# this week

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JONATHAN BRADY/PA/ALAMY

## COVID INQUIRY: **Poor planning cost lives**

The government must create an independent statutory body responsible for developing strategies for pandemic preparedness and response, in light of the widespread failures of the Conservative government, devolved administrations, and civil service during the pandemic, the UK Covid Inquiry's lead, Heather Hallett, has said in her first report.

Despite the UK's reputation of being well prepared for a pandemic, Hallett found that its 2011 strategy was outdated, untested, and, importantly, unable to adapt. "The UK prepared for the wrong pandemic," she wrote. "Had the UK been better prepared and more resilient . . . some of that financial and human cost may have been avoided."

Her report also raised major concerns about the lack of attention paid to the systems that would help test, trace, and isolate cases, the lack of diversity in the scientific advice received by ministers, and the lack of freedom and autonomy given to advisers to express differing opinions. This ultimately led to "groupthink," Hallett said.

She said, "I have no hesitation in concluding that the processes, planning, and policy of the civil contingency structures across the UK failed the citizens of all four nations. There were serious errors on the part of the state and serious flaws in our civil emergency systems. This cannot be allowed to happen again.

"Unless the lessons are learnt and fundamental change is implemented, the human and financial cost and sacrifice of the covid-19 pandemic will have been in vain."

The report emphasised the significant role played by the nation's poor health and the state of the NHS. "Going into the pandemic there had been a slowdown in health improvement, and health inequalities had widened. High levels of heart disease, diabetes, respiratory illness, and obesity and general levels of ill health and health inequalities meant the UK was more vulnerable," Hallett said. "Public services, particularly health and social care, were running close to if not beyond capacity in normal times."

The BMA's chair of council, Philip Banfield, said, "This report lays bare how, time and time again, ministers were told that we simply did not have enough staff or resources to cope with the predictable huge surge in demand for healthcare that a pandemic would bring. It shows just how many times governments ignored key findings," he said.

The government's lack of investment in

*(Continued on page 88)*

**Saleyha Ahsan, an A&E doctor and broadcaster, whose father died during the pandemic, and the BMA's Philip Banfield (left) address the media after the publication of the first covid inquiry report**

### LATEST ONLINE

- Dermatologist who falsified timesheets for two years is struck off
- Former surgeon is suspended for six months for operating without consent on four patients
- US sees 700% rise in number of patients without diabetes starting GLP-1 treatment

# SEVEN DAYS IN

## Junior doctors in England to enter formal pay talks with government

LUCY NORTH/PA/ALAMY

The health and social care secretary, Wes Streeting, has said there is a "deal to be done" with junior doctors in England, as both sides agreed to enter formal negotiations over a pay deal that could finally end their protracted industrial dispute.

The BMA's Junior Doctors Committee has asked for a 35% pay increase over time to restore pay to the equivalent of 2008 levels but has repeatedly emphasised that this could be achieved over several years. In a statement on 18 July after the latest meeting, the JDC co-chairs Robert Laurenson (left) and Vivek Trivedi (right) said, "We are pleased to announce that formal negotiations will begin on Tuesday 23 July. We have set an expectation that these will conclude by the time of our executive meeting on 16 August."

Streeting said he was pleased to enter formal negotiations after the latest "constructive meeting" with the committee. "This is a crucial step forward, as we work to end this dispute and change the way junior doctors are treated in the NHS," he said.

"This government has been honest with the public about the terrible economic circumstances we inherited, and I have repeated that message in meetings with the junior doctors. But I am encouraged by our early meetings that there is a deal to be done."

Gareth Iacobucci, *The BMJ* **Cite this as: *BMJ* 2024;386:q1603**

### CQC

**Regulator admits mistakes over new approach**

The Care Quality Commission's interim chief executive has admitted that the regulator "got things wrong" when implementing its new single assessment framework. Kate Terroni wrote to providers on 15 July to apologise, stating, "I know that the changes we've delivered so far are not what we promised. It's made things more difficult than they should be." The CQC has announced urgent and immediate actions, including more assessments and inspections, increased support for providers, and fixing and improving the provider portal.

### Workforce

**Nursing applications fall 27% in three years**

The Royal College of Nursing urged the new health secretary, Wes Streeting, to rescue the NHS long term workforce plan, as figures showed a further collapse in the number of students applying to study nursing in England. Figures released by the Universities and Colleges Admissions Service showed that the numbers applying to study nursing this year were down 8% from last year. Over the past three years applications have fallen 27%, from 45 740 in 2021 to 33 560 in 2024. The RCN has called for the return of government funded nursing degrees and the introduction of maintenance grants.

