People infected with the new variant of SARS-CoV-2 discovered in southeast England (known as B.1.1.7 or VUI 202012/01) are more likely to have a cough, sore throat, fatigue, or myalgia than those infected with other variants, the Office for National Statistics has reported.

The ONS report, which looked at cases in England from 15 November to 16 January, also showed that people with the new variant are less likely to lose their sense of smell or taste. There was no evidence of difference in gastrointestinal symptoms, shortness of breath, or headaches.

These findings have prompted some doctors to call for the official symptom list to be reviewed and potentially expanded—something that has not happened since last May. The current advice is that people be tested if they have a high temperature, a new, continuous cough, or a loss or change to their sense of smell or taste.

Richard Tedder, senior research investigator in medical virology at Imperial College London, said that the new data on symptoms could explain why B.1.1.7 is more transmissible. “If there is an increased amount of coughing and perhaps sneezing associated with a particular variant virus, these two activities can markedly increase the amount of virus which is shed into the environment, thereby making it ‘more infectious,’” he said.

In a letter published in The BMJ, London GP Alex Sohal said people were “mostly unaware of the significance of mild symptoms” that could be covid-19 and called for the UK to change its case definition and testing criteria to include such symptoms (BMJ 2021;372:n283).

“Tell the public, especially those who have to go out to work and their employers, that even those with mild symptoms (not only a cough, high temperature, and a loss of smell or taste) should not go out, prioritising the first five days of self-isolation when they are most likely to be infectious,” she wrote. “Test more of those with symptoms, identify more infectious cases, and reduce spread.”

A Department of Health and Social Care spokesperson said an expert, independent scientific group kept the list of symptoms under constant review. They acknowledged that covid-19 had a much longer list of symptoms than the ones on the list for testing but said those symptoms captured patients most likely to have covid-19.

Elisabeth Mahase, The BMJ
Cite this as: BMJ 2021;372:n288

Doctors and scientists fear many people with sore throats, fatigue, and myalgia are transmitting infection because they do not recognise them as symptoms of B.1.1.7

Call to update symptoms for new variant

The BMJ
Children’s mental health services are “nowhere near sufficient” for covid

The damage caused to children’s mental health by the pandemic could last for years unless services are improved, the children’s commissioner for England has warned.

Anne Longfield (left) said in her annual report that provision of mental health services was “still nowhere near sufficient to meet children’s needs” and that the government must acknowledge this and “go beyond existing commitments with ambitious new targets to increase access to care.”

She also emphasised that some clinical commissioning groups had “consistently deprioritised children’s mental health, ignored the needs of children, and failed to meet the expectations of NHS England” and as such should now “face consequences.”

It is estimated that a sixth of children in England have a probable mental health condition, and the number of children being referred for help is increasing. In 2019-20 this rose to 538,564, an increase of 35% from 2018-19 and up 60% from 2017-18. But the number getting treatment is not meeting demand. In 2019-20 only 391,940 children received treatment, just a quarter of those estimated to need it. Of the children who did get access to services only 20% started treatment within four weeks.

Elisabeth Mahase, The BMJ Cite this as: BMJ 2021;372:n258
**MEDICINE**

**Workforce**

**Science and medicine most respected professions**
Science came top of a list of professions that adults would be happy for their child to pursue, closely followed by medicine, found a YouGov survey of over 22,000 people in 16 countries. Among British respondents, four fifths (82%) backed a career as a scientist for their child and 80% supported a medical career.

**Safety at work**

**Ethnic minority doctors feel unsafe at work**
Less than a third (28%) of doctors from black, Asian, and other ethnic minority backgrounds told a BMA survey they felt fully protected from the risk of SARS-CoV-2 infection in their workplace, while 72% said they felt only partly or not protected at all. In comparison, 60% of white respondents said they felt fully protected. A third (29%) of ethnic minority doctors said they had not been risk assessed for the virus or that assessment needed updating. Chaand Nagpaul, BMA chair of council, said, “We should not have a situation where health and social care workers—BAME or otherwise—are feeling unsafe or at risk from death or disease in their workplace.”

**Study reveals wide health disparity in England**

Some people from ethnic minorities have much poorer health than white people—which can be equivalent to being 20 years older than they are, a large observational study published in *Lancet Public Health* found. Lead author Ruth Watkinson, from Manchester University, said, “We need decisive policy action to improve equity of socioeconomic opportunity and transformation of health and local services to ensure they meet the needs of all people.”

**Bereavement**

**One in eight people have lost a loved one to covid**

A YouGov survey of 2029 people found that one in eight people in the UK has lost a family member or friends to the virus. More than half (57%) had either tested positive for covid or knew of a friend or relative who had, and 27% knew someone who had become seriously ill.

**Infection**

**Trust pays £7m in baby brain damage case**
The NHS agreed to pay more than £7m in an out-of-court settlement for failing to properly treat a newborn baby’s eye infection, leaving him with permanent brain damage. The baby’s GP had referred him to the hospital, where a junior doctor diagnosed conjunctivitis but failed to take swabs to test for infection. The baby was given a diagnosis of encephalitis a week later.

Cite this as: *BMJ* 2021;372:n301

**ALCOHOL**

A total of 5460 deaths related to alcohol specific causes were registered between January and September 2020, 16.4% higher than in the same period in 2019 [ONS provisional data]

**SIXTY SECONDS ON... TIKTOK DOCTORS**

**WE’RE NOT TALKING ABOUT CLOCKS?**
No, we’re talking about the video sharing platform TikTok. The app has gained huge popularity during the pandemic, with more people at home and in search of distraction.

**DO I NEED TO OFFER APPOINTMENTS OVER TIKTOK NOW?**
No, you’re safe—for now. Some doctors are, however, using the platform to provide health related information to the public, on both covid-19 and non-covid related matters. There are videos on everything from bed capacity in intensive care units, and hospitals running out of oxygen, to why we sneeze and how long it takes to become a doctor.

**SOUNDS TIME CONSUMING...**
It certainly can take time to plan and film videos, but most of the doctors on the app provide the content on top of their patient facing work. The real struggle is not losing a whole afternoon swiping through it all.

**IS IT WORTH IT?**
The increasing popularity of the app has made it susceptible to misinformation, especially concerning covid-19. We know that false news travels more rapidly than real news, and we’ve also seen the effect of conspiracy theories in the form of protests and people breaking into covid wards. TikTok doctors are trying to combat this by providing people with a reliable source.

**HAVE ANY DOCTORS HIT THE BIG TIME?**
Yes, there are several very popular doctors from around the world. In the UK, Nottingham medical student Ethan Smallwood has gained 185 500 followers and 3.1 million likes. In his most popular videos Smallwood explains why armpits smell but also who will get priority access to covid vaccines. In the US, ophthalmologist Vicki Chan has 173 700 followers and 8.5 million likes. She has covered everything from Los Angeles running out of hospital beds to what different white coats mean to US doctors.

She even got vaccinated on TikTok. In South Africa, primary healthcare doctor Siyamak Saleh, who has 565 000 followers, has videos on long covid, vaccine ingredients, and myth busting content like whether eating pineapple induces labour.

