this week

SLEEPLESS NIGHTS p 3 • **SPRING STATEMENT** p 4 • **END OF UNIVERSAL FREE TESTS** p 6

LUKASZ SZCZEPANSKI / ALAMY

"Offer all type 1 diabetes patients CGM"

Everyone with type 1 diabetes in England should be offered some form of continuous glucose monitoring (CGM) technology to support their care, NICE has recommended.

Updated guidelines published on 31 March recommend the NHS offers all adults with type 1 diabetes a choice of either real time or intermittent (flash) CGM through a sensor attached to the skin.

NICE also recommends all young people aged 4 years and over with type 1 diabetes should be offered real time CGM in the first instance or a flash device if they express a clear preference.

NICE's health economic modelling found that, when the benefit of reduced fear of hypoglycaemia with CGM was included, real time and flash technologies were both cost effective for all adults and children when compared with standard self-monitoring of blood glucose through finger prick testing.

NICE has also published an updated guideline for adults with type 2 diabetes, which recommends those taking multiple daily insulin injections should have access to flash monitoring if they have impaired hypoglycaemia awareness; if they have a condition or disability that means they cannot self-monitor with capillary blood glucose monitoring but could use a flash device (or have it scanned for them); or if they would otherwise be advised to self-measure at least eight times a day.

The guidelines represent a major widening of access to this technology in England. Although more patients with type 1 diabetes have been able to access the devices since NHS England told local commissioners to end the postcode lottery in prescribing, until now patients have had to meet certain criteria to be eligible.

Partha Kar, who is NHS England's national specialty adviser for diabetes and a longstanding advocate for making the technology more accessible, said that guidelines should "end the debate" about the technology's cost effectiveness.

"This is a huge step forward," he told *The BMJ*. "It's time we made this part and parcel of routine type 1 diabetes care while extending it to those with type 2 diabetes, as per NICE advice."

The guidelines add that adults and children will still need to take finger prick blood glucose measurements to check the accuracy of the device, but they can do these tests less often.

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2022;377:o834

Continuous glucose monitoring technology should be available to both adult and child patients, says NICE

LATEST ONLINE

- Whistleblowing: nephrologist who reported colleagues to GMC was unfairly dismissed
- Offer patients genetic tests to see if medicines are safe and effective, says Royal College of Physicians
- Oxygen shortages two years into pandemic highlight pre-covid failures, says WHO

SEVEN DAYS IN

Retain doctors by giving the same pension scheme as judges, urges BMA

SARAH TURTON/BMA NEWS

The BMA is urging the government to introduce a tax unregistered top-up pension scheme for senior doctors—similar to that introduced for judges this month—to stop doctors reducing their hours or retiring early.

The government is introducing the judges' scheme in light of "unprecedented recruitment and retention" problems in the judiciary—the same problems affecting the medical profession, said the BMA.

One in 10 senior doctors are expected to retire within the next 18 months because punitive pension taxation means it does not make financial sense for them to continue to work, Vishal Sharma (left), chair of the BMA pensions committee, told MPs on the health select committee's workforce inquiry on 22 March. The biggest reason is the "perverse disincentives" of the current pension arrangements which mean these doctors face "financial penalties simply by going to work," he said.

The tax rate for doctors reaching the annual and lifetime threshold, once pension growth and contributions are considered, "can be close to 100%," Sharma said and unless action is taken the NHS is going to have "a workforce crisis like we've never seen."

Ingrid Torjesen, *The BMJ* Cite this as: *BMJ* 2022;376:o806

Covid-19

UK covid cases in England soar within a week

An estimated one in 16 people in England—6.39% of the population—had covid-19 in the week ending 19 March, said the Office for National Statistics.This is a huge jump from around one in 20 the week before. Similar rises have been seen in Wales—one in 16 infected, up from one in 25 the previous week—and in Scotland, where the rate rose from one in 14 to one in 11. In Northern Ireland the proportion infected has fallen from one in 14 people to one in 17.

"Inadequate" paper trail for testing contracts

The UK government failed to keep proper records when awarding almost £780m worth of covid-19 testing contracts to the diagnostics company Randox, said the UK's public spending watchdog. The National Audit Office acknowledged that, while the government had had to act quickly to build testing capacity at the start of the pandemic, the Department of Health and Social Care "did not document key decisions adequately, disclose ministerial meetings with Randox fully or keep full records of ministerial discussions involving Randox."

Vaccination rate rises in pregnant women

Over half (53.7%) of pregnant women in England had received one or more doses of covid-19 vaccine at their time of delivery in December 2021, up from 48.7% in November and 22.7% in August, showed figures from the UK Health Security Agency. However, women of black ethnicity (24.9%) and women living in the most deprived areas in England (32.7%) were the least likely to have been vaccinated before giving birth. Vaccination was not associated with a raised risk of stillbirth, premature birth, or low birth weight.

Moderna requests vaccine authorisation for infants

Moderna is planning to ask the US Food and Drug Administration for emergency use authorisation for its vaccine for children aged from 6 months to 6 years, as well as for 6 to 12 year olds. The vaccine is already approved for children aged 6 to 12 in Australia, Canada, and Europe. In the US, only the Pfizer-BioNTech vaccine is approved for children aged 5 to 18. Although children usually get covid-19 less severely than adults, about 400 US children have died from it.

Cancer

Cancer patients remain at high suicide risk

People with cancer remain at high risk of suicide despite significant progress in treatment over the past few decades, a paper in *Nature Medicine* found. Researchers performed a systematic review of 62 studies with more than 46 million patients. They found that suicide mortality was significantly higher in patients with cancer than in the general population. Risk was strongly related to prognosis, stage, time since diagnosis, and geographical area. The authors called for patients to be closely monitored for suicidality and for specialised care to reduce suicide risk.

Asthma and eczema

Risk may rise with use of disinfectant in pregnancy

Use of disinfectants by pregnant women may be a risk factor for asthma and eczema in their children, a study published in *Occupational & Environmental Medicine* found. Researchers analysed data on 78 915 mother-child pairs who participated in the Japan Environment and Children's Study. They found that the odds of children having asthma or eczema were significantly higher if their mothers had used disinfectant one to six times a week, when compared with children whose mothers never used disinfectants.

Regulation

Lincoln trust is fined £111 000 for unsafe care

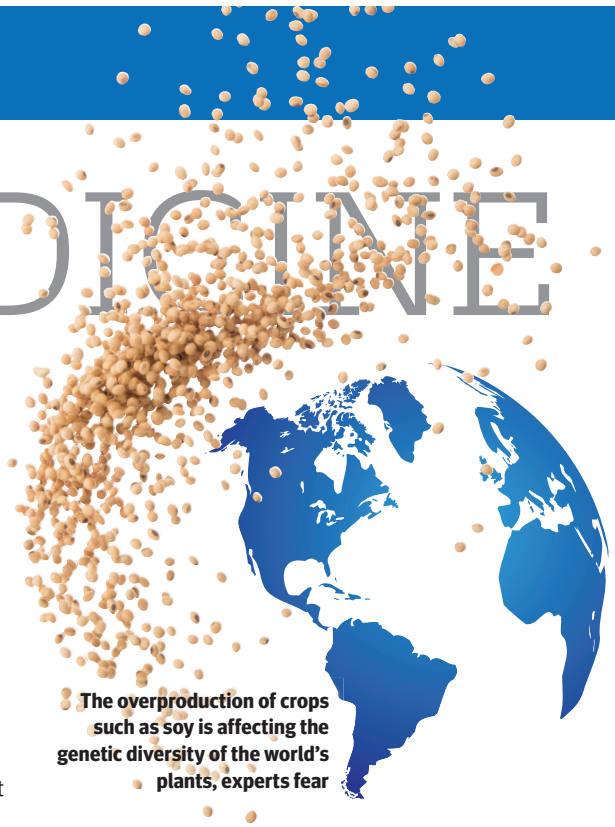
United Lincolnshire Hospitals Trust was ordered to pay a total of £111 204 after pleading guilty to failing to provide safe care and treatment to an elderly patient, Iris Longmate, who was admitted to the Greetwell Ward at Lincoln County Hospital on 20 February 2019. On 3 March she fainted and fell unsupervised from a commode. During resuscitation staff placed her against exposed hot water heating pipes, causing significant burns. She died on 14 March at Queen's Medical Centre in Nottingham after contracting pneumonia. The trust said that other patients on the Greetwell Ward had also been exposed to a significant risk of avoidable harm.