### Diabetes

**Call for integrated care for disordered eating**

A coroner has called on the UK government to remedy the lack of joined-up care for patients with type 1 diabetes with disordered eating (T1DE). A second inquest into the death of Megan Davison, a teacher, concluded that she had died by suicide in the context of T1DE. Alison McCormick, assistant coroner for Hertfordshire, wrote in her report, "There is no formal diagnosis for T1DE, no treatment pathway for T1DE, and no complete treatment pathway for diabetic ketoacidosis, an acute clinical emergency associated with T1DE caused by deliberate omission of insulin, which should be seen as an act of self-harm."

### Cannabinoids

**FDA warns about "copycat" snacks**

Companies are "putting the health of young children at risk" by illegally selling food products that contain tetrahydrocannabinol (THC), the main psychoactive component of cannabis, but are packaged to look like well known snack brands, the US Food and Drug Administration has warned. The regulator identified crisps, biscuits, and sweets that had "almost indistinguishable" packaging from popular brands and contained delta-8-THC. Namandjé Bumpus, the FDA's principal deputy commissioner, said, "The accidental ingestion and/or overconsumption of delta-8-THC containing products could pose considerable health risks."

### King's speech

**Health leaders welcome commitments on smoking**

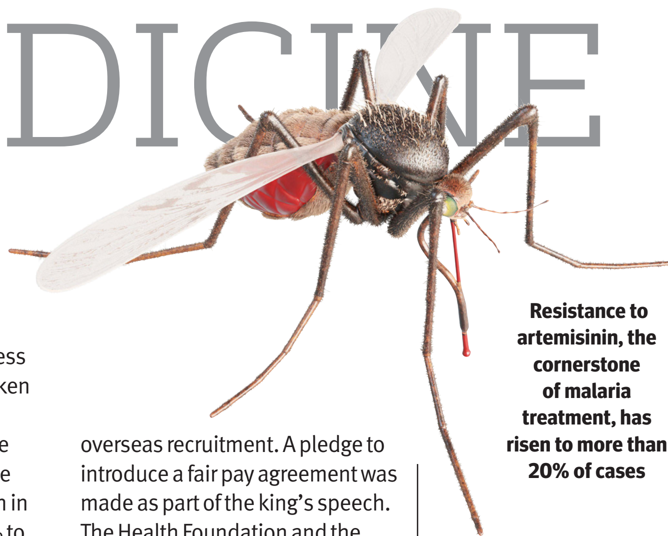
NHS and public health leaders have welcomed potentially "game changing" commitments to improve the nation's health made in the first king's speech of the Labour government. The pledges include reforms to the Mental Health Act and a law to create a smokefree generation. King Charles announced on 17 July that the government would bring in a bill to "progressively increase the age at which people can buy cigarettes" and to impose limits on the sale and marketing of e-cigarettes. Some health campaigners had feared that the proposals, first put forward by the previous Conservative government, might be dropped.

### Neonatal care

**Visual jaundice monitoring in babies to be reviewed**

The NHS Race and Health Observatory has commissioned a 12 month review into how jaundice is identified in ethnic minority babies. A study team from Manchester University NHS Foundation Trust will evaluate the accuracy of transcutaneous bilirubin monitoring devices in diagnosing jaundice in neonates of different skin tones and will compare them with subjective assessments. Jaundice often goes undetected or is inadequately identified in infants through visual assessment, studies show. Around 6 in 10 babies develop jaundice, and babies with darker skin are especially at increased risk.

# MEDICINE



Resistance to artemisinin, the cornerstone of malaria treatment, has risen to more than 20% of cases

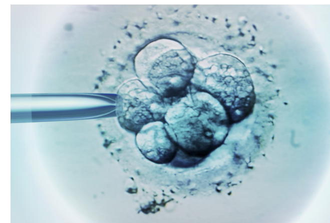
## Malaria

**Call for urgent action on drug resistance**

Twenty eight leading malaria scientists have warned that millions of lives are at risk unless urgent and radical action is taken to stop drug resistant malaria spreading in Africa. Resistance to artemisinin, the cornerstone of malaria treatment, has risen in some areas from less than 1% to more than 20% of cases in three years. The experts wrote in *Science* journal that the last time resistance to an antimalarial had spread in Africa it led to a tripling in the number of children dying.