Elisabeth Mahase, The BMJ
Cite this as: *BMJ* 2021;372:n286
AstraZeneca vaccine approved in EU with no upper age limit

The European Medicines Agency authorised AstraZeneca’s SARS-CoV-2 vaccine for use in all adults aged over 18 on 29 January, just days after German newspapers suggested the vaccine would be limited to adults aged under 65 because of poor efficacy in older people.

The EMA said, on the basis of data from four clinical trials conducted in the UK, Brazil, and South Africa, that the vaccine was safe and effective at preventing infection. The two doses can be given between four and 12 weeks apart. Safety was shown in all four studies, which included around 24,000 people, but the efficacy decision was based on results from only two of the trials because the others had fewer than six cases of covid-19.

Also, only data from patients who received two standard doses of the vaccine between four and 12 weeks apart were included in the final efficacy analysis. This showed a 59.5% reduction in the number of symptomatic covid-19 cases in people given the vaccine.

The EMA’s Bruno Sepodes said only 13% of trial participants were aged 65 or above. “Protection in this population is expected based on their immune response and results in younger participants,” he said. “The exact level of protection cannot be estimated for the time being.” But he emphasised, “There is no reason to expect this would not have some level of efficacy in that age group.”

An EMA committee will further assess efficacy as the data emerge. In particular, Sepodes said, it will evaluate a US trial that includes a “substantial cohort of elderly people.”

Germany will not offer the vaccine to adults over 64 years because of insufficient data, while Italy has authorised it for all age groups but recommended other vaccines be used in people over 55.

Ingrid Torjesen, London
Cite this as: BMJ 2021;372:n295

Variantswill follow vaccine nationalism, WHO warns

Officials at the World Health Organization have voiced concern at “vaccine nationalism” that could increase the risk of the coronavirus mutating further, after a week long row over a shortfall in EU supplies of vaccines.

Bruce Aylward, senior adviser to WHO’s director general, said, “Anything that restricts the ability to get these products out will affect our ability to control this disease and prevent variants emerging. The world is going to have to collaborate to get out of this.”

Vaccines alone were not the solution, however, said WHO technical lead Maria Van Kerkhove. Test and trace measures, social distancing, mask wearing, and personal protective equipment will still be essential to control the virus, she said.

Meanwhile, WHO director general Tedros Adhanom Ghebreyesus called on countries that had vaccines left over after vaccinating their own priority groups, such as health staff and people at risk of serious illness, to share them with others, under the Covax programme. “Health and care workers have been on the frontlines of the covid-19 pandemic but are often underprotected and overexposed. They need vaccines now,” said Tedros.

London and Brussels row

On 30 January AstraZeneca tried to diffuse the row between Brussels and London over vaccine supplies by promising to increase its deliveries to the EU by nine million doses by March. This will bring the total number of vaccine doses from the company to 60 million, half of what was expected by this date. The EU has a deal with AstraZeneca for 300 million doses altogether. The aim was still to vaccinate 70% of adults in the EU by the end of summer, said EU commissioner Ursula von der Leyen.

The crisis began as vaccine production levels fell in the EU. Pfizer hit problems at its plant in Belgium, affecting supplies in

Novavax vaccine is effective against UK and South African variants

The vaccine produced by the US biotech company Novavax is 95.6% effective against the original variant of SARS-CoV-2 but also provides protection against the UK variant B.1.1.7 (85.6%) and the south Africa variant B.1.351 (60%), preliminary trial data show.

Interim results have been released from a phase III trial carried out in the UK with more than 15,000 participants aged between 18 and 84, including 27% over the age of 65. The trial tested two doses administered three weeks apart and reported 62 symptomatic cases of covid, of which 56 were in the placebo group and six in the vaccine group. Of the 62 cases, only one was severe (in the placebo group), and 32 were with the UK variant.

A phase II trial is also ongoing in South Africa with 4400 volunteers, in which 29 cases have been seen in the placebo group and 15 in the vaccine group. Preliminary data from 27 of these cases found 93% (25) involved the South Africa variant.

Novavax began the rolling submission process with the UK Medicines and Healthcare Products Regulatory Agency in January. The UK has secured 60 million doses. Meanwhile, Johnson & Johnson has reported its one dose vaccine is 66% effective at preventing moderate to severe illness 28 days after vaccination, although the announcement lacked key details. The UK has agreed a deal for 30 million doses.

Elisabeth Mahase, The BMICite this as: BMJ 2021;372:m296

A deal for 30 million doses.

The phase III trial, carried out across three continents, included 43783 people. A third (34%) of participants were aged over 60, and 41% had comorbidities associated with an increased risk of severe covid-19
Spain, while AstraZeneca, a UK-Swedish company, said it was having problems meeting planned deliveries from its plants in the Netherlands and Belgium. However, AstraZeneca was already producing vaccines from its two UK plants to meet its contracted target with the UK government. And it was this manufacturing supply line that the EU wanted its 27 member states to access. If not, the EU would permit its member states to restrict the supply of any of their vaccines to the UK.

While details of the UK government contract with AstraZeneca are confidential, it would seem to contain a clause that protects the supply of vaccines that are pre-ordered under contract for the NHS from being diverted elsewhere. AstraZeneca chief executive Pascal Soriot said, “The contract with the UK was signed first and the UK, of course, said ‘you supply us first,’ and this is fair enough. This vaccine was developed with the UK government, Oxford, and with us as well. As soon as we have reached a sufficient number of vaccinations in the UK, we will be able to use that site to help Europe.”

Lynn Eaton, London
Cite this as: BMJ 2021;372:n292

Surge testing for South Africa variant begins in England

What is being deployed? The government announced this week it was rolling out extra surge testing and sequencing capacity to eight UK locations where community based infections of the SARS-CoV-2 variant first identified in South Africa (known as 501Y.V2) were found that could not be linked back to international travel. To date, 11 cases of this kind have been identified.

How will it work? From Monday 1 February everyone over 16 living in the eight postcode areas was being strongly encouraged to take a covid-19 test, even if they did not have any symptoms. Mobile testing units will be deployed to offer PCR swab testing to people who have to leave their home for work or essential reasons, and additional home test kits will be supplied.

Where are the locations? Surge testing is being targeted to the postcode areas where the 11 cases were found: EN10 in Hertfordshire; W7, N17, and CR4 in London; PR9 in Lancashire; ME15 in Kent; GU21 in Surrey; and WS2 in the West Midlands.

Who is running it? Local authorities have been put in charge of overseeing the scheme. People with symptoms are being told to book a test in the usual way, while those without symptoms are advised to visit their local authority website for information.

What is the purpose of the surge testing? Any positive test results found in the eight areas will be sequenced to identify any further spread of the South Africa variant. The intention is to monitor and suppress the spread of the virus and to gain a better understanding of the new variant.

How were the 11 cases identified? Large scale and rapid whole genome sequencing of virus samples, carried out by the Covid-19 Genomics UK consortium in partnership with Public Health England, found the cases. Public Health England has identified 105 cases of the South Africa variant since 22 December, but so far only the 11 could not be linked to foreign travel.

Are there likely to be further cases? While the UK is conducting more genome sequencing (at around 10% of positive test samples) than any other European country except for Denmark, this still leaves ample room for undetected cases. “There is a high probability that further local cases are in circulation,” said Rowland Kao, professor of veterinary epidemiology and data science at the University of Edinburgh.

