better assess how much ventilation was needed. A primary headteacher mentioned that for older age groups some teachers were using the monitors as a learning tool, as they provided real-life data that could then be used in science and mathematics lessons. In all schools, monitors allowed doors and windows to be kept closed to reduce energy costs and keep rooms warmer, with one primary headteacher, stating,

[CO₂ monitors are] really very simple and we've been able . . . to relax slightly, because actually you don't need to have your doors and windows open quite so much, if you're in the green zone.

Face masks being the norm. Starting in January 2022, secondary school students were advised, but not required, to wear face masks in classrooms. Participants said that, overall, students did wear them. In one school, secondary students who chose not to wear masks were given sunflower lanyards (to indicate their exemption) and were asked to sit outside or in areas with higher levels of ventilation, such as by a door or window during lunch hour. As one secondary headteacher stated,

. . . we created a separate area for students who either chose not to wear face masks or wore face masks but wanted to sit with their friends [who weren't wearing them].

For many students, wearing a mask eventually became the 'norm', with another secondary headteacher stating,

. . . It was a bit of a battle with some of our students to start with. But I think as time we went on, it just became it kind of just became the norm, really. and I think the longer something like that goes on for that, the more normal it becomes.

Secondary headteachers felt it was best to follow the guidance on the use of face masks as closely as possible. One headteacher stated, 'We made a decision right at the start that we would just follow whatever guidance was published. So, we'd never deviate from that . . . we never made our own rules up . . .'. Overall, most participants applied an 'advisory' rather than a mandatory approach when asking students, parents and staff to wear masks. This kind of approach was seen to have worked well and maintained open and positive communication across the school community.

Ease of hand hygiene measures. Throughout the COVID-19 pandemic, handwashing and hand-sanitising was perceived by participants as easy to implement and not costly to maintain. One primary headteacher stated,

So, there's three different entrances and they actually get hand gel on the way in, and we've kept all of those. It's hard to know whether that makes a massive difference now or not, but it is a routine that we're in, [and] the children accepted [it] completely.

Vaccination uptake and support. All the secondary school headteachers interviewed had participated in the school vaccination programme and most reported smooth implementation with minimal parental opposition. In terms of uptake, one school reported high vaccine uptake but another reported low uptake among students. The secondary headteacher in the school with high uptake said that witnessing their peers who received the first round of the vaccine remaining healthy afterwards encouraged more hesitant students to become vaccinated, stating,

Once they saw the first tranche of students go through and be fine, there was more buy-in then from the second lot, so I think possibly there was a little bit of uncertainty the first time around.

A few headteachers reported having received push-back from parents opposed to vaccination but felt that communicating with them using a neutral stance and making it clear that government guidelines were being followed worked well.

I think it is a remarkable thing that schools and teachers and support staff in schools do just roll with things . . . and anything that ever came back from any parents, I would always say, you know, this is a safe school, and we are bound by the decisions made by the Department of Education, and we follow what we're told to do . . . I never made any comment about it . . . I didn't believe it was my job [or] really the schools' job to take a position on it . . .

Supportive government measures and services. Some participants said they did not have major issues with the Government's guidelines, feeling that decisions were being made as quickly as possible. As one primary headteacher put it,

Everybody involved in government, whether that be a D of E [Department of Education], the Department of Health, whoever, whatever level it was that was producing the stuff that came to schools. Nobody knew what they were dealing with. It was the first time to everybody. The timing . . . it could never be great.

Local health authorities were felt to be generally helpful in interpreting and contextualising Government guidance and answering health-related questions for schools in areas with high COVID-19 levels. One primary headteacher stated,

[the public health department] works really hard to [not just] interpret what the Government was saying, but how that actually translates in our context. And I just I really did find that useful.

Over time, participants reported noticing an improvement in communication about Government guidelines for schools. One secondary headteacher reported,

I think from that lockdown January 2021, there was much more strategic direction . . . with the exception of the cancellation of examinations, which wasn't . . . it's not for me to criticise the Government but I think, through this winter, we have felt the communication to be strong.

Some participants used external bodies to assist with implementing Government guidance. A primary school headteacher stated,

There's an organisation that schools use called School Bus, where they do all sorts of things like policy and policy examples, and stuff. They also provided a service where they do what they call three-minute reads, so if someone puts out a document or there's a policy, they'll do a three-minute summary of that document . . . Because sometimes, you know, wading through DfE speak can get a bit challenging.

Sustainability of improved preventive practices. Improved ventilation, enhanced cleaning, making face masks optional and introducing one-way systems were reported by some participants as measures that they intended to continue with in the recovery phase. Maintaining these measures was seen as not only good for the physical health of the school community, but also for the mental health of staff and students. Enhanced cleaning and handwashing were felt to reduce the incidence of other infections that can cause disruptions in schools (such as norovirus and seasonal influenza), and will be used indefinitely in some of the schools.

Overall, participants reported that they felt confident in reviewing Government guidance, conducting risk assessments and then communicating plans to their school community at short notice. As stated by one primary school headteacher, 'The measures are pretty well rehearsed now'. Some COVID-19 prevention measures remained in place during the recovery phase, but there were concerns about the ongoing costs of maintaining these efforts, low student attendance, the continued need for a mix of in-person and remote learning, alongside ongoing staff shortages.

