CAFFEINE POUCHES page 171 • **SMOKING CESSATION** page 174 • **TB ON THE RISE** page 176

PA union fails to block Leng changes

United Medical Associate Professionals (UMAPs) last week lost its High Court bid to temporarily prevent NHS England carrying out recommendations of the Leng review, but it insists the "fight goes on."

The union that represents physician assistants, known as physician associates before Gillian Leng's independent review, sought an injunction to halt NHS England from rolling out the name change and barring PAs from seeing undiagnosed patients.

UMAPs said the case, although it "did not result in injunctive relief," had clarified it was up to individual NHS employers to decide whether to implement the changes. The union has urged "all NHS trusts and primary care networks to await the outcome of our upcoming judicial review before making any changes to medical associates' job roles."

An NHS England spokesperson said, "We will continue to work with partners and clinical professions so patients receive safe, effective, and compassionate care in line with the relevant legal and clinical processes," adding that employers should review Leng's recommendations in line with clinical guidance and their organisational policies.

Employers should also consult local trade unions on how any changes can be applied, in line with employment law and clinical governance processes, the spokesperson said.

Following its High Court loss, UMAPs has announced plans to extend its judicial review to take on Leng herself. Last month the union said it was seeking to bring the judicial review against health secretary Wes Streeting and NHS England over their acceptance of the review's recommendations. Now UMAPs has said it would be "adding Professor Gillian Leng as a third defendant."

Its statement said, "NHS England's rushed and underhand implementation of the Leng review is resulting in redundancies for PAs and anaesthesia associates (AAs), as well as significant restrictions on their work and adverse effects on their mental health."

A Department of Health and Social Care spokesperson said, "Gillian Leng is one of the UK's most experienced healthcare leaders and has delivered a comprehensive report. This included extensive time spent engaging with the professions themselves.

"The health secretary has agreed to implement the recommendations of her report in full, prioritising safety and reassuring patients they will be seen by the most appropriate healthcare professional."

Leng declined to comment.

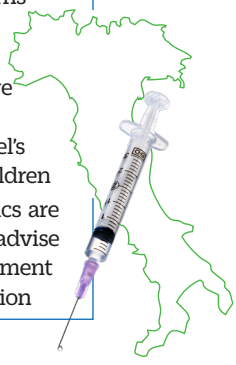
Kate Bowie, *The BMJ*

Cite this as: *BMJ* 2025;390:r1768

UMAP is to include Gillian Leng as a defendant in its legal case to try to halt her PA review recommendations

LATEST ONLINE

- Patient was left without insulin after "critical" information wasn't shared, safety watchdog warns
- Gaza: UK paediatricians criticise college over failure to condemn Israel's attacks on children
- Vaccine sceptics are appointed to advise Italian government on immunisation



MEDICAL NEWS

UK approves first drug for delaying onset of type 1 diabetes

The UK's drug regulator has approved the first immunotherapy to be licensed to delay the progression of type 1 diabetes in patients in the early stages of the disease.

The MHRA said teplizumab (Tzield), manufactured by Sanofi, can be given to people aged 8 or older who have stage 2 of the condition and are at high risk of progressing to stage 3. Patients who have reached stage 3 have usually started to have blood sugar problems and then receive a type 1 diagnosis, requiring lifelong insulin treatment.

A 14 day course of daily infusions of teplizumab has been shown to delay patients reaching stage 3 by an average of three years, the MHRA said. It works by binding to certain immune cells and may deactivate those that attack insulin producing cells, while increasing the proportion of cells that help moderate the immune response.

NICE is currently assessing the cost effectiveness of the treatment, which will determine whether it will be rolled out to NHS patients.

Elizabeth Robertson (left), research and clinical director at Diabetes UK, said the approval was a "milestone moment." She said, "For the first time we have a medicine that targets the root cause of the condition, offering up to three precious extra years from the relentless demands of managing type 1 diabetes."

Kate Bowie, *The BMJ* Cite this as: *BMJ* 2025;390:r1762

Workforce

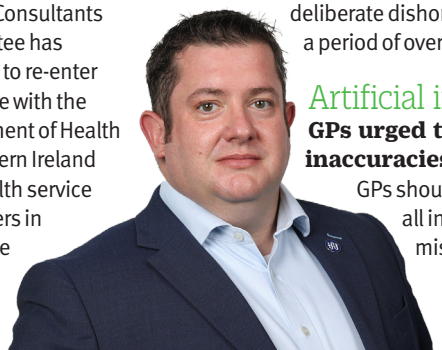
CQC highlights risks of filling rota gaps with PAs

Great Ormond Street Hospital's use of physician assistants to fill gaps in its surgical rota raises concerns over supervision and decision making, England's healthcare regulator warned. The Care Quality Commission's assessment of services at the leading children's hospital in London found "staffing remained a concern in some parts of the service." The watchdog's surgical inspection found evidence that the trust's nine PAs were being used to fill registrar rota gaps, "which posed potential risks regarding supervision and decision making authority."

Pay negotiations

Consultants launch fresh dispute in Northern Ireland

The BMA has entered another pay dispute, this time over consultants' pay in Northern Ireland. The union's Northern Ireland Consultants Committee has decided to re-enter a dispute with the Department of Health in Northern Ireland and health service employers in response to this year's DDRB recommendation of a 4% pay rise. Committee chair David Farren (below) said, "If the health minister will not value our time, we will."



Medical regulation

Mesh pioneer is struck off for false medical records

A former consultant colorectal surgeon was struck off the UK medical register for concocting fake medical records and letters and giving the false impression that these had been produced while he was treating patients. Tony Dixon, who pioneered the use of artificial mesh for pelvic floor surgery, was a consultant at North Bristol NHS Trust until 2017. He faced compensation claims from dozens of former NHS patients who had had surgery at Southmead Hospital and from private patients at Spire Healthcare's hospital in the city. A medical practitioners' tribunal found "multiple instances of deliberate dishonesty spanning a period of over four years."

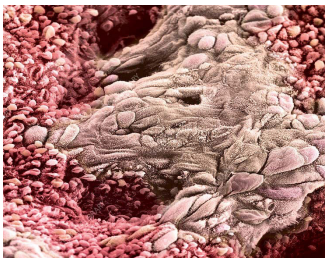
Artificial intelligence

GPs urged to report inaccuracies to MHRA

GPs should report all incorrect or misleading results from AI tools used in clinical practice, said the UK's medicine regulator, the MHRA. It said that doctors should report all suspected inaccuracies caused by AI to the regulator's yellow card scheme. It warned GPs about the risk of "hallucination" posed by the use of AI tools to transcribe and summarise appointments.

Endometrial cancer

NICE approves new immunotherapy Keytruda



Thousands of women with a diagnosis of endometrial cancer are set to benefit from a new immunotherapy approved by NICE. From 6 August healthcare professionals can use pembrolizumab (Merck Sharp & Dohme's Keytruda) for patients with primary advanced or recurrent endometrial cancer. NICE said this was the first combination of immunotherapy with chemotherapy as a first line treatment for this type of cancer for the whole group of patients.

Cosmetic procedures

UK cracks down amid rise in rogue providers

Ministers vowed to "crack down on cowboy cosmetic procedures" after a rise in unqualified and rogue operators left people "maimed, injured, and in need of urgent NHS care." Under rules yet to be finalised, only specialised healthcare professionals working at registered providers may perform the highest risk procedures. The government said a new local authority licensing system would also cover lower risk treatments such as botox, lip fillers, and facial dermal fillers.

Care at end of life

RCP calls for national palliative care strategy

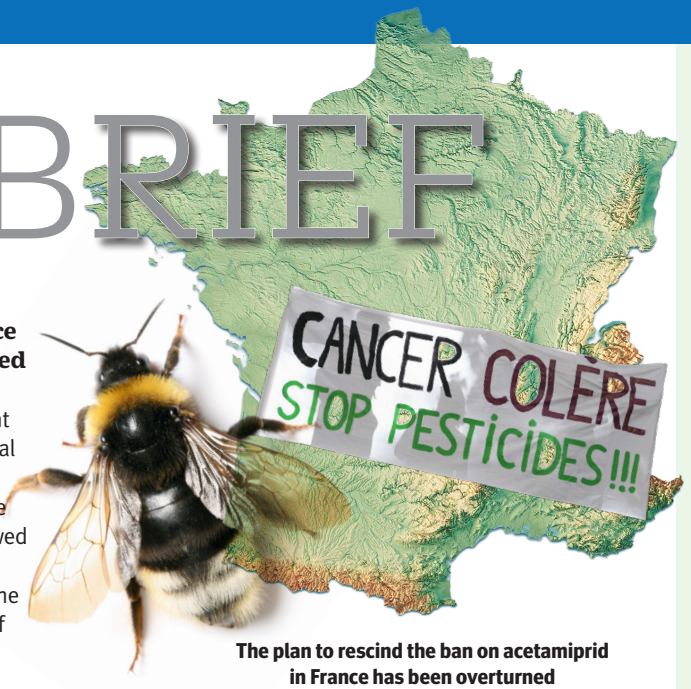
Doctors' leaders called for a national strategy for end-of-life and palliative care to transform how dying is recognised and supported in the NHS and social care. The Royal College of Physicians issued a position statement supporting a cultural shift towards more open conversations, earlier planning, and better integrated care for people with life limiting conditions. It also urged the government to launch a public awareness campaign about end-of-life and palliative care.