Gareth Iacobucci, The BMJCite this as: BMJ 2021;372:m305
Unequal cost: vaccine prices around the world

A string of revelations about vaccine prices has focused attention on a practice considered normal in the drug industry but often frowned on elsewhere: charging different prices for the same product.

South Africa’s government found itself on the defensive this week after a senior health official revealed that 1.5 million doses of the Oxford and AstraZeneca vaccine just purchased for use among health workers would cost $5.25 (£3.84) a dose, more than twice what the EU is paying at $2.15.

The EU figure is known because Belgium’s budget secretary inadvertently revealed the EU’s negotiated prices for every major vaccine on Twitter last month. The EU had undertaken to keep the prices confidential in return for discounts.

South Africa’s deputy director general of health, Anban Pillay, said his government had been told that $5.25 was the set price for a country classified by the World Bank as upper middle income. “The explanation we were given for why other, high income countries have a lower price is that they have invested in the [research and development], hence the discount,” he added.

That principle has also been applied to the biggest players. The EU financially supported the development of the BioNTech and Pfizer vaccine and has obtained a lower price per dose ($14.70) than the US ($19.50). Moderna’s vaccine development was subsidised by the US government and will cost it about $15 a dose, while the EU is paying $18.

The Oxford-AstraZeneca vaccine is much cheaper, although neither the UK nor the US can match the EU’s $2.15 deal: it is thought they will pay about $3 and $4, respectively, a dose.

Johnson & Johnson
Johnson & Johnson’s single dose vaccine, which last week was reported as 66% effective, is also much cheaper, costing the EU $8.50, with each dose going twice as far as the other brands, as it is a single shot vaccine.

AstraZeneca and Johnson & Johnson have committed to not making a profit from the pandemic, while Moderna and Pfizer have not. AstraZeneca reserved the right, however, to declare the pandemic phase over and take profits from later sales.

Vaccine prices are only one factor in the cost of immunisation campaigns. Of the £11.7bn the UK expects to spend on its vaccination programme, £2.9bn buys vaccines, securing 267 million doses of five types, according to the National Audit Office.

Even the priciest vaccines repay their cost many times over in economic growth. Affluent governments could well be tempted to bid higher if supplies tighten.

Israel, which is on course to vaccinate all its citizens before any other country—having denied responsibility for vaccinating the Palestinians of the Occupied Territories—this month acknowledged paying $23.50 a dose on average to Pfizer and Moderna to obtain early shipments. Even at this price, vaccinating the population costs the economy only as much as two days of lockdown. Uniquely, Israel agreed to give Pfizer anonymised health data from its citizens as part of the deal.

For South Africa, more troubling than the cost has been an inability to secure enough vaccine. It planned to vaccinate 40 million of its 58.5 million people but has only enough vaccine on order for 10 million.

NHS will prioritise second doses for four groups most at risk, says Stevens

The NHS will prioritise second doses of covid-19 vaccine of the over 70s, clinically extremely vulnerable people, and frontline health workers before it moves on to first doses for other groups, the chief executive of NHS England has said.

The government’s target is to vaccinate all care home residents and staff, all over 70s, all clinically extremely vulnerable people, and all health staff with a first dose by the middle of this month and to offer all UK adults a vaccine by autumn.

Gives evidence to MPs on 26 January at the joint inquiry by the health and science select committees into lessons learnt from covid, Simon Stevens (below) was asked whether he expected the NHS to slow down the rollout of the first dose to other groups (see box) from March, when large numbers of people in the four groups most at risk will be due for their second dose of vaccine.

He said, “First and foremost, those second doses have got to be delivered. So if [we look 12 weeks on from when the first doses were delivered, we know that has to be the first call on the vaccine available in those weeks. As we get increasing clarity as to what the available supply will be, that will shape the speed at which we can advance into those other groups.

“My expectation is that we will do two things simultaneously as we move into working age adults. The first..."
Covax, the World Health Organization’s vaccine distribution programme, has set aside 600 million doses for Africa, enough to vaccinate a quarter of the continent’s 1.2 billion population. But South Africa’s status as an upper middle income nation makes it ineligible for Covax assistance.

Surplus doses

At a 26 January virtual meeting of the World Economic Forum, South Africa’s president, Cyril Ramaphosa, called on rich nations to give up surplus doses. On 28 January the African Union of 55 countries announced it had secured 400 million extra doses of the Oxford-AstraZeneca vaccine, bringing its total order to 670 million. South Africa is likely to be a key beneficiary. Africa now has enough vaccine ordered to vaccinate half its population. The UK has ordered enough to theoretically vaccinate about three times its population.

is that, when we’ve got a lot more supply, we will be able to make vaccines available in many different outlets. At the same time, the larger vaccination centres that we’ve established will be going all guns blazing for increasing numbers of people. But right now, supply is constrained.” Stevens was also asked how the NHS would be handling regional variation in delivery, after recent advice from officials to redirect available supply to areas that still had large numbers of patients in the highest priority cohorts awaiting first doses.

Fair distribution

He told MPs, “We’re wanting to do it in a fair way so that each part of the country has enough vaccine to have been able to offer all of their 70 year olds and above, the high risk patients, and their staff that first vaccine [dose], which is why, for the time being, we’re on this so called ‘push’ model for fairness.

“...the front line. We began by writing to labs and businesses—the donations came flooding in and we had 100 volunteers within a week. To date we’ve circulated around 380 000 items of PPE.

“More recently we started thinking about something more sustainable. In the US, they have guidelines for reusables and for decontamination. Why don’t we have guidance here?

“The government says there are not enough FFP3 masks to go around. Our solution? Look at reusables. Anyone who’s facing covid positive patients more than six hours a day should be thinking about reusables. Intensive care units are very well facilitated, but the forgotten few are staff in theatres and those in emergency departments, covid-19 positive wards, and acute medicine wards that see admissions.

“As a charity, our fundamental mission is to protect workers. We’re hoping we can get the backing of the medical bodies and unions. We’re grateful to be working closely with the Doctors Association UK. Changing culture and normalising reusables are the main things we want to do. There is almost a stigma associated with their use.

We’re also working with manufacturers to see if we can innovate and help them make their masks—which have been geared to the construction industry—more appealing to the healthcare industry.

“We’re hoping trusts will pick this up so we can trial getting people trained up and fit tested for reusables, and then have regular auditing feedback from users on how we can improve compliance, on decontamination matters, and on how we can streamline. Having a centralised stamp of approval is what everyone is looking for, so the legal concerns everyone has will hopefully disappear. The main inertia is that no one is willing to put their stamp on it to say, ‘This could work.’”

Jasmine Ho is a clinical research training fellow in tissue engineering and regenerative medicine at University College London.
This outbreak of COVID-19 last month, China is constructing a quarantine camp to house around 4000 people.

The quarantine centre in Shijiazhuang, a city 300 km south of Beijing, is designed to house close contacts of people with confirmed COVID-19. China’s state television reported that each of the site’s 4156 furnished rooms will contain an en suite bathroom, Wi-Fi, and a television.

Construction of the camp in the capital of Hebei province began on 13 January, and the first section was ready for use a week later. The speed is reported to have arisen from a determination to contain the outbreak before this month’s Lunar New Year celebrations, during which hundreds of millions of people are expected to travel to visit family members.