Discussion

The findings of this study highlight both the challenges and opportunities encountered in the implementation of preventive measures in schools in England during the later stages of the COVID-19 pandemic. Challenges included staff absences, the complexities of delivering both hybrid and in-person learning, COVID-19 testing requirements, the additional financial burdens (Marchant et al., 2022) associated with preventive measures, and difficulties in adapting government guidance to the unique contexts of individual schools. Opportunities included improved school flow and routines, the use of new technologies to expand learning opportunities, the normalising effect of face coverings, the relative ease of implementing hand hygiene and vaccination support, the benefits of strong collaboration with local public health departments, and the potential sustainability of some preventive practices beyond the pandemic.

The research contributes to the growing body of evidence illustrating the difficulties schools faced in applying rapidly evolving national guidance to their own realities (Bell et al., 2025; Marchant et al., 2022; Sundaram et al., 2021, 2023a, 2023b). While universal guidance was necessary, many headteachers in our study found that the guidance supplied lacked the specificity or flexibility required to make it workable across diverse school contexts, particularly in relation to infrastructure, staffing and/or socio-economic constraints. A key barrier identified was the limited access to technical support available from the bodies issuing the guidance. Furthermore, the frequency of changes, combined with short notice and unclear communication, left some headteachers feeling overwhelmed, a concern echoed in other studies involving school leadership during the pandemic (Bell et al., 2025; McKay et al., 2023; Sundaram et al., 2023a; Sundaram et al., 2023b). These findings are consistent with research from other regions of England, where guidance was described as 'frustrating, impractical and unclear' (Bell et al., 2025: 4). Going forward, more tailored support and clearer advance communication, highlighting what has changed at each update, could improve the ability of schools to respond quickly and effectively. Greater flexibility for schools in how to interpret and implement the central guidance would also be of benefit.

Financial burden was a major concern raised by many research participants. The costs associated with increased ventilation (and therefore heating bills) and enhanced cleaning placed additional pressure on already stretched school budgets. This echoes findings from earlier in the COVID-19 pandemic (Mills and Andrews, 2020). Bell et al. (2025) also noted the cost of staff cover as a major challenge. Without additional funding, schools were often forced to divert resources away from other essential areas, such as student and staff well-being services, raising concerns about unintended longer-term consequences. These services were particularly crucial during the pandemic as highlighted in other studies that documented increased needs for mental health and pastoral support among school communities (McKay et al., 2023; Sundaram et al., 2021). This evidence supports calls for targeted financial support during health emergencies, to help schools absorb the shock of implementation without compromising core functions and responsibilities.

Despite these constraints, this study also documents the creativity, adaptability and resilience of school communities. Many headteachers described opportunities to integrate certain

preventive measures into routine practice, even beyond the pandemic. For example, one-way systems were found to support students with sensory sensitivities, and carbon dioxide monitors were creatively incorporated into maths lessons. These findings align with other studies showing that certain practices, such as an emphasis on handwashing and enhanced cleaning, have been retained as part of schools' routine operations (Sundaram *et al.*, 2023b). There is also evidence from elsewhere that schools took pride in the collective accomplishment of successfully implementing new measures, and that some students thrived in the remote learning environments that suited their learning styles (Kim and Asbury, 2020; Sundaram *et al.*, 2021). Importantly, headteachers in our study stressed the value of the strong, trusting relationships they had developed with local public health departments. This support not only improved confidence in implementing new measures but also helped bridge the gap between national guidance and local application. These findings suggest clear opportunities to foster more sustained partnerships between education and public health systems so as to better prepare for future public health threats.

Study limitations

There are a number of limitations to this study. First, the sample size was small and non-representative. Importantly, however, as a qualitative study, we were not seeking representativeness or generalisability. Instead, we sought to elicit a diversity of views to develop a nuanced understanding of implementation within context. Recall bias, or the inability to recall certain events was likely present in the study as it was noted participants had some difficulty remembering certain time periods or combined different time periods together in their responses. Considering the recruitment challenges encountered, particularly with secondary schools, it is likely that the participating schools had greater capacity, resulting in more favourable outcomes than might have been observed in schools more broadly. We were also unable to validate our findings or explore the issues with school staff members other than headteachers, or with students and parents.

Conclusion

At the time of this study, which was conducted in the 'living with COVID-19' period, participants reported that they had done away many earlier prevention measures but had kept those that were perceived to be easy to keep in place and might be effective against COVID-19 and other easily transmissible infections (handwashing, ventilation, optional masking). Whether or not these measures will be maintained in years to come is an open question. Recommended preventive measures such as carbon dioxide monitors, facemasks and hand washing to reduce the risk of viral transmission were largely accepted and implemented by schools but were accompanied by a heavy staff and resource burden. Many schools felt confident that they could be reactive to future COVID-19 preventive measures with little notice if needed in the future, since they now had communication and protocol systems in place.

Preventive measure guidance and advice was felt to be helpful and was identified as coming from a variety of sources including the national Department of Education, the UK Health Security Agency, Public Health England and local health authorities. Aspects of the guidance would have been easier to implement had there been more time between its release and required actions, but participants recognised that in a fast-moving situation this was difficult. The financial costs of implementing preventive measures were substantial for some schools, and participants were concerned about school budgets in the future. Further research is needed to understand how schools

(including children, teachers and other school staff) adapt to the ‘new normal’ in forthcoming academic years.

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Notes

1. Key workers was a term used in the UK to describe individuals who provided an essential service during the COVID-19 epidemic (e.g. medical professionals, grocery store workers, transport workers, educators)
2. In England, OFSTED is the Office for Standards in Education, Children’s Services and Skills.
3. A legal document that sets out a child’s needs and the support required to help them achieve their educational goals.

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