MEDICINE

Nutrition

Global diet is harming the planet's health

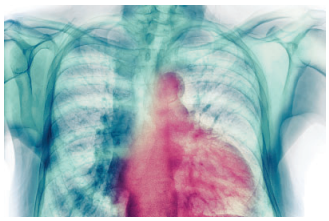
Nutrition experts from Brazil, the US, and Australia have warned that the global diet, which is increasingly becoming more processed and less diverse, is causing environmental damage to the planet. Writing in *BMJ Global Health*, they said that global agrobiodiversity was declining, especially the genetic diversity of plants used for human consumption. They highlighted that more than 7000 plant species were used for human food but fewer than 200 species had significant production in 2014, and just nine crops, including maize, wheat, soy, and oil seed, accounted for over 66% of all production by weight.



The overproduction of crops such as soy is affecting the genetic diversity of the world's plants, experts fear

Cardiovascular disease

Warmer nights may lead to more CVD deaths in men



Warmer than usual summer nights seem to lead to an increase in cardiovascular deaths among men in their early 60s but not among women, a paper in *BMJ Open* suggested. Researchers looked at data from 2001 to 2015 and found that in England and Wales a 1°C rise in the usual summer night time temperature was associated with a 3.1% increase in the risk of cardiovascular disease mortality in men aged 60 to 64. In King County in Washington, US, a 1°C rise was associated with a 4.8% increased risk of CVD mortality in men aged 65 and under.

Pre-eclampsia

NICE recommends four tests to aid diagnosis

Four tests that measure the level of placental growth factor in the blood during pregnancy should be used to help diagnose pre-eclampsia in England, said draft guidelines from the National Institute for Health and Care Excellence. The tests can be used from 20 weeks to 36 weeks and six days of pregnancy and should happen just once when a patient presents with possible symptoms of pre-eclampsia. This should be particularly beneficial for people at higher risk of severe adverse pregnancy outcomes, such as those from African, Caribbean, and Asian family backgrounds, said NICE.

Social care

Five areas will trial new social care charging plan

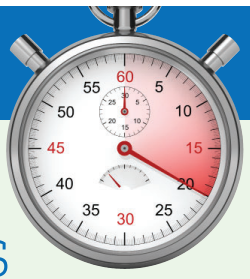
Five local authorities in England will be the first to implement the adult social care charging system, the government announced. Wolverhampton, Blackpool, Cheshire East, Newham, and North Yorkshire will put the plans into action in January 2023, ahead of a national rollout the following October. The plans include a lifetime cap of £86 000 on the amount anyone in England will need to spend on their personal care, alongside means testing for local authority financial support. The government said that the regions selected would ensure a representative cross section of communities.

Cite this as: *BMJ* 2022;377:o820

HIPS

Between last July to September, 4 732 people in the UK self-funded hip replacements, up from 1 795 in the same period in 2019—a rise of 164%

[The Private Healthcare Information Network]



SIXTY SECONDS ON . . . SLEEPLESS NIGHTS

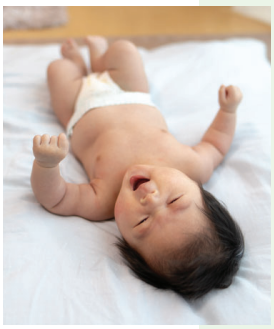
A BIG PROBLEM WITH NEWBORNS?
Not for the babies. They're just sleeping when they're full and waking for their next meal. But It can be a really anxious time for parents, and exhaustion can contribute to serious issues such as depression.

DO ALL PARENTS GO THROUGH THIS?
Durham University's Infancy and Sleep Centre says that 25-33% of parents in English speaking countries consider their child to have a sleep problem and often see themselves as failures if they can't get their child to sleep through the night. This has given rise to a new industry of sleep consultants and coaches.

ARE MUMS AND DADS THE PROBLEM?
Their overly ambitious expectations may be. The idea that it's normal for babies to sleep through the night by 3 months has been largely based on research carried out in the 1950s. More recent research has found that over a quarter of babies hadn't regularly slept all night in their first year.

ANY SOOTHERS FOR THE STRESS?
Sleep, Baby & You is a new support package developed by the Durham sleep centre and the Possums Sleep Program in Australia, to give health professionals tools to help parents. Released on 28 March, it's based on evidence and aims to repair the effect of unhelpful advice, while empowering parents on how best to respond to their baby's needs.

WHERE'S THE EVIDENCE?
A paper in PLoS One reported that of the 93 practitioners who rated the advice, most said it was "realistic, useful and simple." Ten out of 12 parents said the advice reduced night waking, feeling stressed about their baby's sleep, and made night-times easier.



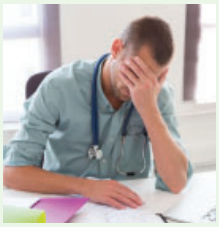
SO WHAT'S THE FORMULA?
Sadly, there's no magic bullet. But as babies spend up to 18 hours a day asleep they are the experts. It's vital to understand their needs and not try to put them to sleep before they're ready, says the programme. It advises getting the baby to wake up at the same time every day and helping their body clock to develop by exposing them to daylight outdoors, especially in the morning. And remember babies can sleep anywhere—so let their sleep fit in with your activities.

Bryan Christie, Edinburgh

Cite this as: *BMJ* 2022;376:o805

Wellbeing champion calls for burnout watchdog for NHS staff

A regulator that sets standards on staff wellbeing and holds the NHS to account should be established to help protect doctors from burnout, a champion of physicians' wellbeing has said.



The proposal was one of several put forward by Clare Gerada, president of the Royal College of General Practitioners and former medical director of the mental health support service NHS Practitioner Health. She was speaking on 22 March to MPs on the Health and Social Care Committee about how the pandemic had increased the number of doctors struggling with mental health problems.

In the first year of the pandemic NHS Practitioner Health was contacted by 5000 doctors —as many as during its first 10 years, Gerada said. She added that she had received more complaints about her general practice in the past two years than the past 40. "Even at my seniority, complaints cause such grief, such mental distress," she said, highlighting that of the doctors who took their own lives, 40-50% had been subject to complaints.

Occupational illness

Burnout is "too gentle a term" for the mental distress experienced by the NHS workforce, Gerada said. "Burnout is an occupational illness," like pneumoconiosis, she said, and needed the same treatment strategy—a reduction in the toxic agent to make it safer. Burnout should be viewed as a complex and endemic public health problem that requires full scale, systematic change, she added, and not something that can be solved through "Zumba classes or mindfulness or swimming with dolphins."

Change needs to be led from the top, said Gerada, who urged the creation of an arm's length body with "the same power and the same resource" as bodies such as the Care Quality Commission to hold the NHS to account on staff wellbeing. "If we'd had that, we'd be in a better place than we are now, because it would have seen some of the early warning signs," she said.

Gerada added, "Every single NHS organisation has to take the health and wellbeing of staff as importantly as it takes finance," with each having a non-executive director whose sole responsibility is to have an overview of the matters around wellbeing.

Gerada also recommended setting up a staff college that could provide lifelong support for NHS staff, such as mentoring, careers advice, and leadership training, and an hour's reflective space a month in all NHS staff contracts.

Ingrid Torjesen, *The BMJ* Cite this as: *BMJ* 2022;376:o780

SPRING STATEMENT

Failure to act on cost of living will push up health inequalities, say analysts

The government is doing too little to protect people from a spiralling cost of living crisis that will increase poverty and health inequalities and intensify the strain on NHS services, said health leaders, analysts, and campaigners in response to Rishi Sunak's spring statement given to MPs on 23 March.

The Resolution Foundation, a think tank on improving living standards, said the lack of support for low income families would push 1.3 million more people into absolute poverty next year including 500 000 children, while seven in eight workers would see their tax bills rise by the end of this parliament.

Torsten Bell, the foundation's chief executive, said, "The decision not to target support at those hardest hit will leave low and middle income households painfully exposed."

Sunak set out measures intended to combat soaring prices for energy, food, and fuel. Inflation will average 7.4% in 2022, peaking at 8.7% by the end of the year, the Office for Budget Responsibility has said in its forecasts.

Sunak also cut fuel duty by 5p and gave councils another £500m for the household support fund, designed to help vulnerable households with rising bills. But he resisted calls to scrap a much criticised national insurance rise of 1.25p in the pound, which takes effect this month, while

FACT CHECK Are fewer UK people in poverty than a decade ago?

What's the claim?

Last month the chancellor, Rishi Sunak, said, "The actions of this government and previous Conservative governments over the last 10 years have meant that there are . . . over a million people fewer living in poverty today." Sunak's colleagues made similar claims in 2020.

What's the source?

The Treasury cited data on "absolute poverty" after housing costs. These show that the number of individuals in absolute poverty after deducting housing costs fell by 1.3 million, from 13 million in 2010-11 to 11.7 million in 2019-20.

What is "absolute poverty"?

This is one of two commonly used measures of poverty. Households are considered to be in absolute poverty when they have less than 60% of the median net income in 2010-11, uprated by inflation. It measures whether incomes are keeping pace with inflation.