On 1 February, health authorities in China reported 33 new locally transmitted cases, one of which was in Hebei, the lowest level in more than three weeks.

Since COVID-19 emerged, the country has reported 89,000 cases, while the official death toll is under 5000.

Alison Shepherd, The BMJ

Cite this as: BMJ 2021;372:n307
Averting market failure in care homes

We need public and political consensus about long term options

Our population is not ageing well. The proportion of older people affected by medium to high disability in England is increasing, but social care cannot meet their needs and seems curiously separate from the NHS. It took a global pandemic for data on care home capacity to be collected weekly and shared with England’s regulators and commissioners.1

If we assume that half of older people with medium to high disability are cared for in their own homes, by 2025 an additional 71 000 care home places could be needed.2 Some 5500 organisations operate care homes3; 90% of these are private providers, including some charities. The five largest chains in England provide only 15% of places. Around 70% of providers have three or fewer care homes.4 Most care homes are small enterprises run by owner managers.

Threats to sustainability

About 3700 care home places (of a total of around 400 000) have been lost over the past decade. Many care homes are not accepting residents funded by local authorities because fees cannot cover costs.5 Those taking only self-funders are mostly in affluent areas and are likely to remain sustainable and even generate super profits. Local authority payments alone are insufficient to maintain good care homes in good condition.6

Sustainability is subject to two further threats.7 In homes with mixed funding, self-funders pay more than local authority funded residents, effectively subsidising them.8 If self-funders realise this, they may seek fee reductions. Because capital and savings can shrink quickly, some care home residents drop out of self-funding to become local authority funded (payer shift). Local authorities, such as Worcestershire, are already modelling the effect of payer shift on their budgets.9 This matters to the NHS—some of the loudest calls for social care reform come from the health service.8 Inequalities in access to social care are increasing, with an estimated 1.5 million older people having an unmet care need.9 Limited availability of social care affects hospitals by fostering delayed transfers.10 Lack of social care produces excess disability and distress that often presents in primary care. The public is surprised that a fragmented system exists.11 While some see the “catastrophic” costs of paying for their own (or parents’) care as deeply unfair, most are willing to make some contribution.11

Without reform and direction, care quality will continue to deteriorate

A tipping point is approaching.12 To avoid care home shortages, local authorities need to pay higher fees. This will necessitate public and political consensus about long term options: market management, franchise development, or alternative models of care. Buying out care homes (nationalisation) might stabilise some but would be expensive—the market is worth £17bn.

NHS franchise

The NHS could enter the care home market, perhaps by promoting a franchise like that underpinning general practice and offering care homes support for training and infrastructure. General practice and care homes are different entities but are community based and focused on local needs. Alternatively, investment in home care, provision of hospital at home, and greater support for family carers might lessen reliance on care homes.

The recent government spending review promised to issue proposals for reform in 2021, adding to the 17 policy documents on social care that have been published since the turn of the century.13 In January 2021 the government published a mental health white paper and seems confident that it can get it into legislation in the current parliament. But social care seems stuck on the money questions at a time when connections between care homes and the NHS have never been so important and when there may be more goodwill about sharing budgets than ever before.

Ironically, it may be covid-19 that makes the difference, since it will become increasingly evident that without reform and direction, care quality will continue to deteriorate. Care homes are in the news, and the government should not postpone rational changes to the funding of long term care.

Cite this as: BMJ 2021;372:n118

Find the full version with references at http://dx.doi.org/10.1136/bmj.n118
Increasing recruitment into covid-19 trials
An urgent priority for the NHS

Since March 2020, UK researchers have established over 70 urgent public health studies to investigate potential treatments, vaccines, and diagnostic tests for covid-19. NHS hospitals have had a vital role in delivering these studies and the results are now informing practice worldwide. In June 2020, the Recovery trial found that dexamethasone improved survival among covid-19 patients on ventilation by 36%. The NHS immediately made it the standard of care, and it is estimated to have averted 12 000 deaths in the UK up to the end of 2020 and 650 000 worldwide.

Trials save lives. They cannot do so, however, without the participants on which they depend. Recruitment of patients with covid-19 to UK clinical trials must now be prioritised. Although vaccines are a cause for optimism, the pandemic remains a national and international emergency. It is imperative efforts continue to find new, safe, and effective treatments to lessen its severity and impact, in the UK and globally.

Variable recruitment
Enrolment into Recovery, which passed 20 000 patients in December, has varied between 7% and 10% of hospital admissions for covid-19. Recruitment rates vary substantially across the NHS, however, leaving plenty of opportunity to improve participation. While some hospitals (such as trusts in Leicester and Hartlepool) have recruited 25-50% of patients admitted with covid-19, others have recruited less than 5% of admissions, and some less than 2%.

Recovery continues to evaluate convalescent plasma, monoclonal neutralising antibodies (REGN-COV2), aspirin, and colchicine. In the case of convalescent plasma and REGN-COV2, it is important not to miss benefits that might be confined to patients with early disease or those unable to mount a good antibody response themselves. Doubling the rate of recruitment would halve the time taken to get clear answers to important questions about these treatments.

The Remap-Cap trial,4 based in intensive care units and designed to evaluate treatments for the sickest patients, has shown that the corticosteroid hydrocortisone has similar effects on mortality to dexamethasone. The trial recruits around 20% of all patients in intensive care units but also has variation among hospitals and therefore scope for further improvement.

The largest community based covid-19 trial in the UK, Principle,5 evaluates treatments to prevent hospital admission or transmission, including doxycycline and inhaled budesonide. Recruitment has been slow because of the disruption of primary care during the first wave, reaching 2000 participants in December. To aid recruitment Principle now allows patients to participate remotely regardless of the location of their registered general practitioner.

Although we acknowledge the extreme pressure currently felt throughout the NHS, all hospitals, clinics, and general practices should do all they can to make trial recruitment a priority, advancing efforts to improve survival and recovery from covid-19.

All eligible patients should be offered the opportunity to take part in a clinical trial, whenever feasible, and research should become part of the clinical pathway for patients with covid-19 in the NHS.

Individual trusts and university partners could support recruitment in several ways. These include online and text messaging of trial requirements and locations to patients, clear signposting to further information, access to trial recruitment advice for clinicians and patients, and local clinical and research champions who could coordinate participation.

Transform evaluation
This crisis provides an opportunity to embed large scale randomised trials at the heart of NHS care. Such an approach could transform the way the NHS evaluates and deploys treatments for common chronic diseases and emergencies, including heart disease, diabetes, degenerative musculoskeletal disorders, cancers, and seasonal influenza.

The Recovery trial has shown that such approaches can be tailored to existing drugs (dexamethasone, hydroxychloroquine) as well as novel treatments (REGN-COV2). Delivering similar trials across the country would increase participation of both patients and NHS staff, and improve the robustness and generalisability of the results. Engagement from all NHS hospitals is vital in achieving this goal.

Cite this as: BMJ 2021;372:n235

Find the full version with references at http://dx.doi.org/10.1136/bmj.n235
The perils of pillow talk with the other doctor in your life

Being in a relationship with another medic has its perks—but also its pitfalls. Jessica Powell explores how to successfully navigate them.