IN BRIEF

Environment

French plan to reintroduce banned pesticide is blocked

France's highest constitutional authority rejected part of a recent bill passed by the French National Assembly that would have reintroduced a banned pesticide into farming. The decision followed strong condemnation by the public and environmentalists. The bill allowed the reintroduction of acetamiprid, which is believed to kill bees and to cause cancer and other diseases in humans. A petition gathered more than 2.1 million signatures opposing the move, and France's Constitutional Council has now ruled that this part of the plan is unconstitutional.



The plan to rescind the ban on acetamiprid in France has been overturned

Sepsis

NHS 111 algorithm gets warning after baby dies

NHS 111's reliance on an "ineffective" algorithm for potential sepsis cases could be endangering patients, experts warned after a baby's death. In a recent ruling Judith Leach, assistant coroner for Oxfordshire, said the 111 algorithm had not been effective in assessing the deterioration of 1 month old Oscar Keenan, who died in June 2024 after his parents contacted NHS 111 for advice. The coroner warned, "In my opinion the 111 algorithm is not effective in assessing the deteriorating newborn—particularly in the case of altered breathing and sepsis."

Ageism in research

Call to end exclusion of over 75s from trials

The development of new treatments is undermined by excluding older people from clinical research, 43 UK charities and research institutes warned. People over 75 are "disproportionally under-represented" in medical research when compared with their burden of disease, undermining the usefulness and accuracy of findings, the organisations argued. A joint statement led by NICE and issued on 11 August called for a renewed commitment to tackling this inequity and committed to greater inclusion of older adults in research.

Ethnicity pay gap

Review looks at career and salary differences in NHS

The NHS Race and Health Observatory is launching an independent review of ethnicity pay gaps in the NHS in England, described as the first such review. The University of Surrey will work with the observatory to undertake the 18 month project, due to be completed in December 2026. It will focus on examining differences in pay, career progression, and pension contributions, looking at the potential effect on cumulative financial earning between staff of different ethnicities. It will also look into possible explanations for any differences and solutions to eliminate unwarranted inequities.

Cite this as: *BMJ* 2025;390:r1755

MIDWIFE SERVICE

NHS England estimates its new online self-referral midwife service could mean

180000

fewer calls to GPs and

30000

fewer general practice appointments each year

[NHS England]

SIXTY SECONDS ON . . . CAFFEINE POUCHES

DO YOU MEAN TEA BAGS?

No. We're talking about small pouches of microground caffeine powder that are stimulating the market. The bags promise a faster hit of caffeine than a good old cuppa.

PROFIT IN THE BAG. WHO'S PAYING?

The pouches seem to be targeted at a young TikTok audience, particularly students or those keen on the gym, as caffeine has physiological effects such as increased focus and performance.

HOW ARE THEY TAKEN?

Users place the pouch between their lip and gum and the caffeine is absorbed. They then spit out the used pouch. The pouches are available in the UK from manufacturers' websites and Amazon.

ARE THEY SAFE?

Manufacturers describe them as "high quality coffee infused with essential vitamins and natural flavours." But experts are not convinced. Bini Suresh, head of dietetics at the Cleveland Clinic London and a spokesperson for the British Dietetic Association, told *The BMJ*, "I would urge caution when it comes to nutrition or supplement pouches, especially those being heavily marketed on social media."

UNEXPECTED ITEM IN BAGGING AREA?

Suresh added, "Safety depends on the contents. Some pouches may contain concentrated vitamins, minerals, caffeine, herbal extracts, or other bioactive substances in doses that exceed recommended daily amounts, interact with medications or medical conditions, or aren't regulated or tested for safety in the UK."

HAVE THE BAGS BEEN CHECKED?

The pouches contain more caffeine than some other stimulant products. Some claim to contain 100 mg of caffeine, which compares with the amounts of caffeine detailed by the Food Standards Agency of 100-140 mg in a mug of coffee or 80 mg in a 250 mL can of energy drink.

WHAT'S THE LIMIT?

The European Food Safety Authority says caffeine intakes of up to 400 mg a day are unlikely to cause adverse effects, and the NHS advises no more than 200 mg for people who are pregnant.

Adrian O'Dowd, Kent

Cite this as: *BMJ* 2025;390:r1712

A third of doctors are preparing to leave UK medicine, GMC report finds

STEPHEN CHUNG / ALAMY

One third of doctors are looking to leave the UK medical profession, and nearly half of those are taking serious steps towards leaving, a report by the GMC has found.

Its workplace experiences report, based on a 2024 survey of almost 4700 doctors, found that about 1600 (34%) said they were likely to leave the profession. Of those, 700 said they had already taken "hard steps" towards leaving, a figure similar to previous years.

The report defined "hard steps" as applying for jobs abroad (around 260 doctors), applying for non-medical jobs in the UK (178), applying for or attending training to prepare for a new role (178), contacting a recruiter (356), or applying for retirement or their pension (32).

Charlie Massey, the GMC's chief executive, said, "Like any profession, doctors who are disillusioned will start looking elsewhere. Doctors need to be satisfied, supported, and see a hopeful future for themselves, or we risk losing their talent and expertise altogether."

The regulator also found that only 39% of UK doctors thought that they could progress their career in the way they wanted. Not having enough autonomy, not feeling part of a supportive team, workload problems, and burnout were all cited as contributors to a feeling of being unable to progress.

Billy Palmer, senior fellow at the Nuffield Trust, said, "Job guarantees, better rotas and placements, and protection of training time all need to be on the table. Addressing the burden of medical graduates' student debt by gradually writing off loans could also be a promising way to reward doctors' NHS service. With fewer than three in five doctors in 'core training' remaining in the NHS eight years later, unless warnings from this survey are dealt with we'll continue to lose these skilled clinicians."

Like any profession, disillusioned doctors will start looking elsewhere
Charlie Massey

A recent BMA survey of just over 1000 foundation year 2 doctors found that as many as half had no job to go to when they were due to finish foundation training.

Some unemployed doctors have told *The BMJ* they are in the process of moving abroad or are living on unemployment benefits as they try to secure a job.

Post-pandemic decline

The GMC report showed that, while doctors' satisfaction had slightly improved, it remained lower than before covid. In 2024 59% of doctors reported being satisfied with their day-to-day work, up from 53% in 2023 but down from 63% in 2019.

The proportion of doctors at high risk of burnout has also fallen since 2023, from 21% to 18%, but 23% still said they had taken a leave of absence because of stress in the past year, up from 12% in 2019.

Forty per cent of doctors said that at least once a week they found it difficult to provide sufficient patient care, a slight fall from 43% in 2023 but worse than the 34% reported in 2019. Inadequate staffing was the most common barrier to providing care.

Although more doctors said they were doing well with their workload—31% in

"Misleading indicator" used to gauge waiting list progress

The recent drop in the NHS waiting list hailed by ministers as a sign of progress in tackling the treatment backlog has given a "misleading" impression of the ability to meet demand, a report from two healthcare think tanks has concluded.

Last month NHS England and the government reported the waiting list had fallen to a 26 month low, with health secretary Wes Streeting saying the drop was "because this government has delivered on the Plan for Change."

But an analysis by the Nuffield Trust and the Health Foundation concluded the statistics "do not necessarily mean that more need is being met." Instead, the fall was driven by "unreported removals" rather than the number of patients being treated exceeding new additions to the list. "Unreported removals" refers to patients who are removed from the list without being treated.

While the NHS is delivering more planned care, the authors said this was "still not enough to keep up with demand." In the past two financial years (April 2023 to March 2025) there was an average of 244 578 unreported removals a month, which had "helped the NHS get control of the waiting list."

The researchers said that "validation exercises," in which trusts check whether patients still require elective care, have coincided with rises in unreported removals. They added it was impossible to determine, using publicly available data, which removals reflect unreported completed pathways, deleted errors, or duplicate referrals.

"Gaming" the list

Senior NHS figures warned that the validation system could leave the data "wide open to gaming."

The report said, "Until more transparent reporting is provided, accountability around unreported removals remains impossible, and the planned care waiting list will continue to be a misleading indicator of how the NHS is dealing with demand."

NHS performance data published on 14 August showed the overall waiting list rose slightly from 7.36 million in May to 7.37 million in June after months of small falls.

Becks Fisher, director of research and policy at the Nuffield Trust, said the figures reflected the NHS "struggling to keep pace with demand."

An NHS England spokesperson said that unreported removals had a "small impact on the

DATA showed the overall waiting list for treatment rose slightly from 7.36 million in May to 7.37 million in June

2024, up from 27% in 2023—11% reported stopping or reducing their time spent as a trainer because of workload pressures and a lack of capacity. This was the first time the GMC had asked this question, so no comparison with previous years was available.