Does this capture the reality or scale of UK poverty?

No. Absolute poverty tends to decrease over time, except during recessions. It has "gradually declined" from 22% before 2007-08 to 18% in 2019-20, says the Institute for Fiscal Studies. "It goes down as long as individuals with lower incomes see their incomes rise by more than inflation, regardless of whether they are falling further behind average incomes," says Peter Matejic, deputy director at the Joseph Rowntree Foundation (JRF).

Nor can a reduction in absolute poverty be attributed to Tory governments, although some say its failure to fall more quickly should be. Many poverty analysts prefer to cite "relative poverty" and other indicators as a better reflection of poverty.

benefits and state pensions are rising by 3.1%, below the cost of living.

As household incomes are set to fall by 2.2% in real terms in the coming year, Sunak said he understood many people were struggling but that he could not solve every problem.

The Joseph Rowntree Foundation said families in poverty would be £446 a year worse off in 2022-23 than if benefits had been uprated in line with current inflation levels.

Domino effect

The NHS Confederation welcomed the doubling of the household support fund but said the cost of living crisis would still increase poverty, a key driver of poor health. Its chief executive, Matthew Taylor, said, "This will then have a domino effect on pressures facing the NHS as teams work hard to clear the waiting list and respond to rising demand for healthcare services."

He added that rising inflation meant the NHS would be forced to pay more on bills, equipment, and wages of bank and agency staff and this would hit individual staff members hard.

"A concession has been made in the fuel duty reduction, but we need to see the Treasury go further to shield community based healthcare staff who rely on their cars to see their patients," said Taylor.

The rise in national insurance contributions was announced last year as a levy to help fund the NHS and social care. Sunak has raised the earnings threshold at which NI contributions are paid from £9568 to £12 570 a year while indicating he might cut income tax by 1p in 2024.

The BMA said it was disappointed there was no mention of how the extra £7bn needed to clear the treatment backlog would be funded. Chaand Nagpaul, council chair, said, "Given the unprecedented pressure the NHS is under it is disappointing the government has failed to listen to our concerns around underinvestment in our recent letter to the chancellor."

Saffron Cordery, deputy chief executive of NHS Providers, said trusts were concerned about the scale of savings they would be expected to make given significant pressures. "The impact of inflationary pressures including energy and fuel costs will make their savings requirement even more stretching," she said.

Matthew Limb, London

Cite this as: *BMJ* 2022;376:o794

Inflationary pressures will make trusts' savings requirement even more stretching
Saffron Cordery

GUY CORBISHLEY / ALAMY

What is "relative poverty"?

It relates to households with less than 60% of average incomes. Matejic says, "This measure is better able to tell us whether people on lower incomes are catching up with those on higher incomes and whether they are benefiting from overall economic growth."

Both absolute and relative poverty can be measured before or after deducting housing costs.

What do the experts say about poverty levels?

In a 2020 report the Office for Statistics Regulation said the number of individuals in relative poverty had increased since 2010-11, from 9.8 million to 11 million before housing costs and from 13 million to 14.5 million after housing costs.

The JRF says relative poverty rates have remained "stubbornly high over the past few years," with worrying rises among children and pensioners. Around 25 years ago a third of children lived in poverty, this fell to 27% from 2010-11 to 2013-14. Child poverty has been rising since then, reaching 31% in 2019-20.

Families with children are more likely to be receiving benefits than those without, so this pattern reflects changes in employment levels, earnings, and benefits. Around 1.8 million children are growing up in "very deep poverty," says JRF meaning the household income is so low it fails to cover the basics. This represents an increase of half a million children from 2011-12 to 2019-20, the foundation says.

In a 2021 report the Social Mobility Commission said, "There is now mounting evidence that welfare changes over the past 10 years have put many more children into poverty."

It added, "Together with spiralling housing costs, stagnating incomes and welfare cuts, the result is high rates of in-work poverty: levels hit a new high of 17% of working households living in poverty in early 2020, before the pandemic took hold."

Are there other measures?

Since 2018 the Social Metrics Commission has been publishing a new measure weighing the depth, persistence, and lived experience of poverty. In its 2020 report, *Measuring Poverty*, it said that some 4.5 million people—7% of the UK—lived in families that were "more than 50% below the poverty line," up from 2.8 million people (5%) in 2000-01. It said, "This means that 1.3 million more people are in deep poverty today than would have been the case if the rate of deep poverty was still the same as in 2000-01."

How has the pandemic affected poverty levels?

Matejic says that official poverty figures have yet to reflect the impact of the pandemic and current pressures on the cost of living. He told *The BMJ*, "We would therefore be very cautious about using existing figures to predict the current situation or the near future, as all the signs are that the picture is set to worsen. For example, a recent forecast [by the Resolution Foundation] predicts that 1.3 million people will be pulled into absolute poverty in the next year, meaning they and millions of others are experiencing falling incomes after adjusting for inflation, which is a very worrying picture indeed."

The Legatum Institute, a think tank working to tackle poverty, said the economic fallout from the pandemic had increased poverty, with the largest effects seen among working age adults. But it said government action, such as the temporary £20 a week increase to universal credit, had "insulated" many families.

Matthew Limb, London

Cite this as: *BMJ* 2022;376:o814

Who will still be eligible for free testing from 1 April?

With most people in England having to pay for covid tests from 1 April, **Gareth Iacobucci** looks at what this means for staff and at-risk patients

What's changing from 1 April?
The government's *Living with Covid* document, published in February, set out plans to end all covid restrictions in England and move to a strategy where vaccines and treatments are the "first line of defence." A key plank of this strategy is that, from April, the government will no longer provide free universal symptomatic and asymptomatic covid testing for the general public. Its justifications are the higher levels of immunity in the population and the need to rein in the "very significant cost to the taxpayer."

Ministers have said "individuals most at risk from the virus" will still get free symptomatic testing, but they had not set out further details by the time *The BMJ* went to press.

Which groups are likely to be eligible?
At the start of the pandemic around 3.7 million people in England were advised to shield, as they were considered clinically extremely vulnerable or severely immunosuppressed. The list included people who had had a blood cancer, a weakened immune system from treatment such as steroid medicine, biological therapy, chemotherapy, or radiotherapy, or an organ or bone marrow transplant.

More recently the UK Health Security Agency sent priority PCR tests to 1.3 million people who were deemed to have the highest risk of developing severe covid-19 and who could also be suitable for antiviral treatment if they test positive. But it is still not clear who will be eligible for free testing. On 24 March a Department of Health and Social Care spokesman told *The BMJ*, "We recognise the importance of ensuring people who continue to be at higher risk from covid receive the right advice and interventions. We will set out more details shortly."

Routine testing for healthcare workers is one of the most important tools we have in protecting staff and patients
David Wrigley

What about health and care staff?
The government has said that it will continue to fund free symptomatic testing for social care staff, but there is less clarity for NHS staff. England's health secretary, Sajid Javid, said on 22 February that "if NHS staff need tests, they will be provided with free tests." But he said that this "will be a decision for the NHS," which suggests that the service or individual staff may need to foot the bill.

The BMA and the NHS Confederation have criticised this stance, warning that if the existing twice weekly testing requirement for NHS staff continues after 1 April, staff may have to pay around £50 a month out of their own pockets. Both organisations want free staff testing to continue, particularly for patient facing roles.

David Wrigley, BMA council deputy chair, said, "Under no circumstances must NHS staff be asked to pay for testing to go to work. People visit hospitals and surgeries to get better, not to be exposed to highly infectious viruses, and the continuation of routine testing for healthcare workers is one of the most important tools we have in protecting both staff, patients, and the ability of the NHS to care for patients."

What's happening in the rest of the UK?
In Scotland free lateral flow tests will no longer be available for the general population from 18 April, and free PCR testing for symptomatic people (apart from some at-risk groups) will end on 30 April.

Wales is stopping free PCR tests except for at-risk groups from 28 March, but it will retain free lateral flow tests for symptomatic people until the end of June.

Northern Ireland plans to stop free PCR testing for most people including those with symptoms from 22 April, but it will keep free lateral flow tests available for symptomatic people—possibly until the end of June—"depending on disease trajectory."

How have medical and patient groups responded to the changes?
The BMA and charities representing patients are opposed to removing free

BMA WARNS that, if twice weekly testing for NHS staff continues, staff may have to pay £50 a month out of their own pockets

testing. Chaand Nagpaul, BMA council chair, said that providing free tests only to clinically vulnerable people once they develop symptoms, and not providing any free tests to their friends and family, was "completely illogical, as the priority should be protecting them from infection in the first place."