## Fertility

**Age of starting treatment rises to just over 35**



The average age at which patients started fertility treatment in the UK was just over 35 in 2022, said the Human Fertilisation and Embryology Authority—nearly six years older than the average age of giving birth in England and Wales. Possible reasons include the pandemic, difficulties in patients funding their fertility treatment, fewer NHS funded cycles, and longer waiting times for investigation before getting NHS funded treatment. The authority's chair, Julia Chain, warned it was important to seek advice about fertility as soon as possible to help reduce delays.

## Social care

**Sector welcomes plans to improve pay rates**

Health analysts have welcomed commitments in a new 15 year workforce strategy for adult social care in England, including plans for pay reform and less reliance on overseas recruitment. A pledge to introduce a fair pay agreement was made as part of the king's speech. The Health Foundation and the Nuffield Trust said the government had an opportunity to finally reform social care and improve pay. They added that ministers should start by tackling illegal underpayment of wages and by urgently consulting on a separate minimum wage and a national pay scale.

## Physician associates

**Doctors and GMC clash again over PA description**

A fresh row has broken out between the GMC and doctors over how physician associates (PAs) should be described. The GMC sent a message on the Facebook Messenger service saying that PAs "study medicine" but not for as long as doctors. The message, which was copied and posted on X, prompted replies from doctors demanding it be retracted, as it was incorrect. The GMC subsequently issued a statement saying, "Unfortunately this reply on our Facebook Messenger service isn't correct. We don't describe PAs as 'studying medicine' and we're sorry for the confusion this has caused."

## Bladder care

**MHRA approves new medicine for adults**

The drug regulator the MHRA has approved vibegron (Obgemsa) to treat the symptoms of overactive bladder syndrome in adults. A trial in 1515 patients showed that it cut daily urination and incidents of incontinence when compared with placebo.

Cite this as: *BMJ* 2024;386:q1632

## STIs

Last year a total of 401 800 sexually transmitted infections were diagnosed in England, up

**4.7%**

since 2022

*[UK Health Security Agency]*

# SIXTY SECONDS ON . . . FREE REFILLS

**RE-FILL ME IN**

Restaurants and cafes in Wales could be banned from offering free refills of sugary drinks if new proposals from the Welsh government are accepted.

**NO SUCH THING AS A FREE DRINK?**

Potentially. Launching a consultation on the proposals, Eluned Morgan, Welsh health secretary, said, "I am committed to supporting people in Wales to make the healthy choice the easy choice when food shopping and eating out."

**NO MORE BOTTOMLESS FIZZ?**

The people of Wales may have taken their last free sip. The consultation is open until 23 September, and the plan is to lay draft regulations before the Senedd for approval by the end of 2024. Businesses will get a 12 month window to make any changes.

**KEEPING IT SHORT AND SWEET**

That's not all. The Welsh government also wants to restrict retailers from offering buy-one-get-one-free promotions on foods and drinks high in fat, sugar, and salt. Another proposal is to stop shops putting unhealthy foods in certain locations such as at the end of aisles or near the checkout.

**HITTING THE SWEET SPOT?**

Evidence is emerging that the UK sugar tax has had a dramatic effect. After the 2018 rollout of the soft drinks levy the amount of sugar consumed per person a day fell by 11 g in adults and 5 g in children, said a recent study published in the *Journal of Epidemiology and Community Health*. The consumption of free sugars remains higher than the 5% recommendation set by WHO, however.

**NO MORE SUGAR COATING**

That's very much the aim of a new petition seeking to remove all sugary beverage sponsorship from sport. The Hey Big Soda! campaign says companies such as Coca-Cola, a sponsor of the Paris Olympics, use "sportswashing" to hide health and environmental harms. Barry Popkin, professor of nutrition at the University of North Carolina, said marketing strategies targeting children and adolescents "perpetuate unhealthy consumption patterns, setting young people up for lifetimes of poor dietary habits and health risks."

Jacqui Wise, Kent

Cite this as: *BMJ* 2024;386:q1615

(Continued from page 85)

public health before 2020 continued into the pandemic, as "ministers failed to engage with public health specialists and utilise their expertise—particularly on test and trace options," he said.

**"There must be radical reform"**

Hallett set out eight recommendations—including the creation of an independent statutory body—that she said could be "implemented swiftly and at reasonable cost." These include radically simplifying the civil emergency preparedness and resilience systems, a new approach to risk assessment that evaluates a "wider range of actual risks," a new approach to developing strategies taking "proper account" of existing inequalities and vulnerabilities, and better data collection and sharing systems.