The regulator called for the training system to be "reformed to secure a reliable supply of doctors and educators." It said trainers, educators, and doctors in training "need more support to protect their time for supervision, learning, and development."

Northern Ireland

Palmer described as "particularly worrying" the results from Northern Ireland, where doctors reported "higher rates of burnout, difficulties in providing patient care, and working more overtime." One in four doctors (26%, against a UK average of 18%) said they were at high risk of burnout, and 54% (UK average 40%) said they found it difficult to provide patient care at least weekly.

Alan Stout, chair of BMA's Northern Ireland Council, said, "The report is another reminder that doctors in Northern Ireland are struggling to deliver patient care because of intolerable workloads that would be deemed unacceptable elsewhere in the UK."

Stout added "All this needs meaningful actions and engagement with the workforce, rather than the current default response of promises of change that fail to materialise."

Elisabeth Mahase, *The BMJ*

Cite this as: *BMJ* 2025;390:r1671

overall waiting list." They added, "NHS staff have made significant progress in reducing waiting lists—down by more than 260 000 since June 2024—and this is driven by the fact that 2300 more patients are receiving treatment every day compared with last year."

Responding to the transparency concerns, they said validation was made "crystal clear in NHS England's published monthly waiting list data."

A Department of Health and Social Care spokesperson said at least 85% of the fall was due to extra activity and 15% due to unreported removals.

Kate Bowie, *The BMJ*

Cite this as: *BMJ* 2025;390:r1753

The figures reflect the NHS struggling to keep pace with demand
Becks Fisher (below)

What is the SRY gene test, and should it be used to test female athletes?

Experts question the science behind World Athletics' decision to subject female category entrants to a gene test. **Jacqui Wise** reports

What's happening?

New regulations coming into effect on 1 September mean all athletes wanting to compete in the female category in world ranking competitions will have to take a one time cheek swab or blood test for the SRY gene. World Athletics president Sebastian Coe said the decision was made to ensure "the integrity of women's sport." World Boxing also approved the use of the SRY test in May.

What is the SRY gene?

SRY stands for sex determining region Y gene, and it's usually found on the Y chromosome. If a human embryo has XY chromosomes, then at six weeks of development the SRY gene triggers a cascade of events involving around 30 genes that lead to the formation of testes. The testes then produce hormones, including testosterone, leading to male development.

Why is it relevant to performance?

Evidence shows that athletes who were born male and passed through male puberty generally have advantages over those born female (with XX chromosomes and no SRY gene). Additionally, female athletes with higher circulating levels of testosterone may also have advantages in some sports. This has led to a drive to keep women's sports reserved for "biological females."

Is the test a good way to determine whether somone is biologically female?

Robin Lovell-Badge, principal group leader at the Francis Crick Institute in London, says that relying on a test for the SRY gene alone is too simplistic. "It only reveals whether the individual has the gene," he says. "It doesn't necessarily indicate how male or female the individual might be without other tests."

He adds, "For an athlete, the most critical factor here is the effect of androgens on muscle and bone, but its production and action is rather a long way down the gene pathway from SRY activity."

Lovell-Badge notes that, while SRY is usually on the Y chromosome, and while most XY individuals are male and most XX individuals are female, around 0.8% of the population have atypical sex development (chromosomal, gonadal, or anatomical), with one of a set of congenital conditions commonly referred to as differences of sex development (DSD).

What does World Athletics say?

It maintans the SRY gene is a "reliable proxy for determining biological sex." But Andrew Sinclair, who discovered the SRY gene in 1990, believes "the science does not support this overly simplistic assertion."

Writing in the online magazine *The Conversation*, Sinclair said, "Using SRY to establish biological sex is wrong because all it tells you is whether or not the gene is present."

Sinclair, who is deputy director of the Murdoch Children's Research Institute and professor of translational genomics at the University of Melbourne, said the test didn't tell you how SRY was functioning, whether a testis had formed, or whether testosterone was produced and, if so, whether it could be used by the body.

Is there a risk of false readings?

A page of frequently asked questions published by World Athletics describes the test as "extremely accurate," adding that "the risk of false negative or positive is extremely unlikely." But Sinclair noted in his article that the tests were delicate. "If a male lab technician conducts the test he can inadvertently contaminate it with a single skin cell and produce a false positive SRY result," he wrote, adding that no guidance was given on how to conduct the test to reduce the risk of false results.

What happens if the test is positive?

People who test positive will be able to compete in the female category in non-world ranking competitions or in a category other than female. They will also be able to seek another test or further assessment.

World Athletics says individuals who test positive but have complete androgen insensitivity syndrome and therefore have not gone through male sexual development will be allowed to compete.

Jacqui Wise, Kent

Cite this as: *BMJ* 2025;390:r1698

Strategic sanity demands we protect what works
Hazel Cheeseman

Every £1 spent on cessation services saves £2.27 in healthcare costs and productivity losses
Lion Shahab

Cuts to stop smoking services risk harming thousands and worsening maternity outcomes, doctors warn

EXCLUSIVE As the UK aims for a future smoke-free generation, help for today's smokers to quit is at risk of stalling. **Gareth Iacobucci** reports

Vulnerable patients in England are at risk from cuts to NHS smoking cessation services, healthcare leaders have warned.

In an open letter to NHS England, published on bmj.com, senior figures from medical royal colleges and the BMA said that the country's hard won progress in cutting tobacco use was under threat from severe budget cuts being imposed by the government on integrated care boards (ICBs).

The warning came in response to new data showing that six acute care hospital trusts and two mental health trusts in England have already decommissioned smoking cessation services (see table below).

Across England 83% of ICBs—which commission and fund smoking cessation services—have reported uncertainty over future funding in the wake of being ordered to cut their running costs by 50%.

A survey of ICBs by Action on Smoking and Health, conducted with Cancer Research UK, found that most NHS trusts have fully implemented tobacco dependence treatment services (TDTS) for pregnant women (91% of trusts), inpatients in mental health facilities (71%), and patients in acute hospitals (80%), after a national directive in 2019.

ASH has warned, however, that this success could be reversed, as funding for the services is not ringfenced.

Hazel Cheeseman, chief executive of ASH, said, "Tobacco treatment in the NHS is one of the rare interventions that saves lives, cuts costs, and reduces inequalities—yet it's under threat just at the point when the NHS wants to 'shift to prevention.'

"We've made real progress, but without sustained funding and leadership we risk turning a public health success into a missed opportunity. Strategic sanity demands we protect what works."

Nick Hopkinson, chair of ASH and professor of respiratory medicine at Imperial College London, has questioned why leaders would cut services that "unlike almost any other healthcare intervention actually saves money in year."

He said, "When people quit smoking their risk of acute events—heart attacks, strokes, and acute exacerbations of chronic obstructive pulmonary disease—falls rapidly.

"If smoking cessation services are not going to be protected, healthcare leaders need to explain what budget line they are proposing to use to pay for the additional, preventable activity needed to treat smokers who would otherwise have quit smoking but instead are ending up in emergency departments."

ASH's data came from a survey sent to ICB tobacco control leads in April and May 2025. A total of 32 of 42 ICBs responded in full, a 76% response rate. Respondents provided ICB level data and trust level data for hospitals in their area.

Results already delivered

In hospitals and mental health trusts TDTS often include nicotine replacement therapy, behavioural support, and, depending on local policies and staff training, vaping. In maternity services incorporation of vaping is less widespread, with nicotine replacement therapy still the primary option.

In their open letter to NHS England, medical leaders pointed out that embedding smoking cessation support in NHS hospitals had already led to fewer stillbirths and miscarriages.

"These services are already delivering results, with rates of smoking during pregnancy declining by an astonishing 41% since 2019-20 (from 10.4% to 6.1%) following a period of stagnation," they said. "This means fewer cases of stillbirth, miscarriage, and babies born with low birthweight, and as a result fewer antenatal appointments, overnight admissions, and ultrasound scans, and shorter hospital stays postnatally."

Using modelling from its tobacco dependence treatment calculator, ASH estimated that if only 50% of smokers (690 465) identified through the NHS system were referred to TDTS instead of the 90% (1 242 837) who actually were in 2023-24, there would have been almost 17 000 more all cause readmissions to hospital within a year, around 6500 more emergency presentations within 30 days, and an additional 8845 lives lost that year.

In light of the data it collected from ICBs, ASH urged the government and the NHS to protect funding for TDTS.

ICBs must also be held to account for implementation and maintaining

PROGRESS IN IMPLEMENTING TOBACCO DEPENDENCE TREATMENT SERVICES (TDTS) BY TYPE OF TRUST

	Acute trust	Mental health trust	Maternity unit
Number of trusts providing TDTS	113	45	103
Number that have fully implemented TDTS	90 (80%)	32 (71%)	94 (91%)
Number that have partly implemented TDTS	13 (12%)	10 (22%)	7 (7%)
Number that have not implemented TDTS	4 (4%)	1 (2%)	2 (2%)
Number that have decommissioned TDTS	6 (5%)	2 (4%)	0

Source: ASH survey data from ICB tobacco control leads

When people quit smoking their risk of acute events falls rapidly
Nick Hopkinson

the services and be supported in expanding them into emergency departments, outpatient departments, preoperative care, and paediatric services, the campaigning group said.