It’s tempting, isn’t it? If you’re a couple of doctors, it’s hard to resist getting home from a shift and talking non-stop. “Do you think I got that diagnosis right? What do you think of the latest from Hancock?” And as social distancing has dragged on and you’ve seen fewer friends and family who don’t know their NICU from their NSAID to dilute or distract, you might have found medic chat has dominated more than ever.

But consultant psychologist Marc Hekster at the Summit Clinic in London says that doctor couples (and, of course, doctors in a couple with other healthcare professionals) should be wary of letting work talk take over. “When you have two doctors, they are completely steeped in medicine and so it becomes really important to be able to distinguish between work life and home life,” he says. That is: to behave as a couple, not as colleagues.

“From a psychology point of view, it’s about making unconscious habits conscious and having a disciplined approach to pulling back from them. For example, there might be an agreement that when you’re preparing dinner you’re not talking about work,” Hekster says.

Putting a buffer between work and home time can also help—something that surgical registrar Caroline Baillie has found useful. “I have quite a long drive home from work, so I use that time to wind down. I often talk to my sister or listen to podcasts,” she says. All of this means that, by the time she gets home to her GP husband, she doesn’t feel the same need to offload about every detail of her day.

Anaesthetic registrar Mark Parson says that having different interests from his wife, Felicity Pilkington, also an anaesthetic registrar, outside of work might also be an advantage: “She’s a big social person, and I’m probably less social, but I have lots of mini projects on the go at any one time, so it means that other things filter in beyond medical stuff.” Pilkington thinks that having non-medic friends is a massive bonus, as it jumpsstarts them into talking about different things, too.

It’s still good to talk

Of course, sharing how your day’s gone—your worries and successes—with your partner is important. But Dawn Kaffel, couples therapist at Coupleworks, says that, in her experience of working with doctor couples, she finds they sometimes get into endless minutiae but not emotions: “I think what is difficult for this type of couple is the emotional connection. Doctors, through their training, learn not to get overly emotional and deal with the problem in front of them. How do you make sure your emotions are in check one minute and the next be emotionally connected to your partner? It’s not easy to make that switch.”

This resonates with Baillie: “You do get hardened by some things at work—when you tell people awful news, you can’t be in tears. But maybe that does mean that even with your partner you don’t talk about things—it feels easier to try and be professional. Without some persuasion from my husband, I can find it hard to talk about difficult work things, like when I’ve had patients that have been in upsetting situations.” Yet she feels it’s beneficial to be open: “If you’re not, things on your mind probably influence your ability to relax and move on. And sometimes you don’t realise it, but those things are having an impact on your mood and how grumpy you are with your partner.”

Kaffel recommends checking in with each other every day. “In doctor couples there’s often the assumption that ‘we know’ what each other is going through. But this can often lead to them feeling their partner takes them for granted. Plus, there can be some sort of expectation that doctors should be able to cope, so they can feel shame if they don’t feel they can.” Explicitly asking how each other is feeling is crucial, she says.

She recognises that this comes with an additional challenge for many doctors: “You’re having so many relationships with other people—maybe seeing 20 patients a day—that when you come home you’re tired of talking to people.”

This also rings true with Baillie: “Sometimes when you’ve had all day in a clinic where you’ve been talking to patients, listening to their problems, and trying to solve them I guess . . . it sounds really bad . . . but you’re less inclined to want to chat about your partner’s day. So I actively remind myself that that’s really important.”

But Hekster, who’s a spokesperson for the British Psychological Society,
It becomes really important to step out of doctor mode and just listen
Marc Hekster

notes that what a partner needs from you is different from a patient: “Doctors are all about fixing and repairing and making everything all right. But sometimes with their partner it’s about just listening. Sometimes their partner just needs to splurge for a few minutes. It becomes really important to step out of doctor mode and just listen.”

Make the heart grow fonder
One of the biggest challenges facing doctor couples is getting quality time together when both are doing demanding jobs, often with antisocial hours. “Spending time together is a huge challenge at the moment,” says Pilkington. “Because of juggling our different rotas and childcare for our toddler, we basically have to take a lot of our days off when the other person is working. Plus, we each work two weekends in every four, so it’s hard.”

Kaffel’s answer to this is again about explicitly asking what each other needs to get through. “I spend quite a lot of time working with couples thinking about what they would like their partner to do to make them feel there is more of an emotional connection. And it’s usually just little everyday things like, ‘I just need you to kiss me good morning’ or ‘send me a text during the day.’ It’s about helping clients to feel more comfortable with sharing what they need from their partner in a warm, loving way.”

Hekster is a fan of the 15 minute date: “Actively schedule time with each other to reconnect, uninterrupted, even if it is just for 15 minutes. Sometimes just taking a moment together, in the epicentre of the storm, can be enough.”

Baillie notes that an unexpected advantage of having limited time together is that it can make you really appreciate the moments you do have. “If I have a weekend on call, we’re often like, ‘OK next weekend shall we do something nice.’ So I feel like we try to make the most of the time we have.”

Healthy competition
Another peril of being in the same profession is that it’s almost inevitable that one of you will progress further or faster than the other. Parson notes that, despite starting out on the same career trajectory, his wife has raced ahead of him—passing exams faster than him. But he says that he’s been able to square this in his mind by recognising that they’re very different people with different journeys. “I’ve never been someone who just saunters through exams, so it wasn’t unexpected. It helps that we don’t see it as a race. Not putting pressure on yourself is probably a key thing. It’s like that phrase: life’s a journey, not a destination.” Pilkington agrees that seeing the big picture helps them—she got ahead by passing exams faster than her husband, but he’s now going to catch up with her because she’s been on maternity leave.

Kaffel thinks this is a healthy approach. “Usually in the medical profession there is time to plan, as it’s quite a structured career path. So as long as you keep the lines of communication open, you can discuss how it’s going to be one person’s turn this year, and the other’s the next, for example.”

Pilkington admits she can feel a twinge of jealousy when her husband has a success that she hasn’t. “You have to recognise that’s a human feeling and it doesn’t mean you’re not happy for them. We talk very openly about that—acknowledging it makes it seem like less of a big deal.” This is exactly what Hekster recommends couples should do to stop tensions mounting.

And the good news, as Kaffel notes, is that there are massive perks to being in a double doctor couple: “I think the constant thread is that their relationship is stronger because you’re with a partner who knows there’s long hours, there’s sleepless nights, there’s shift work, you’re dealing with critical patients, with death, loss. “It helps to have somebody there who understands what you’ve been through because they’ve been through it themselves.”

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Cite this as: BMJ 2021;372:m4970

KEEPS IT CONFIDENTIAL
While an after work rant to your other half can feel good, it’s important to keep patient confidentiality in mind. A spokesperson for the GMC says: “Patient confidentiality lies at the heart of the doctor-patient relationship. When speaking about a particular case, doctors know they have a duty of confidentiality, and we trust doctors to use their professional judgment.”

The GMC guidance Confidentiality: Good Practice in Handling Patient Information is at gmc-uk.org.
The rise of the green GP practice

Jessica Powell meets the doctors and their staff who are practising what they preach when it comes environmental initiatives to protect the planet—and their patients

If you think of a climate crusader you might picture someone chained to a tree or touting a placard. But there’s a new activist in town: the local GP. With the NHS having committed to reaching a net zero carbon footprint by 2040, many general practices around the UK are already using their position at the heart of communities, and their huge reach, to lead the charge.