Abi Howse, health information manager at Blood Cancer UK, told *The BMJ*, "Families and carers of the vulnerable will run the risk of exposing them to the virus unless they can pay for tests. We're calling on the UK government to continue free testing, not just for people at the highest risk but for their households and those closest to them too, because protection from covid should be a right, not a privilege."

A spokesperson for the charity Kidney Research UK said that regular asymptomatic testing "is the only way to make sure the most vulnerable have the best opportunity to swiftly access alternative treatments" if infected with covid, adding that the government "must reconsider."

Rachel Power, chief executive of the Patients Association, said that charging patients for lateral flow tests "creates a barrier" that would exacerbate health inequalities for those who may not be able to afford them. "Charging for tests will contribute to covid-19's continuing spread," she warned.

How are clinically extremely vulnerable patients identified?

In England the shielded patient list, overseen by NHS Digital, was created in 2020 using data from a variety of sources including GP and hospital records.

Speaking at the recent launch of a report from the All-Party Parliamentary Group on Vulnerable Groups to Pandemics that he contributed to, Richard Vautrey, former chair of the BMA's General Practitioners Committee, said that creating the list was initially challenging because it was not clear which patients were most at risk from covid. As an example, he said that someone who might be considered vulnerable to flu would not necessarily be considered vulnerable to covid.

He added, "It wasn't as simple as, 'One condition means that you're on the list and one condition means that you're not,' because, as we know, with many conditions there's a huge spectrum of severity."

How will who is eligible for free testing be determined?

After the government announced the end of shielding in England on 15 September 2021 it said that the national shielded patient list would no longer be updated, although it is currently still available as a resource. The various primary and secondary care databases that were used in creating the national list—including the hospital episode statistics and primary care prescribed medicines lists—will continue to be updated, and they will be available to help determine who is eligible for free testing.

Are these databases accurate?

The All-Party Parliamentary Group's report highlighted discrepancies between primary and secondary care databases that have seen some people's conditions miscategorised or missed entirely. Susan Walsh, chief executive of the charity Immunodeficiency UK, said, "I do have serious, serious concerns about the repercussions for people not being on the high risk list [who should be] in the *Living with Covid* plan. We really do need to tackle this issue."

To ensure that data are accurate, consistent, and easily accessible, the parliamentary group's report advised NHS England to "compile and maintain accurate and up-to-date registers of CEV [clinically extremely vulnerable] people that includes information about their current treatments, the severity of their condition, and their location."

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2022;376:o807

Charging for tests creates a barrier that will exacerbate health inequalities and contribute to covid-19's continuing spread Rachel Power

Call for routine flu tests for inpatients with SARS-CoV-2

All inpatients with covid-19 should be routinely tested for influenza viruses, as those who are co-infected have much worse outcomes, researchers have said.

The largest study to date of people with covid-19 undergoing testing for other respiratory viruses found that patients in hospital infected with both influenza and SARS-CoV-2 were put on a mechanical ventilator four times as often and were twice as likely to die as patients with only covid infection.

The research, by the International Severe Acute Respiratory and Emerging Infection Consortium, included data from 212 466 adults with covid who were admitted to UK hospitals between 6 February 2020 and 8 December 2021. Viral co-infection was detected in 583 of 6965 patients with SARS-CoV-2. Of these, 227 patients had flu viruses, 220 had respiratory syncytial virus, and 136 had adenoviruses.

The researchers carried out a weighted analysis to take into account that patients who were tested for more than one respiratory virus were typically sicker than patients who were tested only for covid. They found that, compared with covid infection alone, patients who also had flu were more likely to need invasive mechanical ventilation (odds ratio 4.14, 95% confidence interval 2.00 to 8.49) and to die (2.35, 1.07 to 5.12). Co-infection with respiratory syncytial virus or adenovirus did not significantly increase the risk.

THE RISK OF CO-INFECTION IS GOING TO BE A REAL ONE AS FLU RETURNS NEXT WINTER
KENNETH BAILLIE

Vaccination data for flu viruses were not registered in the database, and because most patients were admitted before covid vaccinations were available, the researchers were unable to establish the effect of vaccination on outcomes.

Rates of flu have been very low in the past two years because of public health restrictions, but as these are lifted respiratory co-infections will become more likely, said study author Kenneth Baillie, professor of experimental medicine at Edinburgh University. "Flu is going to come back. The risk of co-infection is going to be a real one as flu returns next winter or maybe before," he told a Science Media Centre briefing.

Calum Semple, professor of outbreak medicine and child health at Liverpool University, said only a small number of people, possibly only hundreds or a few thousand, will have a dual infection but it was important to identify who they are as they are likely to have much worse outcomes.

Jacqui Wise, Kent

Cite this as: *BMJ* 2022;376:o809

CANADA

The capital Ottawa was brought to a standstill for several weeks in February when a "freedom convoy" of truckers turned into a mass anti-vaccination protest. The federal government had imposed a rule requiring truckers entering from the United States to be vaccinated. Quebec had separately planned to charge adults not vaccinated against coronavirus a "health tax" but scrapped the idea in February.

GERMANY

In January, the case of a three-year-old boy from Cyprus—initially denied treatment in foreign hospitals because his parents were unvaccinated—raised concerns about whether doctors should be allowed to turn away patients. A German health ministry official confirmed there is no rule that says hospitals cannot treat unvaccinated people, let alone children whose parents are not vaccinated. However, they added that each hospital has its own restrictions and makes its own arrangements with patients.

US

The US Senate voted on 2 March to reverse a vaccine mandate for health care workers at federally funded facilities. Vaccination is voluntary in the land of the free, but some states and individual employers are taking matters into their own hands. San Francisco, for instance, requires its 35 000 public employees to be vaccinated to continue working. New York, however, is keeping a requirement for employees of private companies to be vaccinated before they return to the office. The mandate also stands for municipal workers, with around 1400 (1%) sacked for refusing to comply, according to the *New York Times*.

AUSTRIA

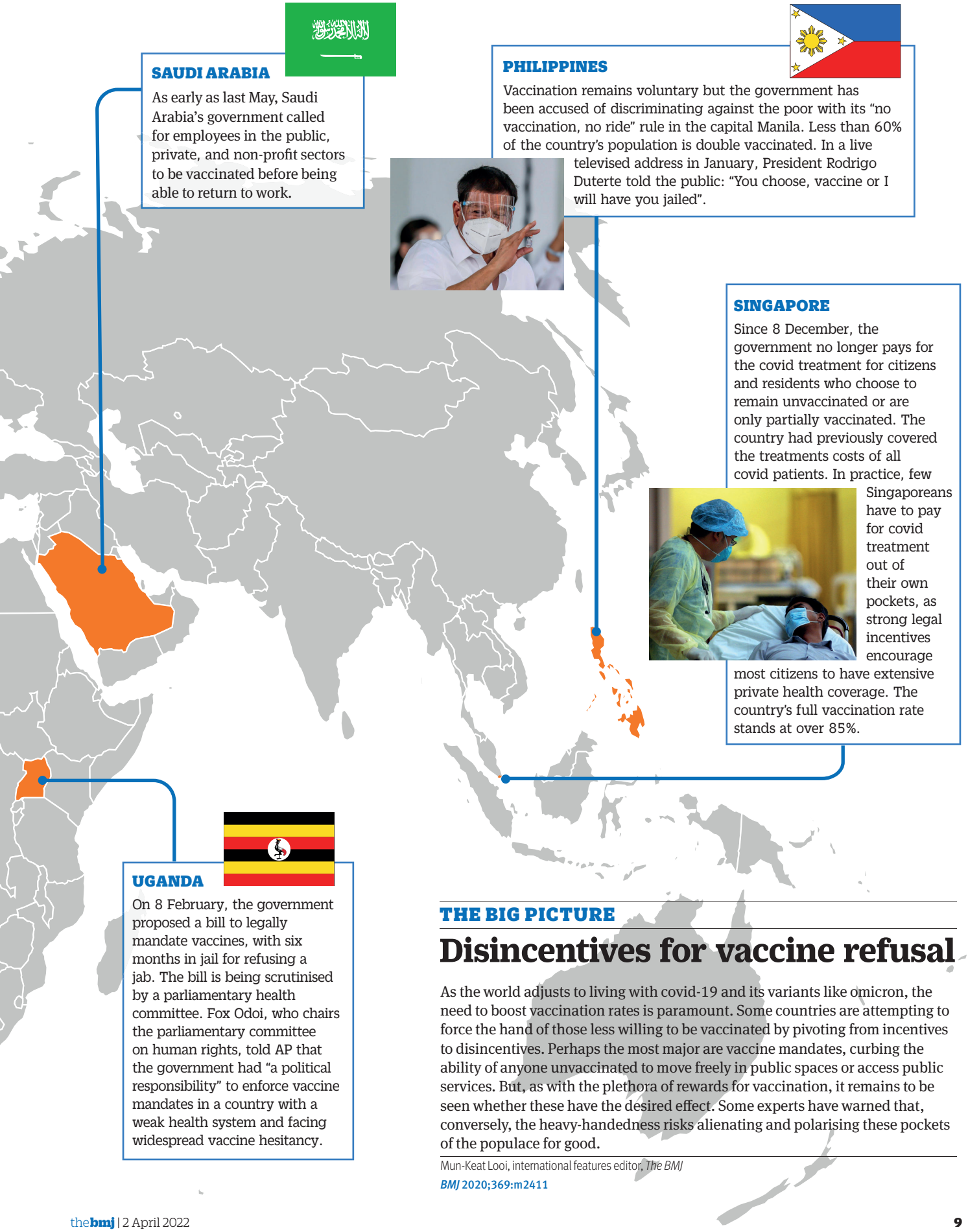
Austria announced Europe's first mandatory vaccination law at the end of 2021, but suspended it on 9 March a month after it came into effect. The rule applied to all adults except pregnant women and those who are exempted for medical reasons and carried quarterly fines of €600 or up to €3600 a year. But the government suspended the rule in light of current pandemic conditions, although it will continue to monitor the situation. Austria's proportion of double-vaccinated people was around 65% when the law was announced—it is now nearly 74%.