Maintaining progress

The UK has long been considered a world leader in tobacco control, including by recently tabling the Tobacco and Vapes Bill to prohibit the sale of tobacco to anyone born after 1 January 2009.

The government has set a target to reduce the overall prevalence of smoking to 5% by 2030.

Experts emphasise that, to maintain progress, the NHS must play its part in supporting current smokers, particularly those in deprived areas.

Lion Shahab, professor of health psychology and codirector of the UCL Tobacco and Alcohol Research Group, said that while harm reduction, particularly through e-cigarettes, has helped thousands of smokers quit cigarettes, this alone would "not be enough" to achieve the 2030 target.

Commenting on ASH's data, Shahab said, "The lack of a ringfenced budget and shifting priorities following the abolition of NHS England threaten to stall progress. Despite smoking rates falling by nearly 60% since the turn of the century, there are signs that progress may be plateauing and health inequalities could be widening again.

"Investing in stop smoking services is a clear win: for every £1 spent, the UK saves £2.27 in healthcare costs and productivity losses.

"Investing in NHS tobacco dependence treatment not only makes economic sense, it will also help reduce health inequalities, save thousands of lives, and bring the goal of near eradication of smoking by 2030 within reaching distance."

Derailing the prevention agenda?

In their letter the leaders noted the government's commitment to prevention in its 10 year health plan.

"If these services are lost, it will set the NHS prevention agenda back five years and result in tens of thousands of vulnerable patients being abandoned to a deadly addiction," they said. "Among the hardest hit will be patients with severe mental illness, who have some of the worst health disparities of any group in the population, largely because of smoking."

They argued that if the government could not "shift to prevention" to reduce smoking—the leading cause of preventable death and disease with a proven low cost treatment—then "how will we make that shift on other problems where benefits may take longer to accrue?"

Commenting on the report, a Department of Health and Social Care spokesperson said, "This government is committed to supporting smokers to quit through a range of services.

"As set out in the 10 year health plan, we are working to ensure all hospitals integrate smoking cessation interventions into routine care and ICBs continue to have access to funding to support the provision of tobacco dependency treatment as part of their 2025-26 allocations."

In 2023 the prevalence of smoking among adults aged 18 or over in England was 11.6%, around six million people. This was a reduction from 12.7% in 2022 and continues a general downward trend observed since 2011 (19.8%). Prevalence is highest in the most deprived areas (14.3%) and lowest in the least deprived (9%)

The spokesperson added that the government was also investing an additional £70m in 2025-26 to support stop smoking services led by local authorities in England and was continuing national schemes to support the use of vapes as quitting aids and to support women who smoke to remain smoke-free during pregnancy.

A TARGET has been set by the government to reduce overall smoking prevalence to 5% by 2030

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2025;390:r1732

NEWS ANALYSIS

UK's tuberculosis crisis deepens as doctors report rise in cases in prison

As cases among inmates continue to increase, the UK looks set to lose its WHO low incidence status. **Kate Bowie** reports

Consumption ridden jails might conjure a Dickensian image, but a rise in tuberculosis cases in prisons is very much a modern concern for UK doctors. England recorded 5480 cases of the disease in 2024—up 13% from 4850 in 2023 and continuing an upward trend seen since 2020.

In the second quarter of this year (from April to the end of June) the government was notified of 1469 people with TB, up from 1400 cases in the same period in 2024. And a higher proportion of those cases were recorded in people who were or had been in prison than in the same quarter in 2024.

The figures are echoed by feedback from doctors working with patients in prison. "We have heard reports from GP members working in prisons of a rise in cases," Kamila Hawthorne, chair of the Royal College of General Practitioners, told *The BMJ*. "The rise in tuberculosis cases over the past year appears to be localised geographically."

Recent data from the UK Health Security Agency (UKHSA) support this. TB continues to be associated with deprivation and is more common in large urban areas. Of the 2770 UK cases reported in 2025 so far, 35% (977) have been in London.

While cases in the capital rose by 10% (85 additional notifications) from the first to the second quarter of 2025, the East Midlands saw the largest increase in that period, with 32% more cases (58 additional notifications) by the second quarter.

Access to game changer regimens remains limited across most of Europe
Askar Yedilbayev

Having hundreds of patients who have been diagnosed but are not being treated sets back GPs' hard work
Tamara Hibbert

Risk awareness

Marc Lipman, chair of the UK Joint Tuberculosis Committee and professor of medicine at University College London, told *The BMJ* that doctors should be aware of TB when seeing patients who have recently left prison, "as this increases their risk of having TB up to four times that of the general population."

Lipman added that it was easy to see why. Some TB symptoms, such as a chronic cough or a small lump in the neck, can be easily misread or ignored. "It might be picked up when [a prisoner] starts losing weight," he said. "But by that point, he's shared a cell with five others"—and those cellmates also have the opportunity to spread the infection.

Kate McLintock, a prison GP and National Institute for Health and Care Research lecturer, said old and poorly ventilated buildings, a lack of TB awareness among prison staff, and difficulty in maintaining continuity of care inside prisons were also likely to have contributed to a spike in cases. She said people in prison often lacked trust in health and prison systems, "which can compromise detection and treatment of disease."

Latent TB, which occurs when the bacterium that causes the infection lies dormant for many years, is another factor affecting prison cases. Lipman explained, "The stress of incarceration does reactivate TB." And the number of foreign nationals from countries where TB is more prevalent—such as India, Indonesia, and China—who are imprisoned in the UK may also play a part, he said.

Recent figures from the Ministry of Justice show that the number of foreign prisoners in UK jails has reached its highest level since 2013. As of 20 June 2024 "foreign national offenders" represented 12% (10 722) of the total prison population.

"There is an inescapable fact that if people come from a place where TB is really prevalent to somewhere where it's much less, and they can bring an infection with them . . . then of course there'll be more [cases]," said Lipman. "It is something that the TB community definitely struggles with because of the optics of that. But I think there is something to be said about being honest about it."

Currently, people coming from certain countries to the UK for at least six months are screened for TB as part of the UK visa application process. But Lipman warned that this process missed thousands of people who may have latent TB.

In March the outgoing chief executive of the UKHSA, Jenny Harries,

LONDON has had **977** of the **2770** UK cases reported so far this year

warned that if TB cases continued to increase at the current trajectory the UK would lose its World Health Organization low incidence status. A few months on, said Lipman, the current situation was even starker.

"We will almost certainly lose our low incidence status," he warned. "We tend to think of TB as a bellwether. It is important, because if you're seeing more infectious diseases it makes you wonder about control and healthcare."

Drug shortages

While the BCG vaccine is available for TB, it is not part of the routine childhood vaccination schedule in the UK unless a child is at increased risk of TB exposure. Instead, months long antibiotic regimens are the standard treatment for TB. Last month, however, the government issued a warning alert that seven antimicrobial drugs that were used to treat TB would be subject to shortages until at least the end of 2025.

Tamara Hibbert, a GP and local medical committee chair for Newham in east London, told *The BMJ* that the shortage had led to drugs being prioritised for patients with active TB, leaving locals who had latent TB without treatment. She said, "GPs in Newham experience shortages of TB drugs on an almost annual basis, and when this occurs it places them in a difficult position with

TB is a bellwether—more makes you wonder about control and healthcare
Marc Lipman

patients who have latent TB."

Hibbert added that these patients, often from deprived communities, were left "understandably concerned about their diagnosis and worried about the fact that their GP cannot give them a timeline for the start of treatment. Having hundreds of patients who have been diagnosed but are not being treated sets back the hard work that GPs have been doing."

Lipman said that, while TB drug shortages had been occurring for years, they had "probably never quite been as bad as they've got to now."

Askar Yedilbayev, a WHO regional TB adviser, added that European countries also lacked access to modern preventive treatment regimens, creating a "major barrier for national TB programmes that wish to scale up preventive treatment."

Rifapentine, a key component in several short course TB preventive treatment regimens and recommended by WHO, is not registered by the European Medicines Agency and is not available in the UK.

Yedilbayev added, "These regimens are game changers in TB prevention, as they are shorter and better tolerated than the traditional 6-9 month courses. However . . . its access across most of Europe remains very limited."

McLintock told *The BMJ* that the work of the 2021-26 TB action plan for England—the UKHSA's plan to tackle the threat—was already visible. She highlighted its clear and updated guidance around prevention, detection, and treatment and the educational events and promotional materials for prison staff.

This April the UKHSA launched a call for new evidence for the 2026-31 action plan to help it "develop targeted strategies to tackle rising TB rates." For now, Lipman warned that the UK was "certainly not out of the woods—we're nowhere near normal at the moment."

Kate Bowie, *The BMJ*
Cite this as: *BMJ* 2025;390:r1709

Lucy Letby hospital is slammed over emergency care failings

The NHS hospital where the neonatal nurse Lucy Letby worked has been censured by England's healthcare regulator over failings in emergency care.