Last year the Royal College of General Practitioners (RCGP) declared a climate emergency and highlighted “the catastrophic effect on human health of not acting decisively and urgently on climate change.”

Terry Kemple, RCGP representative for sustainability, climate change, and green issues, says, “We’re not talking about if there will be climate change—we’re talking about how bad it’s going to be. If we’re concerned with the health of our patients, it’s not something any rational person can ignore.”

And a growing number of GPs don’t need convincing. Well before the RCGP declaration, general practices throughout the UK were working to decarbonise. In 2014 the Green Impact for Health Toolkit was launched by Kemple and colleagues, giving GPs practical steps for going greener, and over 750 practices have signed up so far. Then in 2017 Aarti Bansal, a Sheffield based GP, founded the Greener Practice group: a network of GPs, medical students, and others aiming to help general practices take action to benefit people and the planet. (See box below)

For GPs engaged in the green mission, the health effects of an unhealthy planet are obvious: an increase in heatwaves (which killed nearly 900 people in England alone last year) and greater spread of infectious diseases, to name just a couple.

“In the UK, 40 000 people are dying from air pollution each year,” says Matthew Sawyer, a GP and director of SEE Sustainability (seesustainability.co.uk), which offers carbon footprinting of general practices and “carbon literacy” training. “We’ve had about 40 000 deaths from covid-19 so far [at the time of interview]. We had that from air pollution last year, but did we have a lockdown? Did we have billions of pounds being spent? No, we just accepted it—and to me that’s criminal.”

Impact on practices

But what have environmental issues got to do with GPs, beyond them tackling the health fallout? You may think it’s down to governments and industry to clean up the climate mess. Honey Smith, GP and chair of Greener Practice, notes that it can be hard for GPs to make the connection between the climate and ecological

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**THREE WAYS TO GROW A GREENER PRACTICE**

- Check out the Green Impact for Health Toolkit (greenimpact.org.uk/GIforHealth). It lists actions that general practices can take, from using a renewable energy supplier to fitting valves on taps to save water—all with the opportunity to be awarded for your work
- Visit openprescribing.net to see how your practice’s prescription data compare with others, to help assess opportunities to deprescribe or make lower carbon medicine swaps
- Head to greenerpractice.co.uk and sign up to the mailing list to join this community of green GPs. The site can also connect you with like minded practices in your area

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More than 750 practices have signed up to the Green Impact for Health Toolkit

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ENVIRONMENT

The rise of the green GP practice

Jessica Powell meets the doctors and their staff who are practising what they preach when it comes environmental initiatives to protect the planet—and their patients

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6 February 2021
If we’re concerned with the health of our patients, climate change is not something any rational person can ignore
Terry Kemple

40,000 people are dying from air pollution each year and we just accept it. To me that’s criminal
Matthew Sawyer

Reducing problematic polypharmacy and medicines wastage is also a major strand of our work
Honey Smith

The amount of emissions from a particular MDI inhaler we use in practice could be equivalent to driving 175 miles
Vasumathy Sivarajasingam

Realising that the healthcare you’re providing causes harm is galling
Munro Stewart

Patients working on our practice allotment see the value in the natural world, as something important to save
Maria Read
and representative for the RCGP on climate change and health in Tayside. But it can galvanise change.

The tactics GP surgeries are employing to tackle the impact of travel include installing charging points for electric vehicles, bike racks, and promoting active travel—be it cycling, walking, or running. Sawyer, who cycles to home visits, says, “It’s about being a good role model.”

The fact that GPs are seen as pillars of the community is one reason why many consider themselves well placed to lead the climate charge. “Patients believe in us,” argues Sivarajasingam. “As GPs we are educators. Every day we’re educating about exercise, or blood pressure, or depression. So, we’re in a perfect place to educate about climate change too.”

Indeed, in a recent survey doctors were considered to be the most trustworthy professionals, so if they talk about the environment and health, people are likely to listen. The beauty of the mission is that it becomes a whole team effort: Sivarajasingam says, “It brings everyone in the practice—clinical staff, admin staff, receptionists—together.”

For all the devastation covid has brought, Stewart believes that the pandemic could provide a golden opportunity, “I feel there’s a real window here while systems are changing,” he explains. “There have been some positives, like getting GPs rapidly skilful at telephone and video consultations.” These, he believes, could be built on where appropriate, to shrink practices’ carbon footprints.

Saving money
Of course, time and money are two inevitable barriers for practices, and organisations such as Greener Practice are calling for funding to support their work and that of individual practices. In the long run it will pay off, says Kemple. “The whole point of sustainability is that you use less, you waste less, and actually that saves you money,” he says.

Karen Crefield is practice manager at Frome Medical Practice in Somerset, which is held up as a shining example of what can be done, having taken 85 green actions listed on its website and winning a 2018 Green Impact Award. She notes that the practice saved £10 000 in one year just from reducing its photocopying and printing.

And it’s not about having to do everything at once, says Sawyer. He recommends that practices work out their carbon footprint and then chip away at it with, say, a 10 year plan. This can also help you dodge red herrings, he says—recycling being a common one. “When I’ve assessed the carbon footprint of practices, only about 0.1% of the footprint is waste,” he explains. “We cannot recycle our way out of the climate crisis.”

Once you get started, “virtuous circles” often develop, says Maria Read, a GP at Dovercourt Surgery in Sheffield. She set up an allotment at the practice to provide her patients, in a deprived area, with fresh fruit and veg. But she’s seen numerous other benefits for patient volunteers. She says, “Being out in the open, being productive, has meant that people in a community who feel disempowered begin to feel good about themselves. And they see the value in the natural world, as something important to save.”

Do no harm
Some nervousness exists about this responsibility being dumped on GPs’ shoulders, but Smith believes that it’s about staging a multipronged attack. She says, “If enough health professionals commit to decarbonising, and to making their voices heard about the climate and ecological crisis as an urgent health issue, it may become more and more difficult for governments not to listen.” She encourages GPs to get involved with their clinical commissioning groups, local medical committees, and RCGP faculties—anywhere that they can lobby for change.

“Doctors sign up to a Hippocratic principle of doing no harm,” she notes, adding, “We also sign up to GMC duties to protect and promote the public health—and if we’re not taking that seriously, what kind of doctors are we?”

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Cite this as: BMJ 2021;372:m4827
How to break the cycle of covid-19 lockdowns

As the UK waits out its third national lockdown, these are the steps countries need to exit the loop

On 4 January, just as the new vaccines seemed to offer hope, England entered its third national lockdown, following the likes of France, Germany, and Spain back into a familiar cycle of restrictions and perseverance.

Countries all over the world are grappling with the same dilemma. Until populations at large are vaccinated, people are not safe from covid-19, and, though we know a lot more about the virus than a year ago, the many questions that remain mean the blunt tool of lockdowns and other social restrictions are the main weapon used, in Europe at least, against a virus that has infected more than 100 million people and claimed over two million lives so far.

As millions are vaccinated, at what point is it safe to lift UK restrictions?