ITALY

Italy eased covid-19 restrictions from 1 April, including mandatory vaccination for workers over 50. Since 1 February, over-50s have been required to show a health pass proving they have either been vaccinated or recently recovered from covid-19, or face suspension from work or €100 fines. But this will no longer be the case with unvaccinated workers able to access workplaces if they test negative. Health care workers of all ages—including those at nursing homes—will still be required to be vaccinated through to the end of this year.

GREECE

The Greek government introduced mandatory vaccination for over 60s on 17 January. Anyone who fails to comply faces monthly fines of €100 and the government is considering expanding this policy to over 50s.



SAUDI ARABIA

As early as last May, Saudi Arabia's government called for employees in the public, private, and non-profit sectors to be vaccinated before being able to return to work.

PHILIPPINES

Vaccination remains voluntary but the government has been accused of discriminating against the poor with its "no vaccination, no ride" rule in the capital Manila. Less than 60% of the country's population is double vaccinated. In a live televised address in January, President Rodrigo Duterte told the public: "You choose, vaccine or I will have you jailed".

SINGAPORE

Since 8 December, the government no longer pays for the covid treatment for citizens and residents who choose to remain unvaccinated or are only partially vaccinated. The country had previously covered the treatments costs of all covid patients. In practice, few Singaporeans have to pay for covid treatment out of their own pockets, as strong legal incentives encourage most citizens to have extensive private health coverage. The country's full vaccination rate stands at over 85%.

UGANDA

On 8 February, the government proposed a bill to legally mandate vaccines, with six months in jail for refusing a jab. The bill is being scrutinised by a parliamentary health committee. Fox Odoi, who chairs the parliamentary committee on human rights, told AP that the government had "a political responsibility" to enforce vaccine mandates in a country with a weak health system and facing widespread vaccine hesitancy.

THE BIG PICTURE

Disincentives for vaccine refusal

As the world adjusts to living with covid-19 and its variants like omicron, the need to boost vaccination rates is paramount. Some countries are attempting to force the hand of those less willing to be vaccinated by pivoting from incentives to disincentives. Perhaps the most major are vaccine mandates, curbing the ability of anyone unvaccinated to move freely in public spaces or access public services. But, as with the plethora of rewards for vaccination, it remains to be seen whether these have the desired effect. Some experts have warned that, conversely, the heavy-handedness risks alienating and polarising these pockets of the populace for good.

Mun-Keat Looi, international features editor, *The BMJ*

BMJ 2020;369:m2411

EDITORIAL

Ethnic health inequalities in the NHS

Improvement is urgently required "from board to ward"

Health inequalities are unfair and avoidable differences in health among different groups within society. These differences may be segregated by social class, ethnicity, sex, geography, and literacy, among other things.[1] The pandemic starkly exposed ethnic health inequality. The disproportionate effect on black and Asian populations, caused by a complex interplay of social and biological factors, resulted in increased exposure, reduced protection, and increased severity of illness. The recently established NHS Race and Health Observatory commissioned a rapid evidence review on ethnic inequalities in healthcare.[2]

Longstanding inequalities

The observatory's review identifies five main areas of ethnic inequality: mental health, maternal and neonatal healthcare, digital inclusivity, personalised genomics and genetics, and the healthcare workforce. The review highlights longstanding inequalities to which we seem to have become immune. Mental health services are less accessible to ethnic minorities than to the white majority because of either a lack of referral or patients fearing discrimination, restraint, and seclusion if they seek help. By contrast, the high rates of involuntary mental health treatment are alarming. Social services are 10 times more likely to refer black adolescents to mental health services than white adolescents.[2]

In maternity services, ethnic disparities in intrauterine growth retardation sow the seeds for higher cardiovascular risk throughout life; black and Asian women both have higher maternal mortality rates than white women, and evidence shows that services are often culturally insensitive, with resultant poor communication.[2]

MICHAEL B. THOMAS/GETTY IMAGES

It is time for the NHS to be actively anti-racist, beginning with the eradication of racism within all its structures and policies

Kiran C R Patel, chief medical officer, University Hospitals of Coventry and Warwickshire, Coventry, UK Kiran.Patel@uhcw.nhs.uk

Wasim Hanif, consultant diabetologist, University Hospitals Birmingham

Five actions

How do we tackle these inequalities? First, by using appropriate terminology. Collation of ethnicities into broad groupings may mask inequality within them. For example, considering white populations as a single group undermines our ability to help specific deprived white communities. Considering black and minority ethnic communities as one group stops us from tailoring services according to evidence of risk: rates of diabetes are substantially increased among south Asian people in the UK, while rates of myeloma and cancers of the prostate, stomach, and liver are increased among black people.[3]

Richer datasets can help determine the contribution of ethnicity, genetics, lifestyle factors, and health service factors to differentials in health outcomes and inform strategies to reduce or even eradicate inequality. The NHS must introduce mandatory recording of ethnicity to underpin these efforts.

Second, strategies should be informed by high quality, comprehensive analyses of ethnic inequality. The Race and Health Observatory review, covering the decade between 2011 and 2021, is a welcome addition to existing evidence. The overall picture is complex: between 2012 and 2019, white populations in England had lower life expectancy and higher mortality than all minority ethnic groups (except the mixed group).[4] The white population, which accounts for 80% of all deaths, had a higher mortality than other ethnic groups for the 30 most common causes of death, whereas black and Asian ethnic groups had higher rates in select areas.

Third, we must improve cultural literacy across society and particularly in healthcare, where effective communication directly influences health outcomes. We must invest in the human and other resources required to transition quickly to a fully culturally competent and inclusive service.

Fourth, all policy and planning must have equality as well as quality impact assessments built in from the start. Better public engagement is required to ensure that services are appropriate, acceptable, and accessible to patients of all ethnicities. As the NHS recovers from the covid-19 pandemic, equality is a welcome principle in government plans for tackling the backlog in elective care. Focusing on waiting times alone would probably exacerbate existing inequalities.[5]

Finally, regulators should develop frameworks by which commissioners, providers, and integrated care systems are held accountable for reducing ethnic health inequalities. These inequalities affect NHS staff as well as patients. It is time for the NHS to be actively anti-racist, beginning with the eradication of racism within all its structures and policies.

From board to ward, our workforce must reflect the diversity of the population it serves. Only then will we have an NHS truly able to tackle ethnic health inequality in all its forms.

Cite this as: *BMJ* 2022;376:o607

Find the full version with references at http://dx.doi.org/10.1136/bmj.o607

EDITORIAL

An unequivocal call to climate action

Latest UN IPCC report must not be ignored

The word unequivocal is rare in medicine and stands out in the latest report of the United Nations Intergovernmental Panel on Climate Change (IPCC), which states that "the human toll of climate change is unequivocal and growing."[1] The report issues three clear warnings and a call to action for everyone in the health sector.

BRAZIL PHOTOS/ALAMY

The health response is not only about what we in the health sector do, but how we do it

Accelerated health harms

First, the health harms associated with climate change are worse, and happening sooner, than expected.[1] Since the IPCC's last report on impacts and adaptation eight years ago, the climate crisis has accelerated, as has our understanding of the health implications.[1 2] Evidence indicates that some health harms not anticipated until later this century are already being felt. Half of the world's population live in places vulnerable to climate change, and millions face food and water shortages and major disruptions to their lives and livelihoods.[1] This contributes to migration, displacement, and conflict—all with cascading effects on health.