The Care Quality Commission (CQC) identified "critical gaps" in treatment of sepsis, "visibly dirty equipment" and poor infection control, and corridor care that compromised the safety of patients in urgent and emergency services at the Countess of Chester Hospital NHS Foundation Trust.

After its investigation in February the CQC served the trust with a warning notice, after it concluded that services fell below legal standards. It said that the trust had failed to make improvements after concerns were identified in previous inspections, and it has rated care in emergency services as "inadequate."

Letby, a former employee of the trust, was found guilty of killing seven babies and attempting to kill seven others while working at Countess of Chester hospital from June 2015 to June 2016. She is currently serving 15 whole life terms in prison, having lost two appeals, and is asking the Criminal Cases Review Commission (CCRC) to consider her case.

Panel of experts

An investigation by an international panel of experts into the cause of injury and death of the babies claimed that there was "no medical evidence to support malfeasance" and that the incidents were the result of "either natural causes or bad medical care" at the hospital, in a report sent to the CCRC in February. But lawyers for families whose babies Letby was convicted of killing or assaulting subsequently questioned the panel's findings.

The CQC's latest inspection report said that governance and leadership of the hospital's emergency care services was "not effective, with repeated failures to address known risks such as outdated equipment, and poor audit outcomes."

We are committed to supporting our teams to ensure sustainable improvements
Jane Tomkinson

It found that departmental level leadership "lacked clarity and consistent visibility" and that accountability was weak. Some staff had told inspectors that "they did not always feel that they could raise their concerns."

Responding to the report, the trust's chief executive officer, Jane Tomkinson (left), said, "We are committed to supporting our teams to ensure that the actions we take lead to sustainable improvements in our services."

Kate Bowie, *The BMJ*
Cite this as: *BMJ* 2025;390:r1703

Patients receive treatment last week in the cholera isolation centre at a refugee camp hospital near Tawila city, Darfur

THE BIG PICTURE

Cholera crisis in wake of Sudan war

Doctors working with the charity Médecins Sans Frontières (MSF) in Sudan have treated more than 2300 patients with cholera in the past week and have seen 40 people die from the infection. Sudan, which has been engulfed by civil war since April 2023, has been experiencing a cholera outbreak for more than a year, with around 100 000 suspected cases and more than 2470 related deaths reported.

Tawila, in North Darfur state, has seen the worst effects, as 380 000 people have fled fighting in the nearby city of El Fasher. They are surviving on 3 L of water a day, less than half the emergency minimum of 7.5 L needed for drinking, cooking, and hygiene.

Sylvain Penicaud, MSF project coordinator, said, "Families often have no choice but to drink from contaminated sources. Just two weeks ago a body was found in a well inside one of the displacement camps. It was removed, but within two days people were forced to drink from that same water again."

As people flee the fighting, cholera is spreading into Chad and South Sudan.

Elisabeth Mahase, *The BMJ*

Cite this as: *BMJ* 2025;390:r1756

AFP/GETTY

EDITORIAL

Criminalising ecocide

Individuals should be held to account for environmental damage

In May 2025, Scotland joined a growing global movement by introducing a bill to criminalise "ecocide."[1] Twelve countries have already criminalised ecocide, with Belgium becoming the first EU member state to do so in 2024.[2] This followed a revision of the EU environmental crime directive, which now requires EU countries to criminalise conduct "comparable to ecocide."[3] Other countries that have introduced ecocide bills include Argentina, Dominican Republic, Italy, the Netherlands, and Peru.[4-7]

The term "ecocide" was coined in 1970 by biologist Arthur Galston, who condemned the large scale environmental devastation caused during the Vietnam war. Between 1962 and 1971, US forces sprayed the herbicide Agent Orange across large parts of Vietnam, defoliating forests and destroying ecosystems on which humans depended. Agent Orange became associated with several serious health problems, affecting millions of US and Vietnamese civilians and war veterans, as well as their offspring.[8]

Defining the crime of ecocide has been challenging, but a milestone was reached in 2021, when an independent international expert panel elaborated a legal definition. The panel proposed amending the statute of the International Criminal Court (ICC) to include: "unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts."[9] This definition could encompass actions such as massive deforestation, oil spills, and extensive water and soil pollution resulting from resource extraction. Although non-binding, this definition opens a door towards a criminalisation of ecocide around the globe.

Acts such as massive deforestation, oil spills and extensive oil pollution could be criminalised

Philippe Sands, professor of the public understanding of law, University College London Faculty of Laws

Catherine Savard, DPhil in law researcher, University of Oxford
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International crime

The campaign to make ecocide an international crime passed another step in December 2024, when a coalition of three island states formally proposed adding ecocide to crimes within the jurisdiction of the ICC. The countries in the coalition—led by Vanuatu in the South Pacific—all face existential threat from anthropogenic rises in sea level.

Established in 1998 and located in The Hague, the ICC is the only permanent institution for prosecuting individuals for four core international crimes—genocide, crimes against humanity, war crimes, and aggression. Importantly, individuals can be held accountable irrespective of their official capacity, including state officials, armed group leaders, and corporate decision makers.

Adding ecocide as a fifth crime within the jurisdiction of the ICC would be an important step towards accountability for serious environmental damage. It would also reflect a more ecocentric approach to the law. Currently, international criminal law is anthropocentric in its approach[10]; environmental harms are generally prohibited only insofar as they affect humans. By contrast, ecocide would criminalise harm to natural elements, independent of the effect on humans, and affirm the intrinsic value of the natural world.[11 12]

Under the ICC framework, states remain primarily responsible for investigating and prosecuting core crimes, and a case is admissible before the ICC only if states fail to do so. This reinforces the need for domestic efforts to support international criminalisation of ecocide.

Domestic action

The UK has an opportunity to take on a leadership role by adopting its own legislation. A bill to criminalise ecocide in the UK was introduced in 2023 but has not moved forward. A domestic prohibition on ecocide could enhance the UK's current environmental legal framework and help preserve ecosystems threatened by human activity.

Criminalising ecocide would bring various benefits. The spectre of prosecution of decision makers—whether public officials or corporate executives—may provide a more powerful deterrent than attributing responsibility to organisations alone. Moreover, criminal law carries expressive power. Treating environmental harm not merely as a regulatory issue but also as a criminal act conveys a strong message about societal values and priorities. This can change consciousness and drive meaningful changes in human behaviour and policies.

A domestic prohibition on ecocide in the UK has wide support. In an Ipsos survey conducted in 2024 among 22 000 participants from G20 countries, 72% of respondents supported the criminalisation of ecocide.[13] In the UK, this figure was 78%.[13] Embracing the campaign for the criminalisation of ecocide is an opportunity for the UK to act on this consensus and position itself as a global leader, inspiring other nations to protect our planet and ultimately ensuring a sustainable future for generations to come.

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EDITORIAL

WHO pandemic agreement

UK must step up its preparedness plans

The adoption of the pandemic agreement at the World Health Assembly in May 2025 marks a welcome commitment to global solidarity in anticipation of the next pandemic.[1]

Adoption has taken almost three years, but the agreement now provides an improved set of principles around human rights, equity, solidarity, and science based evidence to underpin pandemic preparedness planning and a governance framework to implement across World Health Organization member states.[1]

Bodies such as the International Pandemic Preparedness Secretariat have called for immediate national implementation.[2] However, some key challenges remain, such as agreeing on the pathogen access and benefit sharing (PABS) annex, and subsequent ratification and country implementation will require determined leadership at a time when cuts to WHO and wider global health funding are dominating agendas.

The PABS annex aims to support equitable access to pandemic related health products (eg, vaccines, therapeutics, and diagnostics) during any future pandemic in return for faster access to pathogens and genetic sequences for the developers of these products. However, this is contentious and subject to ongoing lobbying and dilution.

Improving UK preparedness

Pandemic preparedness requires many elements, including good executive governance, a resilient public health system, a vibrant research and innovation sector, and public confidence in both policy making and science. The UK's national inquiry into the covid-19 pandemic is still ongoing, but many important lessons and practical steps are already evident.

CHRISTOPHER BLACK/WHO/AFP/GETTY IMAGES

UK investment into pandemic preparedness has fallen by £3bn

The inquiry's first module, which considered resilience and preparedness, was particularly critical of the lack of cohesion of communications and decision making across government departments.[5] The UK's pandemic scenario exercise planned for autumn 2025 will provide an initial test of whether these governance gaps have been addressed.[6]

Public health and social interventions such as social distancing, face coverings, self-isolation, and school closures were central to the pandemic response. However, they have been criticised for lack of precision and proportionality; resulting in a polarisation of views and a decline in public confidence.[7] Nevertheless, public health measures will remain fundamental to the response to future pandemics.