The UK must also carry out a statewide pandemic response exercise at least every three years and publish the outcome. Hallett said, "The UK will again face a pandemic that, unless we are better prepared, will bring with it immense suffering and huge financial cost, and the most vulnerable in society will suffer the most."

**Ministers failed to utilise the expertise of public health specialists**
Philip Banfield

A spokesperson for the group Covid-19 Bereaved Families for Justice UK said Hallett had not gone far enough on "how we can challenge, address, and improve inequalities and capacity of public services as opposed to just understanding the effects of these failures."

They added, "We ask for this government to produce a plan to address health inequalities and in its first 100 days conduct a cross departmental audit into pandemic preparedness."

CHRISTINA PAGEL, p 106

Elisabeth Mahase, *The BMJ*

Cite this as: *BMJ* 2024;386:q1602

# "No evidence" puberty blocker ban led to surge in suicides

Claims that a ban on the use of puberty blockers in the care of children and adolescents with gender dysphoria has led to a "surge" or "explosion" of suicides has been denounced as false by a leading expert in a government review.

Louis Appleby, professor of psychiatry at the University of Manchester and lead at the Centre for Mental Health and Risk, was commissioned by Wes Streeting, the health and social care secretary, to review data from an internal audit of deaths among current and former patients of the Tavistock and Portman NHS Foundation Trust's Gender Identity Service (GIDS).

Appleby concluded, "The data do not support the claim that there has been a large rise in suicide by young patients attending GIDS since 2020 or after any other recent date."

His review was published on 19 July, two days after the BMA Council debated, behind closed doors, a review of GIDS by Hilary Cass and what the BMA described as the "woefully inadequate provision of services provided for vulnerable children and young adults with gender dysphoria."

Cass recommended in 2020 that puberty blockers should be available only under a research protocol and that they be used with caution from age 16, and restrictions to accessing puberty blockers in the NHS were imposed. Former Tory health secretary Victoria Atkins imposed a ban on the routine use of puberty blockers by children and teenagers aged under 18 in March and said they would be approved only for people taking part in research trials. Streeting has indicated that the ban could become permanent.

**"Personal views"**

Representing the advocacy group TransActual, Jason Coppel KC warned in the High Court on 12 July that there was "evidence of both self-harm and suicide attempts as a direct result" of the ban. He told the court that Atkins had acted on her "personal views" and Cass had not identified puberty blockers as a danger to health.

That view was echoed by the deputy chair of BMA Council, Emma Runswick. She said on X on 14 July that the ban was a "terrible political decision which will cause incredible harm to trans people." She said she hoped that "the legal challenge or sensible heads prevail," adding, "Prescribing decisions should be for clinicians, with patients and families, not politicians."

**The way this issue has been discussed in social media has been insensitive, distressing, and dangerous and goes against guidance on safe reporting of suicide**
Louis Appleby

# GPs in Wales need "urgent rescue package" after 100 practices close, says BMA

BMA Cymru Wales has called on the Welsh government to implement an "urgent rescue package for general practice," as a survey of GPs showed 95% felt negatively about the future.

The BMA surveyed GPs in Wales from 3 March to 8 April, receiving responses from 375 (28%). It found that 91% reported being regularly unable to meet patient demand, and 87% feared that rising workloads were negatively affecting patient safety.

After the closure of 100 general practices since 2012, Wales now has fewer than 100 left. This has led to the remaining GPs seeing up to 35% more patients each, "causing unsustainably high workloads and burnout with doctors forced to work less than full time to survive," the BMA warned. The situation was set to worsen, the association said, as 53% of GP partners surveyed said they planned to leave in the next three years, and almost a third (31%) of salaried GPs said they intended to go part time.

The BMA said that 1966 GPs were currently practising in Wales, meaning an extra 718 would be needed to match the average number of GPs per 1000 population in other European countries.

The BMA blamed the situation on years of underinvestment. The survey found that 80% of GPs were very concerned about the financial

In his review Appleby criticised the campaigning organisation the Good Law Project, which is supporting the legal challenge by TransActual to the ban on puberty blockers.

Appleby said that claims on X, "retweeted thousands of times by other campaigners and members of the public and some leading journalists," included "multiple references to children dying in future because they are unable to access puberty blocking drugs."

He continued, "The way that this issue has been discussed in social media has been insensitive, distressing, and dangerous and goes against guidance on safe reporting of suicide."