The latest report found evidence for a broad range of health consequences, including increases in heat related deaths, infectious diseases, and malnutrition.[1] Most notably, the report identified the devastating effect of climate change on mental health and wellbeing, especially among young people. At 1.1°C above pre-industrial levels, climate change already affects every aspect of our health[1 3] and undermines efforts towards universal health coverage.[4]

Second, we are rapidly approaching critical risk thresholds.[1 5] The IPCC evaluated multiple climate threats with health implications, from the loss of ecological systems to extreme weather events. In each area of concern, human harm is now expected to occur at lower global average temperatures than previously reported. Moreover, adaptation becomes impossible above a certain level.[1] Accelerating warming is projected to surpass important risk thresholds for multiple health outcomes, including heat related deaths.

Third, the report expanded previous warnings about maladaptation to climate change.[1] Maladaptations are responses that worsen health, amplify vulnerability, deepen inequity, and limit the possibilities for transformational solutions. Air conditioning, as a health adaptation, is energy intensive, contributes to air pollution, and can be unaffordable and inaccessible to vulnerable populations.[6 7]

Effective response

In the face of these warnings, the IPCC offers hope: the health community can take effective action today dramatically to reduce—and in some cases prevent—the worst health outcomes. We must build strong, climate resilient health systems. Expanding access to universal health coverage is fundamental for adapting to climate change, and health systems must increase capacity to cope with rising rates of poor mental health. Early warning systems for heat events, increased emergency response capacity, surveillance of climate sensitive disease, vector control programmes, and water and nutrition interventions are other critical adaptations that should be expanded.[1 8] These efforts must serve the needs of those hit hardest by climate change, including low income countries and communities, and other marginalised groups.[1 9]

The report emphasises, however, that adaptation alone is not enough. Limiting global warming to 1.5°C above pre-industrial temperatures through a rapid transition away from fossil fuels is the best path to avoid the most catastrophic threats to human health.[10] Affordable options for clean energy and transportation (such as walking and cycling), urban green spaces, healthy buildings, and sustainable food systems are beneficial for both human and planetary health.[11] Importantly, these steps would also reduce air pollution from fossil fuels, which currently causes an estimated 8.7 million deaths each year worldwide.[12]

The move to a sustainable economy can start in the health sector, which contributes nearly 5% of global emissions.[3] Decarbonisation of healthcare systems would catalyse action in other sectors, while also strengthening health system resilience.[13 14] The health response is not only about what we do, but how we do it.

The IPCC's warning comes at a time of major social disruptions. Its diagnosis is clear: climate change is the leading threat to health and wellbeing globally, and our window to act is rapidly closing. The only appropriate response is immediate, unequivocal action.

Naomi Beyeler, managing director, University of California Center for Climate, Health and Equity, San Francisco

Renee N Salas, physician researcher, Harvard Global Health Institute, Cambridge, Massachusetts
rnsalas@mgh.harvard.edu

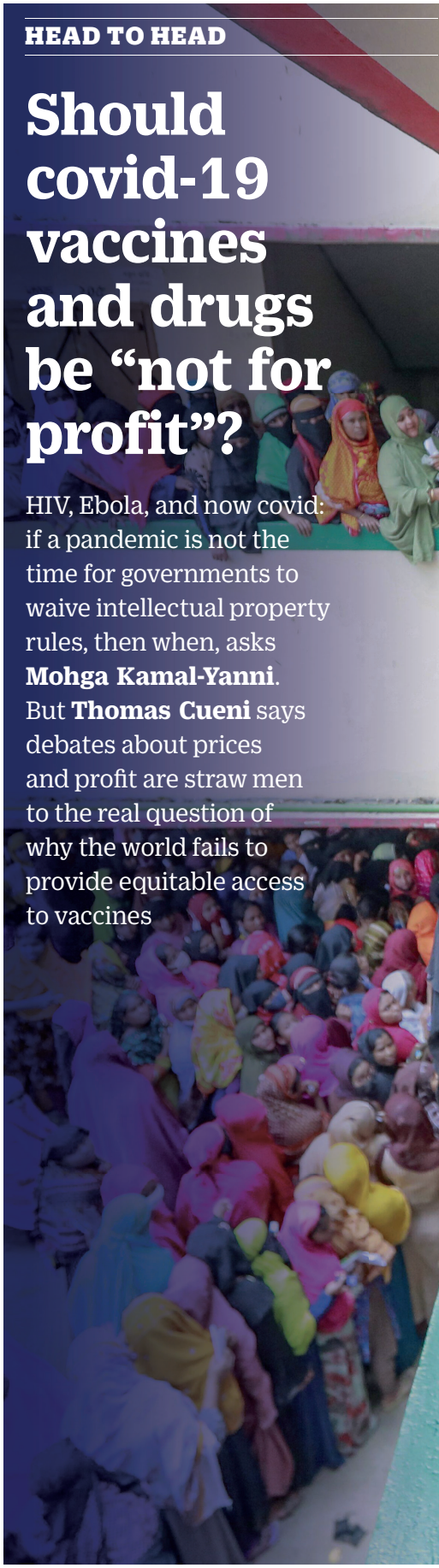
Cite this as: *BMJ* 2022;376:o680

Find the full version with references at http://dx.doi.org/10.1136/bmj.o680

HEAD TO HEAD

Should covid-19 vaccines and drugs be "not for profit"?

HIV, Ebola, and now covid: if a pandemic is not the time for governments to waive intellectual property rules, then when, asks **Mohga Kamal-Yanni**. But **Thomas Cueni** says debates about prices and profit are straw men to the real question of why the world fails to provide equitable access to vaccines



yes

Companies claim to need high profits to invest in R&D; from 2006 to 2015, they spent 19% of revenue on buybacks and dividends, 14% on R&D

Mohga Kamal-Yanni, freelance consultant in global health and access to medicines policy, Oxford
MohgaKY@access2healthcare.net

Inequality in access to medicines and vaccines has been prevalent in developing countries for decades. The HIV epidemic of the 1980s revealed massive faults in the global system of biomedical research—primarily a reliance on market incentives to dictate research and development (R&D) of pharmaceuticals through intellectual property rights. Millions of people died of AIDS, mainly in Africa, for lack of access to the highly priced medicines that could have saved their lives. And when Ebola hit west Africa in 2014, the world discovered that there was no medicine or vaccines because the virus primarily affected poor countries.

Then came covid-19. While over 60% of people in rich countries are vaccinated, less than 20% are vaccinated in Africa. Yet governments maintained the same system, leaving three vital decisions in the hands of drug companies: production, distribution, and price. This allows companies to maximise their profit by supplying countries that could pay the highest price while ignoring poorer ones. For most of 2021 the major problem facing the global Covax initiative was the lack of doses available for supply to low and middle income countries: Covax was able to deliver only the Oxford-AstraZeneca vaccine despite agreements with other companies.

Innovation and development

Under the banner of "profit being necessary for innovation," drug companies fight hard to maintain the monopoly based system. The covid-19 vaccine situation dismantles this approach and instead calls for a system of manufacturing and distribution of tests, medicines, and vaccines at affordable prices.

Global actions are needed to expand manufacturing sites to ensure universal access to vaccines, medicines, and tests. This in turn requires maximising and diversifying production by sharing technology and know-how and waiving intellectual property rules. Such an approach is totally different from the drug companies' focus on maximising profit.

A profit based system for vaccines and other countermeasures results in price escalation rather than maximising production to ensure access for all. From research by Imperial College London, the People's Vaccine Alliance has estimated that the three mRNA vaccine producers are charging as much as 24 times the potential cost of production. Pfizer made $36bn (£27.3bn) from covid-19 vaccines in 2021, and it is expected to have a revenue of $22bn from its Paxlovid antiviral drug for covid-19 in 2022. Moderna and Pfizer are expected to make $64bn this year from covid vaccines alone. The vaccine apartheid story is being repeated with medicines, as doses are already booked for countries that can pay high prices.

Drug companies claim that high prices and high profits are essential for financing R&D. Yet covid-19 has clearly illustrated that public funding is the cornerstone of innovation. Governments played a key role in funding R&D and manufacturing: the UK public purse funded 97% of the Oxford-AstraZeneca vaccine, the US government injected $10bn into the NIH-Moderna vaccine, and Pfizer and BioNTech received $800m in R&D funding. In 11 months, governments paid around $100bn in funding the development of vaccines and therapeutics.

Moreover, by paying low tax and getting tax breaks, companies benefited from the public purse. For example, despite the US statutory rate of 21% tax, in the first half of 2021 Moderna paid a 7% tax rate and Pfizer 15%. Ordinary people also contributed to R&D through enrolling in clinical trials.