Overall the UK response improved health outcomes. It was based on key research capacities built over many decades, including the clinical, public health, and biomedical research sectors and highly skilled and experienced researchers funded by entities such as the National Institute for Health and Care Research (NIHR) and UK Research and Innovation (UKRI).[8]

The chief medical officers' report highlights the continued need to support ongoing research ready to deliver prioritised, focused national research programmes through pre-established and coordinated funding mechanisms.[8] However, UK investment into pandemic preparedness research has stalled, with government funding falling by £3bn since the peak of covid funding in 2020.[12] Plans for a new government funded vaccine manufacturing and innovation centre were shelved when it was sold to drug company Catalent in 2022, and AstraZeneca's planned investments in a Liverpool vaccine plant were also axed because of state funding cuts.[13 14]

New funding calls through UKRI and NIHR for interdisciplinary research for epidemics and clinical trial platforms[15 16] are welcome progress, and the latest spending review outcomes indicate increased resource for science.[17] The government's new framework for research on pandemic preparedness, prevention, and response indicates an improved strategic approach,[18] in alignment with the 2025 implementation report on the UK biological security strategy.[19]

The achievement of adoption of the WHO Pandemic Agreement by 124 member states, should not be downplayed. However, given the weakness of the language, the lack of agreement on the PABS annex, US withdrawal from WHO membership, and major reductions in global health investments, global solidarity now needs bolstering with strong multilateral leadership. The UK has already spearheaded the "100 days mission," aiming to have diagnostics, drugs, and vaccines available within the first 100 days of a pandemic.[20]

With the UK's ambition to be a science superpower[17] and its world leading scientific track record,[21] it should now fill the remaining gaps in national preparedness and contribute globally to implementing the principles of the pandemic agreement.

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BANKING BABY TEETH: companies may be misleading with "outrageous claims"

Experts are concerned by claims made about the value of retaining stem cells from milk teeth—including possible future treatments for autism and diabetes. **Emma Wilkinson** reports

Parents are spending thousands of pounds to bank stem cells from their children's milk teeth—but the recipient companies' claims about their future medical value are unproved and potentially misleading, an investigation by *The BMJ* has found.

The three UK companies advertising tooth banking services tell parents that milk teeth are a "valuable" source of stem cells, with the ability to repair tissue cells throughout the body.

Their claims include that these stem cells are already being used in treatments for autism and diabetes. They also point to current research using stem cells in multiple sclerosis, myocardial infarction, and Parkinson's disease.

But several experts have told *The BMJ* that they are concerned about the claims being made, which risk exploiting parents—with the promise of a treatment for autism deemed particularly outrageous.

The BMJ found that the three companies in the UK (see box 1) offering tooth stem cell banking—BioEden, Future Health Biobank, and Stem Protect—all operate through one laboratory. The Advertising Standards Agency (ASA) says it will review concerns we have raised about how the service is promoted on their websites.

In response to *The BMJ*, Future Health Biobank says it is looking at how information on its site is presented in order to ensure "readers can clearly distinguish between client experiences and formally published clinical outcomes."

Banking baby teeth

Tooth stem cell banking is also known as dental pulp cell banking. It involves parents collecting and sending lost milk teeth to a laboratory where the dental pulp is "digested" and the cells cultured until "a sufficient number of stem cells are present." They are harvested, counted, and subjected to "viability and sterility" testing, before being cryopreserved (see box 2).

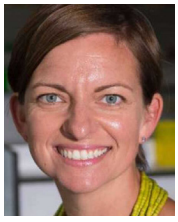
Stem cells were first isolated from teeth in 2000, and less than a decade later companies began to offer tooth stem cell banking. These stem cells are "especially valuable because they are younger and healthier," Future Health Biobank says.

Current research is looking at the use of mesenchymal stem cells (see box 3)—such as found in bone marrow—in anaemia, autism, multiple sclerosis, myocardial infarction, Parkinson's disease, and type 1 diabetes, the companies offering the service explain.

Stem Protect also cites cleft palate repair, HIV/AIDS, knee cartilage repair, severe combined immunodeficiency, and sickle cell disease under a section of its website headed "What treatments are tooth stem cells used for?"

Consumers sign an agreement before being sent a collection kit when their child's tooth becomes wobbly. There is an initial cost of around £1900 and an additional annual storage fee of £95.

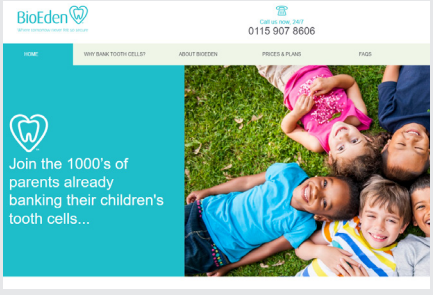
Yet several experts tell *The BMJ* it is not clear if parents are able to make a fully informed choice. There is no reliable advice or explanation of the science or the ethical matters around



There's no evidence to suggest stem cells stored from a child's milk tooth would ever be needed to treat that child
Jill Shepherd

Box 1 | Companies offering tooth stem cell banking in the UK

Future Health Biobank
https://futurehealthbiobank.com
Has been offering tooth stem cell banking since 2010. In 2019 it acquired BioEden. The laboratory that processes the cells is based in Nottingham.



BioEden
https://bioeden.com/uk
Marketed as the first company to offer tooth stem cell banking, it began offering the service in 2008. It is now part of Future Health Biobank but retains separate website and branding.

Stem Protect
www.stemprotect.co.uk
An independent company, Stem Protect is owned by a director of Business Waste Ltd. Future Health Biobank handles all the logistics and banking of sample cells.

BOX 2 | TOOTH STEM CELL SAMPLE COLLECTION AND STORAGE (ACCORDING TO FUTURE HEALTH BIOBANK)

Checks are done that the tooth is healthy, has been collected and transported in accordance with validated procedure, and is suitable for processing.

The dental pulp is digested and the cells are cultured until a sufficient number are present, or the maximum time to ensure the naivety of the stem cells present is not lost is reached—whichever is sooner.

The cells are harvested, counted, and viability and sterility testing done before they are cryopreserved in multiple vials, based on the number of viable cells present, ensuring a viable culture can be generated from each vial.

One vial is stored specifically for quality control testing—this involves thawing and culturing the cells and performing flow cytometry to confirm the presence of cell surface markers.

All samples are stored in vapour phase liquid nitrogen. Once cryopreserved, the sample could theoretically be stored indefinitely.

tooth stem cell banking apart from that offered by the companies. There is no public bank for tooth derived stem cells.

Diabetes cure

Jill Shepherd, senior lecturer in stem cell biology at the University of Kent, says there is not enough evidence to suggest that stem cells from teeth should be banked for autologous use. This option has been open to parents for many years, she explains, but it has not attracted the same attention as cord blood banking.

Shepherd points out that companies are selling the "potential" for something that is not yet borne out by the science. "There is a lack of evidence and a paucity of research using dental pulp stem cells to treat patients," she says.

Parents seeking tooth stem cell banking may be grappling with the diagnoses for which companies are promising future therapies, including diabetes and autism.

News late last year that scientists had successfully reversed type 1 diabetes using stem cells in a 25 year old woman caused a flurry of excitement on online forums among parents whose children have the condition.

In the study from China, reported in *Cell*, scientists extracted adipose cells from the patient and reverted them to an unspecialised state, before reprogramming them as pancreatic islet cells and reinjecting them into the patient's abdomen.

Less than three months after the procedure she was producing enough of her own insulin to achieve glycaemic control, which was sustained at a one year follow-up. A lesser reported detail was that she was already on immunosuppressants because of a liver transplant.

Alongside the enthusiastic online sharing of the Chinese research were queries about tooth stem cell banking. Is this something parents should consider as a future source of stem cells for treatment, they asked.

Shepherd explains that the small study used cells derived from fresh tissue, which could be different from the material available to extract from frozen samples. "All this detail matters," she says. "There's no evidence to suggest stem cells stored from a child's milk tooth would ever be needed to treat that child."

"Samples released for treatment"

Future Health Biobank says on its website that it has released 26 tooth stem cell samples for treatment. Examples of the conditions those stem cells were used to treat include autism, type 1 diabetes, and knee cartilage regeneration. All the samples went to private clinics in North America in 2016 and 2017.

The BioEden website says stem cell therapy has been described as the "next frontier" for treating both type 1 and type 2 diabetes.

The company states it has "already witnessed the remarkable evidence of these ongoing developments" among its customers.

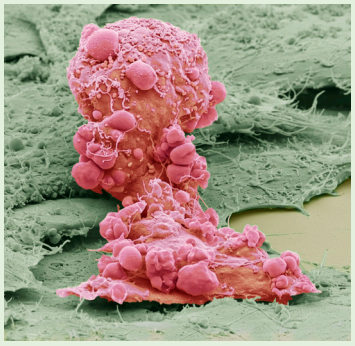
One 28 year old treated with dental cells has reported "decreased swelling, an improvement in energy levels, and a reduction in their insulin application," the website states. "Another member, who's halfway through their treatment, has had similar results along with improvements in their liver function, and is to begin their second course later this year," it continues.

"The best stem cells are young stem cells," which is why it is "advisable" to bank at the youngest age possible, it adds.

To my knowledge there is currently no active human clinical research using stem cells derived from baby teeth to treat diabetes Sufyan Hussain

No active human clinical research

Sufyan Hussain is an investigator on the UK arm of a global clinical trial evaluating stem cell therapy, the first of its kind to involve stem cell infusion for type 1 diabetes in the UK. A Medical Research Council funded clinician at King's College London, he also has type 1 diabetes and is concerned about what is being promised. "At present, there isn't a definitive answer regarding the optimal source of stem cells for future diabetes therapies.