**"Essentially no difference"**

In the six years covered by the review, 2018-19 to 2023-24, the data show a total of 12 suicides, five in the three years up to 2020-21 and seven in the three years after. "This is essentially no difference, taking account of expected fluctuations in small numbers, and would not reach statistical significance," the review said.

The review also said that patients who died were at different points in the care system, including waiting, in inpatient care, and after discharge, which suggested no consistent link to any one aspect of care.

The Cass review, which warned that children with gender dysphoria had been let down by a lack of research and "remarkably weak" evidence on medical interventions, has been welcomed by the RCGP and the Royal College of Psychiatrists. But the BMA has yet to take a position on the review, despite a press report last week that its Consultants Committee had already supported it.

VICTOR DE SCHWANBERG / ALAMY

A BMA spokesperson said that a press report that the Consultants Committee had passed a conference motion in 2023 "supporting Dr Cass's interim review was erroneous." They said the motion "simply supported one statement by Dr Cass contained within her review."

An original motion put to the BMA council called on the BMA to "publicly disavow" the Cass review, said a report in the *New Statesman*. The BMA said this was not the wording discussed at the council meeting.

The BMA council debate was carried out "as part of the association's internal processes for developing policy," a spokesperson said.

They added, "The BMA will continue with further work in this area to contribute positively to the provision of care and services to this often neglected population and will be setting out the BMA's stance in due course."

Jane Feinmann, London

Cite this as: *BMJ* 2024;386:q1638

viability of their practice.

The association has called on the government to implement a rescue package that includes general practice being allocated a "fairer portion of the NHS budget," a national maximum standard of patients each day, a workforce strategy to improve GP retention and recruitment, and measures to improve staff wellbeing.

Only 6.1% of the NHS Wales budget is invested directly into the general medical services contract, having fallen from 8.7% in 2005-06, the BMA said.

Gareth Oelmann (left), chair of the BMA's GP Committee Wales, said, "I'm afraid without a fairer portion of NHS funding, the situation is grave, and if general practice fails, the rest of the NHS will follow. We're asking for a rescue package to prevent further practices from closing their doors."

**If general practice fails, the rest of the NHS will follow** Gareth Oelmann

Elisabeth Mahase, *The BMJ*

Cite this as: *BMJ* 2024;386:q1589

A SURVEY of GPs showed 95% felt negatively about the future of Welsh general practice

# Creon shortage is causing doctors and their patients "worry and stress"

An ongoing shortage of the pancreatic enzyme replacement therapy (PERT) Creon in the UK is causing "significant worry and stress" for patients, doctors, and pharmacists, patients' groups have warned. In May this year the Department of Health and Social Care issued a national patient safety alert about shortages of the drug, which is used to treat pancreatic exocrine insufficiency in patients with cystic fibrosis, pancreatic cancer, and pancreatitis. It said the disruption to supply was due to limited availability of active pharmaceutical ingredients and manufacturing constraints to produce the volumes needed to meet demand.

With no clinical alternative available to those affected, clinicians and charities have warned that patients are being left at risk.

The Cystic Fibrosis Trust said, "This has caused significant worry and stress for those affected who have sometimes needed to travel to multiple pharmacies to find Creon. We've been really concerned to hear that in some cases people have been forced to make changes to their diet and nutrition as a result of shortages."

FOR THE MAJORITY OF OUR CYSTIC FIBROSIS PATIENTS PERT IS ESSENTIAL Kevin Southern

Kevin Southern, professor of child health at Liverpool University and chair of the UK CF Medical Association, which represents doctors who treat people with cystic fibrosis, told *The BMJ*, "For the majority of our CF patients PERT is essential. If they don't have it, they malabsorb food and their weight drops. This will have a big impact on their wellbeing.

"It has also been difficult for healthcare professionals, as the amount of time and effort in managing this situation has been considerable."

Nick Kaye, chair of the National Pharmacy Association, said the shortages were creating a lot of strain. The association has called on the government to introduce a medicine supply tsar to tackle shortages and examine their effects across pharmacies, general practice, and the whole supply chain. "There is a workload perspective, a human perspective, and a professional perspective, and Creon is really just the tip of the iceberg in medicine shortages," Kaye said.