The dangers to consider

The dominance of new, more transmissible variants means that a policy of trying to “live with” the virus will fail, certainly in the UK where the B.1.1.7 variant is now the most common. I know of no country that is successfully living with the virus while avoiding lockdown and restriction cycles, a high death toll, or—as in the UK—both.

We need to set our sights instead on where we want to be and then work out how to get there. The role models we have are Vietnam (35 deaths, 98 million population), Thailand (73 deaths, 70 million population), South Korea (1371 deaths, 51 million population), and New Zealand (25 deaths, 5 million population) where people have been living much more normal lives for months.

Following their example, the way out is for the UK to pursue a national suppression strategy—zero tolerance for any community transmission—which comes with the added benefit of protection from homegrown vaccine resistant variants.

Vaccines will certainly help us to get there but alone they will not suffice. We don’t yet know to what extent vaccines prevent transmission of the virus, but even if they were as effective at preventing transmission as they are at preventing symptomatic illness, we cannot vaccinate our way to no cases.

Herd immunity will not prevent local outbreaks in communities with lower uptake for years to come. And in the face of more transmissible strains, herd immunity would likely require at least 80% of the population to be protected from infection. Even with a very optimistic real world efficacy (as opposed to trial efficacy) of 90%, that would require vaccinating over 90% of people. In the face of vaccine hesitancy, particularly among minority groups; less interest in vaccination among the young; and no current licensed vaccine for children, we will not reach that threshold.

So, what should the UK do?

There are four steps to a new normal.

First, we need to continue to vaccinate the entire adult population as quickly as possible to prevent long covid, severe illness, hospitalisations, and deaths. It is likely that this will also greatly reduce transmission, although we do not yet know by how much.

Second, we need to have strong restrictions in place until we have driven cases back down to levels last seen in the summer. Enhancing restrictions with a concerted effort to make workplaces safer and supporting self-isolation will greatly reduce the length of time needed.

Third, we need to rebuild local contact tracing capability to aggressively drive cases down further as restrictions are eased and to spot and stamp down on new outbreaks in the months and years to come. This includes easily accessible tests, testing of all close contacts, and financial and practical support to isolate. Investment in quicker, easier tests (such as saliva tests, provided accuracy was reasonable) would be enormously useful in supporting this effort, as would other tools such as monitoring waste water for traces of the virus.

Fourth, we need strong border control with negative tests before and after travel and 14 day managed isolation on entry for everyone (including returning citizens). As we reach zero community transmission, any new community transmission that cannot be traced must be contained with local, short term, tight restrictions, as in Australia. On the other hand, travel corridors with other zero internal transmission countries could be explored.

I don’t know, however, if any single country can realistically exit the pandemic unless all countries do. Without global suppression, a vaccine resistant strain is likely to emerge and covid will spread again. That’s why the ultimate solution is for the UK to work internationally to ensure rapid vaccination and a robust strategy for monitoring transmission, identifying new variants, and coordinated border control.
A

s many as 384 million kits have been ordered by the government at a cost of more than £1.3bn, with the lion’s share spent on a test made by the US firm Innova Group. And an additional £900m worth of contracts have just closed. Lateral flow tests (LFTs) have become a lucrative business.

Laboratory based polymerase chain reaction (PCR) tests are often treated as the “gold standard” for identifying clinical cases of infection. But they take time, are relatively expensive per sample, and are not very portable, because of the need for laboratory processing. They are also not perfect—and detect viral shedding long after the infectious period, with people continuing to test positive for a mean of 17 days. This means that people who are not infectious are unnecessarily quarantined (see Analysis, p 197).

As the pandemic stretches on, countries around the world are looking at rapid diagnostic tests, such as LFTs, as a way to test themselves out of the cycle of lockdowns and restrictions and reopen their economies.

How accurate are LFTs?
Lack of a central registration process and of comparative data means that Public Health England’s (PHE) Porton Down laboratory and Oxford University have been tasked with evaluating LFTs. Only three of 40 kits made it through first assessments. And only one of these has been evaluated in field studies; it is still unknown how the others work in the real world.

The World Health Organization points out that the accuracy of LFTs depends on several factors, including time from onset of infection, the concentration of virus, the quality and processing of the specimen, and the precise formulation of the reagents in the test kits.

Quality and processing are determined to a large extent by who carries out the tests. PHE’s evaluation of the Innova test showed that its sensitivity was 79.2% when used by trained laboratory scientists, 73% by trained healthcare staff, but only 57.5% by Boots employed track-and-trace centre staff. But performance should improve with experience, especially among regular users such as people testing themselves several times a week before going to work, says Iain Buchan, professor of public health and clinical informatics at Liverpool University.

WHO says that LFTs are more likely to pick up positive cases when viral loads are highest and patients are most infectious—typically, one to three days before the onset of symptoms and during the first five to seven days after the onset of symptoms.

A recent evaluation of data from a quarter of million people in the NHS Test and Trace programme, available as a preprint, supports this. The evaluation, by the University of Oxford and PHE, found that only six in 100 contacts of infected cases went on to get infected themselves, and, using modelling, LFTs detected most of the people who would otherwise go on to infect someone else. The modelling indicated that LFTs would detect up to 90% of the infections that individuals passed on.

What about asymptomatic people?
All the studies from PHE and Oxford University have focused on patients with symptoms.

“Asymptomatic people have a viral load peak that looks to be, on average, lower than the viral load peak of people with symptoms, and it stays at that peak for less long,” says Mike Gill, former regional director of public health for the South East of England.

In other words, if you don’t show symptoms, you shed virus or clear virus more quickly, he says, which
Lateral flow tests occupy a deregulated grey zone. Most such “in vitro diagnostic tests” can be declared as conforming to the UK Medical Device Regulations 2002. A UK approved body approves tests for higher risk infections, such as HIV, or if it is a self-testing kit. The list of high risk infections is outdated and doesn’t include SARS-CoV-2. So, manufacturers can self-declare covid tests for professional use. The only stipulation is that they must be carried out by trained staff: they cannot be simply rolled out as part of a self-testing programme.

That said, they can be used for research purposes. Innova’s test was piloted for community testing in Liverpool last year. And the MHRA has issued an exemption for the Innova test so that, even though it is approved only for use by professionals, it can be sent out for self-testing under the NHS testing programme. This has highlighted the need to reform the regulations, at least in the UK.

The claims of diagnostics companies have been “without any serious scrutiny” for years, says Jon Deeks, of University of Birmingham’s Institute of Applied Health Research. “They tend to be based on selected results, published with minimal detail, and their performance claims are rarely ever replicated. It is possible for the government to use tests for purposes for which there is absolutely no evidence or approval,” he says.

means that any test with a relatively low level of sensitivity (as with LFTs, in comparison with PCR) could struggle to pick up asymptomatic infections on an “intolerable” number of occasions.

Where the tests have been used among asymptomatic people in real world settings, the reported performance has indeed been lower. In a pilot study conducted in Liverpool 60% of infected asymptomatic people went undetected, including 33% of those with high viral loads. Up to 21 January nearly 560 000 LFTs had been done in the city on more than 200 000 residents, identifying 4/421 people who may not have otherwise known they were likely to be infectious. Among students tested by LFT at the University of Birmingham in December, only 3% of those who would have tested positive on PCR were detected. This is why WHO recommends repeat testing using lateral flow devices.