STEVE GSCHMEISSNER/SPL

Box 3 | What counts as a stem cell?

There is debate among researchers as to the classification of non-embryonic stem cells. Areas of discussion include whether stem cells derived from dental pulp are comparable with those derived from bone marrow. The latter are generally known as mesenchymal stem cells—but that name itself is under scrutiny, with some academics suggesting they should be referred to as "stromal" or "signalling" cells to reflect their more limited capacity than the "stem cell" denomination infers.

"I've had inquiries from people with type 1 diabetes about banking cord blood but, currently, there's insufficient evidence to support or guide this practice. As research progresses and effective stem cell derived treatments become available, we'll gain greater clarity."

He adds that work on dental pulp stem cells is at a very early pre-clinical stage.

"The stem cells being studied in clinical settings are predominantly from either donated embryos or sources readily available from adults. To my knowledge there is currently no active human clinical research using stem cells derived from baby teeth to treat diabetes."

He believes that clear, evidence based information is essential, given the strong interest from people with type 1 diabetes and their families. "This highlights how emotive this matter can be, as parents naturally want the best possible outcomes for their children. While we remain hopeful about future treatments, there is also a risk that companies might exploit these hopes to generate additional revenue."

Diabetes UK shares his view, with a spokesperson for the charity saying, "Much more research is needed before we recommend people engage with commercial companies who are banking stem cells."

Lack of evidence and independent information

The interest in tooth stem cell banking as a commercial proposition is particularly strong in the US, where dentists offer to collect extracted teeth and preserve the dental pulp stem cells. A review of this practice published in 2020 noted that information online was dominated by the companies offering the service.

The websites of the companies and dental offices referred to in the review suggest possible future application for "pathologies as sweeping as diabetes, heart attack, cancer, autism, drug addictions, and aging." Yet the research quoted cites either clinical trials for non-dental mesenchymal stem cells or pre-clinical studies for dental derived stem cells.

"It is unclear whether this important difference is plain to even informed—but non-specialist—members of the public," the review says.

In the UK, while the laboratories extracting and storing the stem cells (see box 2) are regulated and inspected, Shepherd believes that more scrutiny of the information being used to promote the practice is needed. That is part of the ASA remit, but managing health information can be difficult when it can easily be changed or added to a website and then taken down quickly, she adds.

"There isn't much information on tooth stem cell banking out there for consumers, and what is out there mostly comes from the companies who have an interest in selling their product. The Human Tissue Authority (HTA) has guidance for parents looking to bank cord blood; it would be helpful to have guidance for dental pulp stem cell banking as well."

Shepherd also points out that the phrase "stem cell" is being used as a catch-all. Websites list many pages of research, but these are unlikely to be from dental derived stem cells. "It can be misleading. They use 'stem cell' as a term to get people to part with their money.

"Such decisions can be emotive for parents. But there isn't the information out there to inform them, and the regulators should take an active role."

A HTA spokesperson said, "The information on each party's website should be clear, accurate, and, where appropriate, evidence based, in line with UK advertising standards."

"Outrageous" autism claims

For some, the inclusion of autism in the list of conditions with potential for stem cell treatment is a red flag.

Tim Nicholls, assistant director of policy, research, and strategy at the National Autistic Society in the UK, said, "It's outrageous that tooth stem cell procedures are being advertised to parents with the false claim of 'treating' autism.

"Autism is not a disease or illness, it cannot be treated, and there is no cure. It is dangerous and morally bankrupt to target potentially vulnerable people with expensive procedures that could, in fact, cause harm."

He added, "There is no good evidence about stem cells and autism. There are also concerns about the regulation of stem cell procedures, which could be painful or even dangerous, depending on how they are administered."

Shepherd also believes parents should be given more information on what type of tests are done to validate that stem cells are present in the stored samples, that the samples have been collected properly, and on how long such samples can be viably stored.

In a statement, Future Health Biobank says it has a "robust ongoing storage stability validation programme" with quality control testing "to ensure that there is no deterioration in the integrity, viability, or future potential of biological samples."

Three companies, many claims, one laboratory

The three companies offering the service in the UK operate through one laboratory, the BMJ investigation found.

Future Health Biobank purchased BioEden Group in 2019. Both have presence in countries around the world including the US and Switzerland and have "stored samples from thousands of UK and international families."

Stem Protect has little detail on its website about its ownership. A spokesperson tells *The BMJ* it is an independent company "partnered with Future Health Biobank, who handle all the logistics and banking of sample cells."

It is dangerous and morally bankrupt to target potentially vulnerable people with expensive procedures that could cause harm Tim Nicholls

AMELIE-BENOIST/BSIP/SPL

Future Health Biobank says on its website that it has released 26 tooth stem cell samples for treatment

There is no listing on Companies House for Stem Protect but the spokesperson says the company is owned by Mark Hall. The responses came from Business Waste, a commercial waste management company that also lists Mark Hall as a director.

The HTA tells *The BMJ* that the laboratory run by Future Health Technologies was last inspected in November 2023. A spokesperson says, "Companies may operate multiple brands for commercial reasons while using a single licensed facility."

The BMJ has raised concerns about how the service is promoted on all three company websites with the ASA, including the details of samples being used in treatments and claims of how far advanced the research is in diabetes and autism. We also flagged that much of the research cited has not been done with stem cells from teeth. The ASA says it will review our complaint and that in the meantime "the advertiser has been provided with details about the complaint and has been advised to amend their advertising and an objective claims that they do not hold adequate substantiation for."

An ASA spokesperson says it has previously ruled on claims related to stem cell banking but there have been no formal rulings on dental pulp stem cell banking adverts.

"We don't have specific guidance for businesses advertising tooth stem cell banking. But our general advertising rules, and our rules on medicines, medical devices, and health related products, would apply to advertisers in this sector.

"This includes rules that advertisers must have evidence to back up any health claims made in their ad, and that medical claims can only be made for licensed products. Ads should be socially responsible and shouldn't discourage essential treatments for conditions for which medical supervision should be sought.

"And they also shouldn't mislead people by omitting key information or presenting information in an unclear way."

Future Health Biobank says that the examples given of use of stored samples were "customer testimonials relating to private applications of dental stem cells. These cases were not part of regulated UK clinical trials and we do not present them as such. A number of samples historically released by BioEden were processed for families based in Latin America, where a substantial part of the BioEden operation was located before it was acquired by FHBB."

The statement continues: "Releases may be used for various reasons, including within clinical trials abroad or as part of privately arranged treatments, depending on the jurisdiction and the medical providers involved. As such, outcomes may vary significantly, and we advise that such testimonials be viewed in this context.

"We are currently reviewing how historical information is presented online to ensure it reflects the correct geographic and regulatory context and that readers can clearly distinguish between client experiences and formally published clinical outcomes."

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Thousands of children without beds—what doctors can do

As parliament continues to debate welfare reform and the two child benefit cap, thousands of children in the UK don't have their own bed because their families can't afford it. It's a hidden public health crisis, writes **Sally Howard**, that doctors can help to solve

"I have only recently thought to ask about it," says Josh Meek, a GP partner working in a deprived region of Sheffield, speaking of patients' sleeping arrangements.

Published in September 2024, a report by the children's charity Buttle UK on the state of child poverty highlighted the growing crisis of bed poverty: children going without beds because their families cannot afford them.

This is an important concern, says its chief executive, Joseph Howes, because research shows that sleep has an important role in brain development and that children who lose as little as one hour of sleep a night can lose up to two years in academic progress.

"As a charity we help children who may be fleeing domestic abuse or who may be in temporary accommodation provided by councils," Howes tells *The BMJ*.

"We find that an increasing number of [these] children share beds with siblings, sleep on inflatable mattresses, or even sleep on the floor."

Meek tells *The BMJ* that Buttle UK's report rings true with what he is seeing in his practice. He recounts two recent cases: a young couple with a newborn living in emergency accommodation, forced to co-sleep with their baby because there was only one bed; and a family whom Meek referred to social services for assistance because their baby was sleeping on the sofa as they could not afford an appropriate cot.

He refers to his practice's social prescribing team in these cases and considers when it might also be appropriate to refer to safeguarding and social services.

Role doctors can play

Howes says GPs and paediatricians can help patients who may be facing bed poverty by asking specific questions to assess children's living situations. These include asking what the children's sleeping arrangements are and whether they have their own bed.

"GPs can identify local support services and organisations that can provide essentials like beds, furniture, and access to community activities and connect families in need with these resources," he says.

GPs can also advocate for policy changes that aim to tackle the root causes of child poverty, Howes adds, such as "increasing benefit levels to cover essential needs."

Meek agrees that he believes he has a growing duty to speak up "about the effects that deprivation and poverty are having on the health of large parts of our population."

However, Kamila Hawthorne, chair of the Royal College of General Practitioners, tells *The BMJ* that GPs can't keep being asked to pick up the pieces left by a lack of alternative support. She says, "We need to see more ambitious national policy to urgently tackle the many social factors contributing to widening health inequalities, as well as investing in and supporting vital frontline services, including primary care."