Gareth Iacobucci, *The BMJ* Cite this as: *BMJ* 2024;386:q1631

NEWS ANALYSIS

# Are surgical HIT lists the answer to bringing down NHS waiting times?

The new government wants to expand the high intensity theatre model spearheaded by Guy's and St Thomas'. But does it work, and how scalable is it? **Gareth Iacobucci** reports

In his first press conference on 6 July after being elected, the prime minister, Keir Starmer, said work to achieve Labour's manifesto pledge to bring down elective care waiting lists by providing 40 000 extra NHS appointments a week would begin straight away.

He said Labour had been looking at how hospitals like Guy's and St Thomas' in London had already increased the volume of surgical activity they carry out by incentivising staff to work weekends or evenings.

Starmer and his health secretary, Wes Streeting, now want to expand this model across the country, to tackle the 7.6 million treatment backlog. They plan to deploy project leads from the trusts already doing this work to help other hospitals set up similar schemes.

**I think it's the direction we need to be heading in** Joanna Poole

## What is high intensity theatre?

The HIT model was developed by Guy's and St Thomas' in 2021 to help reduce the backlog of elective surgery after the pandemic. It is an example of overlapping or concurrent surgery, which involves organising surgical lists in parallel, with a single senior surgeon moving between two operating theatres. It is designed to increase theatre efficiency so that more patients can be operated on each day.

Other trusts, such as Leeds Teaching Hospitals (box), Barking, Havering and Redbridge Hospitals, the Royal National Orthopaedic Hospital, Lewisham and Greenwich, and Maidstone and Tunbridge Wells, have established similar schemes, sometimes referred to as surgical hubs.

The model used at Guy's and St Thomas' focuses on one type of procedure at a time. Operations are usually scheduled at weekends, with two theatres and three teams. With financial backing from the trust, the teams are equipped with more anaesthetic, surgical, and theatre staff to reduce turnaround time, minimise non-operative time, and maximise operating time. The lists require careful planning at multidisciplinary meetings to select suitable patients and staff.

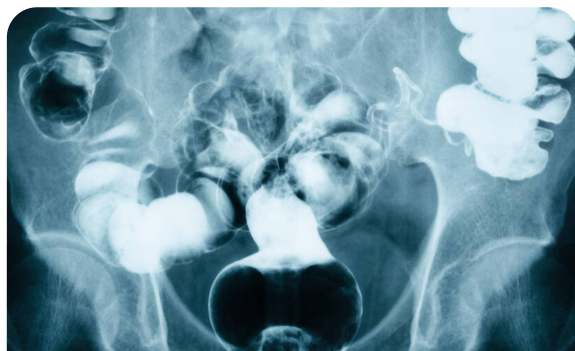
Imran Ahmad, the consultant anaesthetist who leads the HIT lists at Guy's and St Thomas', told *The BMJ* that, although HIT lists initially focused on lower risk procedures, they had been undertaking more complex cases more recently, such as arthroplasties, robotic surgery, and reconstructive procedures for patients who have had breast cancer surgery. "Meticulous planning ahead of surgery is crucial to ensure smooth running on the day of HIT lists," Ahmad said.

Since Guy's and St Thomas' started the model there have been 36 HIT lists covering 10 specialties, including gynaecology, orthopaedics, ear, nose, and throat, urology, and gastrointestinal. A total of 514 cases have been completed, with HIT lists delivering 75% more cases than a conventional like-for-like surgical list. In one instance, teams did three months of procedures in one day, the trust said.

## What impact has HIT had?

In terms of throughput, Guy's and St Thomas' reports that in most cases when it has used a HIT list it has been able to treat at least three times the number of patients than in a regular surgical list. Since the lists were introduced the number of patients waiting more than 18 months for treatment fell from 160 in April 2021 to 42 in October 2022, NHS data show.

Joanna Poole, senior anaesthetic registrar in the south west of England, who has experience of assessing perioperative projects, said that what stood out most from looking at the Guy's and St Thomas' data was the dramatic increase in the proportion of actual time staff spent in the operating theatre (so called "touch time"), from around 40% to around 90%.



### COLORECTAL SURGERY IN LEEDS

After the pandemic Leeds Teaching Hospitals NHS Trust used funding from the NHS's elective recovery fund to set up a high intensity programme, to deliver additional theatre lists and clinics at evenings and weekends. Leeds is one of the largest centres for colorectal surgery in Europe, receiving around 10 000 referrals each year.