Drug companies claim that they need a high profit to invest in R&D. But the evidence shows the opposite. From 2006 to 2015, big pharmaceutical companies spent 19% of revenue on stock buybacks and dividends but only 14% on R&D, which is also tax deductible. The total payout to shareholders increased from 88% of total investments in R&D in 2000 to 123% in 2018.

The Oxford University agreement with AstraZeneca required the company to prioritise low and middle income countries and sell at non-profit price, and the vaccine was the main one used in Africa for most of 2021. This provides clear evidence not only that products for pandemics should be provided at a non-profit price but that it is feasible to do so.

As taxpayers have been paying the fundamental cost of innovation for pandemic vaccines and medicines, should the public continue to allow drug companies to charge high prices and make obscene profits? If now is not the time for governments to retain control by diversifying production, sharing knowledge, and waiving intellectual property rules during a pandemic, when will they act?

SUVRA KANTI DAS/ABACAPRESS/ALAMY

no

During the pandemic most companies have been using voluntary licensing, technology transfer, and differential pricing to help improve access

Thomas Cueni, director general, International Federation of Pharmaceutical Manufacturers and Associations, Geneva t.cueni@ifpma.org

Framing the discussion of whether covid-19 vaccines and drugs should be "not for profit" or "non-profit" is misleading, as these are proxy terms used to tackle the real and important issue of ensuring equitable access to these tools. Reducing the problem to a debate about price is to miss the point, and it directs energies away from the very pressing problems of equitable access to vaccines and treatments.

With the remarkable speed at which covid-19 vaccines have emerged, it's easy to forget that many small and some big drug companies with the longest experience in the vaccine market have thrown in the towel. Of more than 300 vaccine projects, only nine vaccines have cleared the hurdles to get an emergency use licence from the World Health Organization.

Biopharmaceutical innovation remains a risky endeavour, where financial incentives are necessary to drive investment in research and development (R&D) and manufacturing scale-up. For example, mRNA technology was successful only after 30 years of trial and error. The R&D pipeline for covid-19 shows that most R&D efforts are still ongoing.

Yes, many of the successful vaccines received public funding to help manage the heightened risk of vaccine development and to scale up during the pandemic, which took place in parallel—without the benefit of knowing whether the vaccines being developed would be approved.

Since the turn of the year the ground has shifted, with supply constraints easing significantly. Acknowledging this, the International Monetary Fund, the World Bank Group, WHO, and the World Trade Organization are now calling for a shift "from vaccines to vaccinations"—allaying concerns around the scarcity and supply constraints of vaccines and rightly shifting the focus on to getting vaccines into the arms of people who need them, wherever they are in the world.

As a result of the successful scale-up and trebling of pre-pandemic vaccine manufacturing capacity within a year, we are now confronted with demand constraints that hinder access, owing to a lack of absorption capacity and countries' readiness. As we progress in 2022, companies involved in vaccine manufacturing are committed to working with stakeholders to tackle three priorities to urgently increase access to these vaccines.

Access to funding

We need to have a debate about why the world failed to provide equitable access to covid-19 vaccines. For instance, a lack of sufficient and early funding for the Covax partnership put it at a disadvantage when rich countries moved from hedging—not knowing which vaccines would work—to hoarding, in securing as many as 10 doses of the early covid-19 vaccines for each citizen. More than pricing, the biggest hurdles to an equitable vaccine rollout were arguably vaccine nationalism and a lack of early Covax access to funding.

From the first days of the pandemic, having a strong, sustainable, and diverse innovation sector to build on has enabled unprecedented partnerships to tap into the manufacturing capacity in industrialised and developing countries. During the pandemic most companies have been using voluntary licensing, technology transfer, and differential pricing to help improve access. We have seen them price their vaccines and therapies in a way that can help governments ensure little to no out-of-pocket cost for their populations, based on the principles of volume, advanced commitment, equity, and affordability. This approach has been applied to all agreements—whether bilateral or with organisations such as Covax, which has a best price clause as a standard in its contracts.

Similarly, we have seen companies step up to fill the gap when supplies to Covax were not arriving from their initial contracts. In February 2022 the global health community celebrated the first billion doses of covid-19 vaccines delivered through Covax, four in five of these vaccines having been developed by Pfizer-BioNTech, AstraZeneca-Oxford, Moderna, or Johnson & Johnson.

Drug companies have been vital and essential partners in the largest and most rapid global vaccine rollout in history. While we must urgently tackle the bottlenecks in vaccine administration, it is indisputable that we all need to do more and go further. This includes reflecting on how to achieve more equitable allocation more quickly in the future, with more geographical dispersion of manufacturing capacity as an important component.

Cite this as: *BMJ* 2022;376:o755

UKRAINE WAR

Why hospital bombings are difficult to prosecute as war crimes

The Russian invasion of Ukraine has put the targeting of healthcare settings back in the spotlight. **Madlen Davies** reports on efforts to gather evidence—and why so few attempted prosecutions are successful

Oleh Tkachenko was delivering bread when he heard an explosion. He works as a pastor in a Baptist church in Vuhledar, a city in the southern Donetsk Oblast region of Ukraine.

He ran to the city's hospital immediately and saw its windows were shattered, with three people lying in the street and two on the hospital's steps. One woman was already dead. He helped a mother struggling with a pram to a bomb shelter. On the way he saw two ambulances and the first aid station burnt out. There were hundreds of pieces of shrapnel everywhere. "At first I was puzzled," he said. "I couldn't understand what it was but then I saw the head of the rocket and I saw right away it was a cluster munition." The 24 February attack killed four civilians and injured 10, six of them health workers, according to Human Rights Watch.

The attack left the hospital without power. The city now has no water source and only emergency services are running as the fighting continues. "The hospital is in a really dangerous place and it's practically impossible to work there, it's on the side where there's constant shooting," said Tkachenko. "It would be crazy to work there and take in patients. I don't think anyone is offering medical services in the town now."

Hospital attacks began on the first day of Russia's invasion of Ukraine. The World Health Organization has verified 72 attacks on health settings.

Intentional attacks on hospitals have been illegal for more than 150 years but only two people have ever been prosecuted under international law, legal experts told *The BMJ*. They describe a slow system, remote from survivors, and a prosecutor that is not always able to arrest alleged perpetrators. As the war in Ukraine continues, and the toll of injury and death increases, many are asking why we can't better hold offenders accountable.

On 3 March, Karim Khan, prosecutor of the International Criminal Court (ICC), launched an investigation into war crimes perpetrated in Ukraine, and has sent investigators into the country to gather evidence. "Attacking hospitals is a war crime under the ICC statute," said Tom Dannenbaum, assistant professor of international law at Tufts University. "So, too, is attacking medical units or people, and buildings or transports that display a red cross, red crescent, or red crystal, the international emblems of healthcare settings," he said. Indiscriminately attacking civilian populations is also a crime, he added, so any case could include impacts on health settings.

Prosecutors from Germany, Lithuania, Poland, Slovakia, Spain, and Sweden have also launched inquiries into the Russian invasion. For war crimes, a principle called universal jurisdiction applies. Unusually, it allows states to adjudicate on alleged crimes committed in other countries.

Health workers outside the missile damaged Volnovakha hospital, Ukraine

ANADOLU AGENCY VIA GETTY IMAGES

Gathering evidence

Both the Ukrainian government and the ICC have launched online portals where evidence of attacks on civilians can be sent. Thousands of volunteers from the open source intelligence community are documenting and verifying attacks—including those on hospitals and ambulances—found on social media, as well as from sources on the ground. This includes the 9 March bombing of a maternity hospital in Mariupol.

Many of these data will document the attack on the hospital—one human rights group, Mnemonics, previously documented 410 attacks on 270 health facilities in Syria using social media

EVGENY MALOLETKA/AP/SHUTTERSTOCK

THE ONLY SUCCESSFUL PROSECUTION OF A HOSPITAL ATTACK

In November 1991, during the Croatian war of independence, the Yugoslavian People's Army (JNA) took hundreds of people seeking refuge at the city hospital in Vukovar, east Croatia, and transported them 50 km away to a farm in Ovcara. More than 250 people—including patients, hospital staff, and non-Serb soldiers that had been defending the city—were then taken to a nearby ravine and killed; their bodies buried in a mass grave.

In 2007 a colonel and a captain serving in the JNA were convicted of war crimes in the International Criminal Tribunal for the former Yugoslavia (ICTY) and 15 others were later convicted in domestic courts. It remains the only case of a successful prosecution of an attack on a health setting under international law.

In another case decided by the ICTY in 2006, the Appeals Chamber found that Koševo hospital in Sarajevo was regularly targeted when the city came under siege in 1992. However, it was deemed that it had become a legitimate military target because it was used as a base to fire mortars at the Sarajevo-Romanija Corps forces.