“We already knew that lateral flow tests do appear more accurate with patients who have more virus present,” says Alexander Edwards, associate professor in biomedical technology at the Reading School of Pharmacy. “It follows that they may be better suited to spotting ‘spreaders’ than identifying everyone infected.”

The question is how to manage false negative results, he says. Are people who receive a negative test result “safe” or “safer” than they were before they were tested?

That’s a worry, particularly as over one in 200 000 residents, identifying 4/421 people who may not have otherwise known they were likely to be infectious. Among students tested by LFT at the University of Birmingham in December, only 3% of those would have tested positive on PCR were detected.

The tests are for people who cannot work from home, including NHS and care home staff, teachers, university students, and employees of companies that have signed up to the government testing scheme. Self-tests are usually conducted twice weekly before users leave home.

The tests are also being distributed to local councils to offer community testing. This has been very well received in Liverpool, says Buchan, one of the senior clinicians involved in analysing the pilot data. It enabled people to get tested before doing something that would put them in contact with others, such as shopping. Buchan says it engages communities and gives people hope by enabling them to do something for themselves, while allowing the public health team to reinforce hygiene messages such as “hands, face, space.”

The DHSC is piloting the tests for some other uses, including testing hospital patients to more quickly identify those with infection so that they can be isolated.

What should LFTs not be used for?

At present, LFTs are not authorised for “serial testing” of school pupils who have been exposed to a confirmed positive case of covid-19 to enable them to attend school (pupils who are exposed to infected cases have to isolate). The government had hoped that serial testing would enable them to reopen schools but such plans are on hold.

LFTs also cannot be used to shorten the length of quarantine of travellers arriving in the UK, under the government’s Test to Release scheme. That can be done only with a negative PCR test result.

Jon Deeks, who leads the Biostatistics, Evidence Synthesis and Test Evaluation Research Group at the University of Birmingham’s Institute of Applied Health Research, says the DHSC’s “red light” interpretation of a positive result is a good use of LFTs. But a “green light” negative result should not be taken as a sign that all is well, he says, and particularly not to do anything you would not have done otherwise. The WHO Essential Diagnostics Test states that negative results should never be used as a basis of decision making.

That’s hard for authorities to control, particularly in a population that’s spent close on a year enduring lockdowns and social distancing.

A lack of consistent messaging across the UK is exacerbating the situation. People who receive a negative result in Lewisham are told it’s “great news,” while in Blackpool they are told that “you were not infectious when the test was done.” They are encouraged to keep getting tested “regularly” in Lewisham, which translates to “once a week” in Bradford and “twice a week” in Havering.

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Cite this as: BMJ 2021;372:n287

» ANALYSIS, p 197
COVID-19

Why aren’t vaccines being distributed in prefilled syringes?

Pre-filled syringes are the safe standard for modern vaccinations. Jane Feinmann asks why covid-19 vaccines rely on glass vials instead

By 24 January more than 5.8 million people in the UK had been given their first dose of a covid-19 vaccine. The achievement is all the more remarkable given the time consuming safety precautions that must be taken. For the Oxford/AstraZeneca injection, healthcare professionals, working alone or in pairs, take “full responsibility” for following a lengthy, itemised standard operating procedure, which was published by the Specialist Pharmacy Service on 7 January.

As well as guidance on preparing the workstation and removing vaccines from the refrigerator, the checklist involves a 12 step guide to filling up to 10 syringes from each vaccine vial. This involves carefully cleansing the vial “bung” before puncturing it in 10 places to withdraw each dose into a single use syringe. This procedure is far removed from normal vaccination practice.

In high income countries, prefilled syringes are now the norm for influenza vaccines, as well as heparin and millions of other injectable medicines. This is in line with the Royal Pharmaceutical Society’s guidance to “minimise the manipulation of medicines outside of pharmacy,” said William Harrop-Griffiths, of the Royal College of Anaesthetists, at the guide’s launch in 2018.

David Whitaker, a retired anaesthetist and chair of the patient safety committee of the European Board of Anaesthesiology, is concerned the use of multidose vials ignores this guidance. “The method is unchanged from Jonas Salk’s polio vaccinations over 70 years ago,” says Whitaker. “It’s as if people are being made to use fountain pens and bottles of ink instead of Biros.”

Emergency approvals

The anomaly is partly explained by the unpredictability around emergent vaccine approval over the past few months followed by the “near instantaneous clamour across the world to stock up on vaccines and the ancillary products required for their delivery,” said Simone Blayer, who oversees vaccine process development at PATH, a non-profit global health organisation in August 2020.

“Across the world, we were looking at up to four billion doses to be deployed in the first quarter after a vaccine is approved for manufacture,” he said. “Many plants can fill tens of thousands of vaccine doses per hour, but when the immediate need is for billions of doses, even the fastest robotic filling arm can be too slow.”

Reports of a global shortage of medical glass, said to be a key factor in slowing down the bottling at vaccines plants across the world, have raised concerns. These, however, seem to be unfounded. “We’ve been hearing these rumours, but it’s not causing a problem, at least in the UK,” Zoltan Kis, research associate at the Future Vaccine Manufacturing Hub at Imperial College London, told The BMJ.

As covid-19 vaccination might become routine, much like flu vaccination, the NHS is to look at future logistics. On 12 January, Kate Bingham, former head of the government’s vaccine taskforce, told the Public Accounts Committee that distribution of the vaccine needs to be simplified if, as expected, it turns out that people will need further doses. She told MPs that this would be “ideally oral or intranasal or even a patch where you could just get it sent in the post.” A patch has long been touted as an alternative to the flu vaccine without a solution emerging.

Bingham failed to mention prefilled syringes, widely tried and tested, easy to use, and almost entirely safe. “Given the importance to life and the national economy, it’s surprising that with nearly a year to prepare, a superior and available technology like [prefilled syringes] does not appear to have been considered,” says Whitaker.

Increased production

In November the US International Development Finance Corporation approved a $590m (£430m) loan to Apiject, a North Carolina company, to build a facility to produce up to three billion single dose prefilled plastic injectors a year. It’s not clear whether prefilled syringes will be produced at the UK’s Vaccines Manufacturing Innovation Centre—being built in Oxfordshire and set to “make 70 million doses within a four to five month period,” says, Matthew Duchars, the centre’s chief executive.

The success so far of Britain’s vaccination programme could be an argument to stick with vials. “It’s clear from the huge numbers being vaccinated that healthcare professionals are managing well with multidose vials, which are also the cheapest way to deliver them,” says Kis. “Cost will always be a factor in vaccination programmes, especially globally.”

But Apiject rejects the idea that vials are cheaper. As well as avoiding contamination and insurance payouts, Apiject claims that in the long run, prefilled syringes are cheaper than multidose vials, “where wastage of up to 50% is routinely factored in.”

Whitaker argues that prefilled syringes are the most up-to-date, safe, and efficient format. “At this stage in this continuing emergency, it’s important that crucial decisions are made by people who understand what it’s like to deliver vaccinations at speed and with the need for constant vigilance to ensure every dose is delivered safely.”

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Cite this as: BMJ 2021;372:n263