THE TRUST said it had reduced the number of patients waiting for colorectal surgery from 7000 in April 2023 to just under 4000 now

RACHEL ADAMS

Imran Ahmad (centre) and the HIT team at Guy's and St Thomas' Hospital

Poole said, "That is a massive deal. I don't think everywhere is going to be able to do that, and they [Guy's and St Thomas'] have had proper funding for it. But theatre is very inefficient. We've got huge waiting lists, and we're not going to make any inroads unless we get more efficient with what we have."

### What are the data on outcomes?

Preliminary analysis of patients on Guy's and St Thomas' urology specific HIT lists, published last year in *Nature Reviews Urology*, reported the "same perioperative and postoperative outcomes and patient safety for HIT lists as seen with elective lists, and excellent patient and staff satisfaction." This analysis was based on a pilot study that prospectively assessed a small number of patients who underwent penoscrotal surgery and robotic assisted radical prostatectomy.

In this analysis, conducted by Ahmad and colleagues at Guy's, patients reported appreciating the team cohesion and the quick procedures, while staff said they were reassured that the quality of care was the same in the HIT list as in a standard elective list, with no shortcuts to improve turnaround and operating time. A boost in staff morale from operating more efficiently was also reported. "Unplanned admissions have been below average, complications have been minimal, and there have been no serious incidents reported to date," Ahmad said.

Previous research published in *Anaesthesia* last year examined similar concurrent surgery models adopted in Canada and the US. It suggested that these do carry "small but very real risks" to patient outcomes, safety, and training and that any organisation seeking to roll out a similar scheme should be cautious of the risks.

Ahmad said that safety data from the HIT scheme were currently being collated and would be part of a manuscript that his team will be submitting this year for publication.

### Could more trusts use HIT lists?

In their analysis, the team at Guy's and St Thomas' concluded that "HIT lists are feasible without compromising clinical outcomes or patient safety" and "could help other institutions reduce the backlog in surgical care" but need considerable planning and teamwork across surgical, anaesthetic, management, and nursing colleagues.

"HIT lists are not suitable for all sites and locations," Ahmad said, adding that Guy's had developed a feasibility questionnaire to assess whether other sites would be suitable to adopt the model, on the basis of buildings, location, flow of patients, and staffing.

Upfront investment is needed to cover additional staffing and theatre costs, but "no HIT list has ever run at a loss, due to the increased number of cases done," Ahmad added.

A spokesperson for the Royal College of Surgeons of England (RCS) said that capacity could be the "biggest barrier" to expanding the use of HIT lists. "NHS trusts will need the right number of operating theatres, beds, and staff. Not all hospitals will have the right infrastructure and facilities to easily implement these schemes."

Poole said that providing more waiting rooms, admission nurses, and administrative staff to process the extra patients being admitted would be harder for some trusts but that, "as a concept, I think it's the direction we need to be heading in."

### What's the effect on staff?

A spokesperson for RCS said that the college supported any "evidence based" initiatives to bring down waiting times but that the right incentives were needed.

"HIT lists rely on the same, already stretched workforce to carry out the work," they said. "Trusts will need to think carefully about how they can deliver high intensity schemes in a way that motivates, rather than burns out, the existing workforce."

It is not just the surgical workforce that is stretched. Day surgery theatre nurses at Guy's and St Thomas' recently announced plans to strike over their shift times being extended for a second time.

Ahmad said that the industrial action dispute was not specifically related to HIT lists, which take place at weekends and pay staff additionally for a full day's activity rather than being considered a rostered shift. "Staff are offered breaks during the HIT list shift, with additional staff brought in to help manage the workload and to ensure staff wellbeing," he added.

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2024;386:q1621

Keir Starmer visits Middlesbrough College health ward on 21 April

IAN FORSYTH/GETTYIMAGES

**Keir Starmer wants to expand the HIT model across England to tackle the 7.6 million treatment backlog**

# Caught on film: life after a sarcoma diagnosis

Close to the Bone: Patient Journeys through Sarcoma is an exhibition of photographs by Caroline Seymour that document the experiences of four patients—Gabor, Jessica, Vincent, and Christine—with sarcoma, before, during, and after surgery.

The photographs, on display at the Royal College of Surgeons of England's Hunterian Museum gallery in London, show rarely seen aspects of the experiences of the patients, including in the operating theatre.

Tom Cosker, consultant orthopaedic sarcoma surgeon at the Nuffield Orthopaedic Centre in Oxford, said, "This exhibition is a story from the patient's perspective about their experience of diagnosis, treatment, and follow-up—the part that we, as clinicians, often do not see: the human side of the story."