Outside The Hague there have been prosecutions in domestic courts. In 2010 in the Democratic Republic of Congo, Barnaba Yonga Tshopena, a leader of the Front for Patriotic Resistance in Ituri militia, was convicted of several war crimes, including attacking and pillaging hospitals.

SAMIR YORDAMOVIC/ANADOLU AGENCY/GETTY IMAGES

sources. But prosecutors will need to link the crime to a person to try before the court, said Dannenbaum.

Even if Russian individuals are identified, proving they deliberately hit healthcare settings is often the trickier task, said Astrid Coracini, lecturer in international law at the University of Vienna. "It's clear that hospitals were attacked," she said. "The question is whether they were targeted. Were the locations of the hospitals clear? A lot of missile strikes come from far away. So, the question is, was it clear that these buildings were hospitals? Was there a military target that was close to it?"

The difficulties are exacerbated when trying to prosecute those higher up the command chain, who weren't there on the ground, said Dannenbaum, because their contribution can't always be infered.

One way to establish the link is to gather evidence from captured members of the Russian forces who agree to give evidence—those who either take a plea deal or who are not implicated directly in the crimes. They can provide testimony and communications clarifying who ordered what or who knew about attacks and when, Dannenbaum said.

Leonard Rubenstein, chair of the Safeguarding Health in Conflict Coalition, says the ICC will also be looking at where weapons were fired from and how precisely they were targeted. The ICC will ask intelligence agencies for intercepted communications from Russian troops. The US, which doesn't normally share intelligence with the ICC, has signalled it may cooperate in Ukraine, he added.

There have been just six convictions for war crimes since the ICC was founded in 2002

Proof and prosecution

Outside of the ICC, other countries' prosecutors can bring claims against Russia without proving intent, instead proving recklessness, he said. Rubenstein believes this is the most likely route to a prosecution. "If you're prosecuting because the hospital was targeted, you have to prove it was targeted," he said. "But if you're bringing a case in which a hospital is part of a civilian area, you need to show they intended to hit the civilian area. You could use a lot of circumstantial evidence to prove that. In Ukraine the evidence is overwhelming."

Even still, it could be years before survivors see justice. "It's very, very slow and it's frustrating for victims and affected communities," said Dannenbaum. "It's remote. Even when the prosecutions happen—in The Hague— it's not easy for victims to attend or to feel connected to the process. Those are all real challenges with the system."

The ICC has a proposed budget of €158m for 2022, a fraction of many countries' defence budgets. A coalition of civil society groups has been calling for it to be given the funds it needs to bring justice to victims. The ICC has also asked for extra donations so it can carry out its investigation in Ukraine, and Lithuania has already donated €100 000, according to media reports.

Even after a successful prosecution—there have been just six convictions for war crimes since the ICC was founded in 2002—getting custody of the perpetrator is difficult. Russia, like Syria before it, is not party to the Rome Statute, the ICC's governing treaty, and so is not obligated to cooperate with it. This is the reason the ICC cannot investigate alleged war crimes in Syria. Ukraine, which gave the ICC jurisdiction in a declaration in 2014, could prosecute captured commanders and try them in its domestic courts. But unless there is a change in regime in Russia, it is unlikely President Vladimir Putin or military leaders will be handed over to the court, unless they travel to countries with extradition orders.

The fact that the international justice system only applies to the countries that sign up to it is a "big flaw," said Rubenstein. If they are not a member of the ICC, and many authoritarian regimes aren't, a case must be referred by the UN Security Council. Its five permanent members, China, France, Russia, the UK, and the US, have a veto. There are proposals to disallow vetoes in cases of atrocities, but that is likely to be hamstrung as it will need to be agreed by all members, he said.

Still, the lawyers and experts contacted by *The BMJ* were optimistic

the ICC would bring charges against individuals for war crimes in Ukraine.

Prevention

Zahed Katurji worked as a trauma doctor in east Aleppo when it was under siege from 2012 to 2016. He describes another flaw in the system: as part of its deconfliction mechanism, the UN Office for the Coordination of Humanitarian Affairs (OCHA) asked for hospital locations to share with the Assad regime and Russian forces, in the belief this would stop the facilities being targeted. "Most of those hospitals were attacked," said Katurji. "It was literally a target menu."

Katurji, whose organisation Action For Sama has launched the Stop Bombing Hospitals campaign, said OCHA published hospital locations but there was no investigation when they were hit. "It puts a lot of pressure on local health workers. We had a long, long debate—do we provide these locations or not? What if we provide the locations and a hospital is attacked? What if we don't and a hospital is attacked and then we'd be blamed because we didn't share the locations." An OCHA spokesperson told *The BMJ* that the deconfliction mechanism is voluntary.

While prosecuting war crimes provides accountability, many would like to see prevention. Countries could better train soldiers, and lawyers could be deployed to advise on military strategy and targeting decisions, as has occurred in some armies. "It's not foolproof," said Dannenbaum. "It's not as though doing that is going to eliminate war crimes or avoid excesses in armed conflicts, but it's another way compliance can be enhanced."

The UN Security Council unanimously adopted a resolution in 2016 asking governments to engage in a series of activities to prevent attacks on healthcare facilities and hold perpetrators accountable for them. Hardly any countries have implemented it domestically or championed changes on the international front, said Rubenstein. "That shows a complete failure of the international system."

Madlen Davies, investigations editor, *The BMJ* madlen.davies@bmj.com

Cite this as: *BMJ* 2022;376:o771

OPINION Houssam Alnahhas, Ranit Mishori, and Michele Heisler

Hospitals and health workers must be protected from war

By 12 March the monitoring group Insecurity Insight had documented 47 reported attacks on Ukrainian healthcare facilities in the 16 days after the Russian invasion.

In 29 of these reports health facilities were damaged or destroyed, 24 health workers were injured, and eight were killed. WHO has verified 64 attacks on healthcare since the conflict began. Both are likely to be conservative figures.

International humanitarian law and human rights law protect medical spaces and health workers from interference and attack during armed conflicts. The four Geneva Conventions of 1949 have been ratified by 196 countries, including Russia and Ukraine, both of which also ratified Additional Protocol I. These require that all parties to a conflict protect and ensure the functionality of medical facilities, transport, and personnel; protect and ensure unbiased treatment for both wounded civilians and combatants; and that medical personnel provide impartial care to both civilians and wounded combatants.

There are limited exceptions to these regulations, for instance where a medical site is being used to commit acts in furtherance of the conflict and unrelated to its humanitarian function, provided the "collateral damage" of any such attack is proportional to the anticipated military advantage. But any lawful targeting is the exception to an overriding norm: hospitals and health workers must be protected from the waging of war.

Attacks on health facilities and personnel during conflict

DMYTRO SMOLYENKO/ UKRINFORM/ FUTURE PUBLISHING /GETTY IMAGES)

Unless architects of this war are held accountable, violations will continue

are, unfortunately, not unique to Russia's invasion of Ukraine. Such attacks have been documented throughout the world in conflict-affected places such as Afghanistan, Iraq, Myanmar, Palestine, Somalia, Sudan, Syria, and Yemen. More than 4000 attacks or threats to healthcare were perpetrated globally from 2016 to 2020, according to the Safeguarding Health in Conflict Coalition. Their toll on local populations can be devastating in the short and the long term and can cripple entire health systems.

In Syria, Russia has actively supported actions to "weaponise" attacks on healthcare by killing, imprisoning, and torturing thousands of health workers and attacking hundreds of hospitals and other facilities. Since the conflict in Syria began 11 years ago this month, Physicians for Human Rights (PHR) has corroborated 601 attacks on 400 health facilities and the killing of 942 medical workers, with more than 90% of these attacks perpetrated by the Syrian government, Russia, and other allies.

Russia has suffered no consequences or accountability for these crimes—nor for attacks that destroyed or severely damaged hospitals in Chechnya's capital, Grozny, during its invasion in 1994-95 and again in 1999-2000. Russia is now using these tactics in Ukraine. Unless the architects of this war and others are held accountable, violations will continue and likely worsen.

While securing a ceasefire and access for humanitarian assistance to Ukraine is a clear priority, it is also urgent that independent rights organisations such as PHR rigorously investigate and document evidence that can be used by international justice mechanisms to hold perpetrators accountable.

The world must insist on the enforcement of UN Security Council Resolution 2286's safeguards to protect healthcare in conflict and ensure evidence of war crimes and other human rights violations is gathered, preserved, and documented. As Peter Maurer, president of the International Committee for the Red Cross, has noted: "After outrage must come action, not complacency."

Houssam Alnahhas; Ranit Mishori; Michele Heisler, Physicians for Human Rights, New York

Cite this as: *BMJ* 2022;376:o764