Housing crisis

Partly, Howes notes, the rise in bed poverty is due to a growing housing crisis that, at 30 September 2023, saw 69 680 households with children living in temporary accommodation in England (a 12.8% increase on the same date in 2022).

"Insufficient sleep also leads to more frequent negative emotions in children, weight management problems, growth issues, and increased frequency of illnesses," he adds.

Buttle UK offers grants to cover furniture, cookers, school fees, and laptops. From April 2021 to March 2024 a total of 1567 grant recipients (of 5060 contacted) responded to a survey conducted by the charity. Three quarters (76%) said they could not afford essential furniture, and half (50%) said they could not afford beds for their families to sleep in at night.

The findings followed a 2023 report by the children's charity Barnardo's, which found that more than a million children in the UK either sleep on the floor or share a bed with parents or siblings because their family cannot afford to buy furniture or to replace broken bed frames and mouldy linen.

A government spokesperson says, "No child should be in poverty—that's why our new cross government taskforce is developing an ambitious strategy to reduce child poverty and give children the best start in life." In June it announced that the planned publication of this strategy was being delayed from spring 2025 until the autumn.

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ROLE MODEL

Suhana Ahmed

The consultant psychiatrist talks to **Erin Dean** about her experience with postnatal depression and how she encourages other doctors to seek support

When consultant psychiatrist Suhana Ahmed gave birth in 2013 she had a long difficult labour followed by little sleep for months as her baby struggled with colic and reflux.

"I can see now there were a number of things that contributed to my postnatal depression (PND)," says Ahmed, who is deputy chief medical officer at West London NHS Trust. "But by the time Daniel was 6 months old I was suicidal. I had written suicide notes and I was probably days away from ending my life."

Talking about this personal and deeply traumatic experience has not been easy—but she has found that when she shares what she has been through, other doctors open up about their own challenges.

Even for those working in psychiatry, there remains stigma around doctors having mental health problems, says Ahmed, who is also a north west London higher trainee leadership and management tutor and Royal College of Psychiatrist London division chair.

But she strongly believes that talking honestly about difficult experiences helps challenge the idea that "doctors should be invincible," shifting the culture so that colleagues and future generations of doctors can be supported during difficult times.

Ahmed has shared her own experiences of PND, burnout, discrimination, and the complex juggling of motherhood and a career in medicine. Speaking up can be hard, she says, but it has brought warmth, support, and gratitude from other doctors.

Ahmed was the first student from her secondary school in east London to go to medical school. She loved studying medicine, but she didn't feel like she fitted in as she came from a family where money was always tight.

"My peers were off skiing or planning balls," she says. "I still lived at home and had a part time job to pay my fees. I had grown up wearing hand-me-down clothes, and I felt like an imposter. It was only when I qualified that I felt like I had found my place."

Ahmed works with a charity that seeks to widen the diversity of applicants to medical school. The Careers Office supports school or college students from disadvantaged backgrounds to access "prestigious" professions. She is also involved with an annual access to medicine course held at the Royal College of Psychiatrists.

When Ahmed returned from maternity leave, she initially felt unable to share her experience of PND, which included three weeks of care in a mother and baby unit. It took about five years, and to be in a more senior position, before she felt able to talk.

"I do a lot of work with trainees around wellbeing," she says. "When I speak about my experience, I will have people approach me afterwards or send an email, saying, 'We've never heard anyone talk about this. I'm so glad you did. There was so much I could relate to.' So, we are better at talking about the things that affect doctors than we were before, but we're still not there."

Her experience of being diagnosed with severe PND has improved the care she gives to patients. "It's made me a better doctor," she says. "I saw what was important to me as a patient. This included staff giving me time and the importance of hope. I learnt how slow recovery is—my full recovery took about 18 months."

When working with trainees, Ahmed emphasises that doctors are not invincible. "We have to tell our doctors it's okay to be vulnerable, it's okay to have gone through difficult periods. The best doctor doesn't mean the one that's never been unwell."

She also urges doctors to ask for help when they need it, to make connections with their colleagues and patients, and to be kind to themselves.

Erin Dean

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NOMINATED BY DEREK TRACY

"One of the Royal College of Psychiatrists core values is 'courage.' I cannot think of anyone who exemplifies this better than Suhana Ahmed. She has lived a career that is for others—whether her patients, their carers, or her colleagues. Su's efforts have been particularly supportive and nurturing to those who may have had less inherent advantage or privilege in their lives.

"She has been an outstanding advocate and mentor for women in leadership, particularly those from minority or disadvantaged backgrounds. I have never known her to be afraid to speak truth to power, and call out inequities that others might feel abashed by. It remains my privilege to be both her colleague and her friend—like many others."

Derek Tracy is chief medical officer and executive director for psychological professions at South London and Maudsley NHS Foundation Trust, and adjunct professor at King's College London.

NOMINATE A ROLE MODEL

To nominate someone who has been a role model during your medical career, send their name, job title, and the reason for your nomination to emahase@bmj.com

If you're struggling, you're not alone.

In the UK and Ireland, Samaritans can be contacted on 116 123 or email *jo@samaritans.org* or jo@samaritans.ie.

In the US, the National Suicide Prevention Lifeline is 1-800-273-8255.

In Australia, the crisis support service Lifeline is 13 11 14. Other international helplines can be found at www.befrienders.org.

CAREERS CLINIC

What can I do if someone starts filming me at work?

Inappropriate filming by the public is on the rise, **Elisabeth Mahase** hears what doctors can do

Report the incident

Alan Lofthouse, Unison deputy head of health

"Earlier this year, Unison found that one in seven healthcare workers had experienced unwanted filming or photography in the previous 12 months. Staff said these types of incidents left them feeling unsettled, intimidated, fearful, and vulnerable.

"They spoke of being filmed as they treated patients for cardiac arrests and that footage being livestreamed or put on platforms like TikTok. Someone had filmed a patient with serious injuries from a car crash, despite pleas from staff to stop. They had to be escorted from the scene by police.

"If an NHS worker finds themselves being filmed, they should politely ask the person why they're filming and tell them to stop. It's important that staff report what's happened and keep a record of all incidents to help demonstrate the growing threat.

"NHS employees should work together and with their unions to make sure managers take this problem seriously, provide solid support, and act properly against anyone threatening them at work.

"It's an offence to be a nuisance or disturb healthcare workers, and hospitals have the power to remove anyone creating a problem. The law should be clearer and stronger when it comes to people filming healthcare workers, particularly those out in the community. It shouldn't be left to individual staff members to tackle online harassment.

"Employers should make it clear that filming staff at work without consent is harassment and they will come down hard on anyone who indulges in this kind of threatening anti-social behaviour."

Explain why it's inappropriate

Sally Old, Medical Defence Union medicolegal adviser

"Patients have a legal right to record their consultations—but this should only be for their personal use and doesn't extend to other areas of the hospital or practice.

"While it can be unsettling to see someone take out their phone at the start of a consultation, it could simply be that they don't want to miss anything important. Although it's polite to ask, they don't need your permission to record a consultation if it's purely for personal use, which is outside the scope of data protection law.

"Even if you feel uncomfortable at the prospect of being recorded you wouldn't be justified in challenging the patient or refusing to continue—and bear in mind that any confrontation could also be recorded and used against you.

"On the other hand, recording in waiting areas, wards, or corridors threatens other patients' confidentiality, could compromise their dignity, and can be intimidating for healthcare staff. While these areas are publicly accessible, other patients have a reasonable expectation of privacy and must not be filmed without consent.

"If you believe someone is recording, you could politely ask them to stop and explain why it's inappropriate. If they refuse, however, or you are worried about your safety, you should report your concerns to a senior manager or security.

"Do look into your workplace's policy for specific guidance on what to do or contact your medical defence organisation for advice."

Involve senior staff or security

Myooran Nathan, senior medicolegal adviser for Medical and Dental Defence Union of Scotland

"In today's digital age, doctors are increasingly under public scrutiny. Being filmed without warning or consent can feel intrusive and unsettling, especially when criticism of the profession is widespread. It's important to remain focused on what matters most: the care of your patient.

"The presence of a camera should not alter the quality or availability of care. If filming doesn't interfere with the safe delivery of care, it may be best to continue as normal. If filming compromises safety, however, it can be tackled calmly and in line with your organisation's policy. Avoid confrontation, and, if necessary, involve senior staff or security.

"Patient confidentiality is another key consideration. Filming in shared spaces like waiting areas may inadvertently capture other patients, breaching their confidentiality.

"A doctor's own confidentiality is not protected in the same way when acting in a professional capacity, however, and their consent is not required as they aren't sharing their personal information. Should footage appear online, especially in a commercial or professional context, there may be grounds to challenge it.

"Ultimately, doctors should feel reassured: whether filmed or not, their professionalism and high standards of care are what matter most. Covert recording is always a possibility, so continuing to act professionally in providing a good standard of care to the patient is likely to mean that there is no cause for concern if you are being filmed."

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