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For deaths registered weekly in England and Wales see https://www.ons.gov.uk/people populationandcommunity/ birthsdeathsandmarriages/ deaths/datasets/weekly provisionalfiguresondeaths registeredinenglandandwales

For **UK COVID-19 data** see https://coronavirus.data.gov.uk/

For more about **Independent SAGE** see https://www. independentsage.org/

For the Government of Ontario's guide to reopening schools see https://www.ontario.ca/page/ guide-reopening-ontariosschools#section-4

> For more about SAGE see https://www.gov.uk/ government/organisations/ scientific-advisory-group-foremergencies/about

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The UK needs a sustainable strategy for COVID-19

The UK is well into the second wave of COVID-19, with 60051 lives lost to severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection to date, according to provisional data from the Office for National Statistics. Official UK Government data show that cases have been rising exponentially since late August, 2020, with increases across all regions in England in recent weeks.^{1,2} As of Nov 4, 2020, the UK had 25177 confirmed daily cases. These are almost certainly underestimates as between Oct 17 and Oct 23, 2020, England alone had 52 000 estimated daily cases.³ Estimates of the effective reproduction number in England vary between 1.1 and 1.6.1,4

Daily deaths have doubled every fortnight since early September, 2020, with 2067 deaths from COVID-19 in the past week and around 12000 deaths more are likely in the next month-the majority among people who have already been infected. With 12000 patients currently in hospital with COVID-19, health services are close to capacity in many regions. We are seeing more than 1400 daily hospital admissions in England, a single doubling period away from the peak of 3000 daily admissions that occurred in April, 2020, which could be reached within 2–3 weeks.

On Sept 21, 2020, the Scientific Advisory Group for Emergencies (SAGE) advised the UK Government to institute a circuit breaker in England to suppress the epidemic. Instead, the government opted for several weeks of ineffective local tiered restrictions, and cases continued to rise exponentially. Finally, on Oct 31, 2020, the government announced a 4-week national lockdown commencing on Nov 5, 2020.

Lockdowns are last resort measures that reflect a failure of the pandemic

control strategy. They have massive impacts on the population and the economy. To avoid repeated lockdowns and their impacts, we need a sustainable COVID-19 public health strategy. Here, we make seven evidencebased recommendations (a schematic representation is available in the appendix).

First, we need urgent reform of the ineffective private sector run find, test, trace, isolate, and support system. As recommended by Independent SAGE, the current system in England must be integrated with and led by National Health Service (NHS) England, with leadership from local Directors of Public Health, so that local knowledge can facilitate timely contact tracing.⁵ To ensure prompt testing, we recommend bringing together all current test providers in a national COVID-19 testing consortium, under the oversight and management of NHS England.5 To make this system effective, people should be supported to isolate when required (so-called supported isolation) with accommodation, domestic assistance, financial support, and greater resourcing for mutual-aid groups.5

We urge the government to cease extravagant promises about aspirational technologies.⁶ Technologies only deliver health care or save lives when integrated into clinical practice in an adequately resourced health-care system. Focusing on the potential of a technology that does not yet exist, or is not yet widely used in the NHS, might undermine trust in the government and hamper the pandemic response.

Second, we need to support and protect health services so that they can cope with COVID-19, deliver routine care, and manage the significant morbidity from long COVID. Reducing community transmission will be critical for this, but after a decade of underfunding and a huge hit from the pandemic, health services need urgent financial support, adequate personal protective equipment, and measures to increase staff recruitment and retention.

Third, we need to ensure continued and undisrupted education for children of all ages. For this, we need to control community transmission and transmission in educational settings. Schools need clear guidance and support packages, including better ventilation and air filtration, particularly through winter.7.8 We recommend use of face coverings for staff and secondary school children (with exemptions) and encourage mask use among primary school children. Empty facilities could be repurposed to allow face-to-face education with smaller class sizes to minimise transmission. Additional teachers could be recruited, or as SAGE has suggested, a blended teaching system adopted (50% students attend, 50% are taught online in a given week), as has been implemented in Ontario, Canada. For the latter, children must be provided with access to laptops or tablets and broadband internet. If school closures become necessary to control transmission, schools must be supported to move to online teaching to ensure all children can continue their education, and families must be provided with practical and financial support. Universities have been a major hub of community transmission and should move to online teaching where possible, with students supported to return home safely with government support and quidance.

Fourth, we need comprehensive economic support packages for the population over the coming month, especially for deprived communities. Ethnic minority groups will need targeted support as they are at higher risk due to racism, stigma, poor housing, key worker roles, and multigenerational households. Specific measures are necessary to protect children and women living in poverty and those at risk of domestic violence.

Fifth, we need a robust regulatory system and financial support to help

employers and businesses make their facilities safe, and to ensure that facilities meet the necessary safety standards to remain open.⁹ Occupational safety regulations need to be supported by anti-racism and equality laws robustly applied to employers. This will require the restoration of an adequate health and safety inspectorate.

Sixth, we need coordination across the UK and with continental Europe. The regional governments of Scotland, Wales, and Northern Ireland have attempted to lead with more effective responses but have been hampered by poor national strategy. We need a joint strategy with Europe, including coordinated travel restrictions, data sharing, interoperability of COVID-19 tracing apps, and use of EU passenger locator forms. The UK would benefit from joint development, procurement, and validation of rapid tests, medical kits, and fair vaccine allocation protocols.

Finally, we need clear and consistent public health messaging. The lack of this has allowed mistrust to thrive. The government needs to urgently restore public trust and confidence. It must reinstate daily briefings and be open, honest, and transparent about where we are. It must admit to and learn from mistakes, not overstate its capabilities and achievements, and must treat the public as equal partners, working with communities to develop effective health promotion strategies. The government must clearly communicate that protecting school education, routine healthcare provision, and the economy are all inextricably tied to controlling COVID-19,¹⁰ and must stop conveying these as competing objectives.

Controlling the spread of COVID-19 is possible. We need to learn from the mistakes of the past 9 months, lest we find ourselves here yet again.

While this Correspondence is about the UK situation, COVID-19 is a global pandemic and our collective responsibility. We are therefore writing as a concerned group of international scientists from the UK and other countries and, regardless of our current country of residence, many of us have strong personal connections to the UK.

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