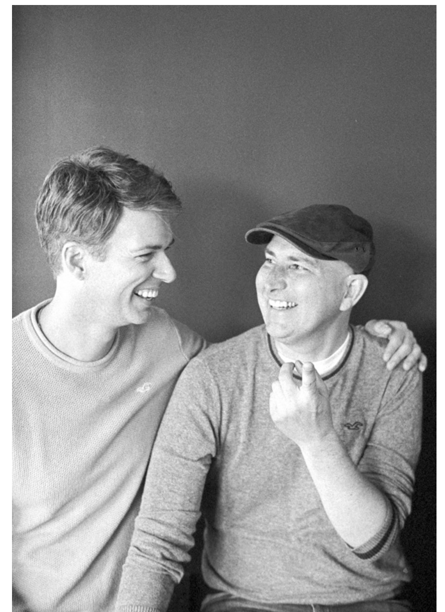
The exhibition runs from 15 August to 7 September.

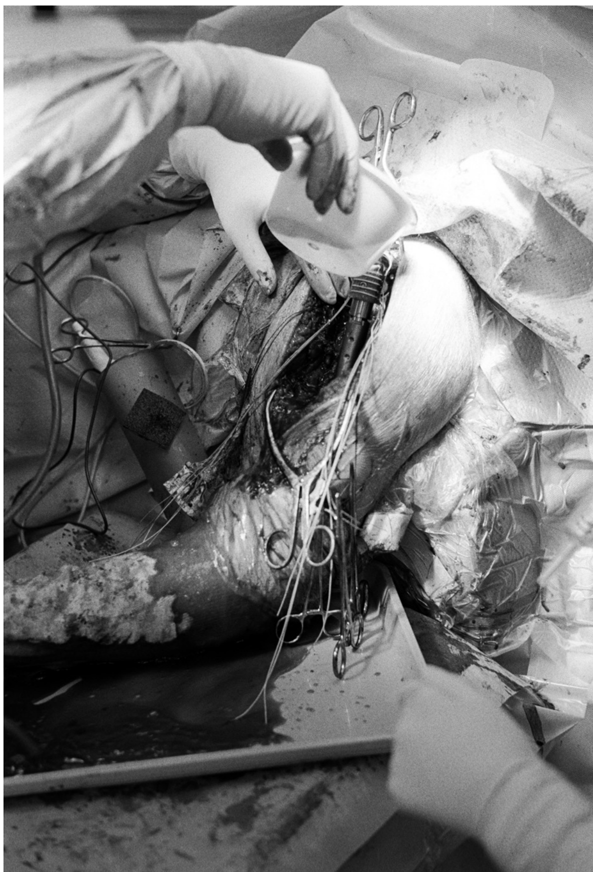
Alison Shepherd, *The BMJ*

Cite this as: *BMJ* 2024;386:q1634

**Thirty year old Jessica (above and left), from Reading, had sarcoma diagnosed a few weeks after she gave birth**

Hungarian born Gabor (above and right, in the cap, with partner Oliver) came to the UK in 2004 after graduating as a teacher. He received his diagnosis in his early 40s





Vincent (below and left) is an electrical engineer in his early 40s from Aylesbury who underwent treatment for bone cancer

EDITORIAL

# Rebuilding the UK's reputation in global health

Streamline priorities, forge respectful partnerships, and drive multilateral reform

Historically, the UK has sought to position itself as a "leader in global health."[1]

Since 2019, however, the UK's reputation has been damaged by a distracting merger of the Department for International Development and the Foreign Office during the pandemic; deep and non-strategic 33% cuts to global health aid; spending 39% of all bilateral aid within the UK; and its role in delaying access to humanitarian aid in Gaza.[3,4] Against this troubling backdrop, what are the global health challenges facing the new government, and how can its manifesto plans be successfully realised?

The first is that domestic health expenditure by low and middle income countries is insufficient to meet health needs. Over three billion people now live in countries which spend more on debt interest payments than they do on health or education.[6] This lack of finances makes the second challenge much harder—the increasing reality of truly global threats such as climate change, pandemics, antimicrobial resistance, and conflict. All are on the rise and require global cooperation, which is in short supply. Indeed, the third challenge is a breakdown in confidence in global health multilateral organisations, which was highlighted by the failure to achieve equitable covid-19 vaccine roll-out. Underpinning all three challenges are stark health inequalities and power imbalances in global heath.[8]

According to its manifesto, the Labour government will not increase spending or return to an aid budget of 0.7% of gross national income in the short term. It must therefore use limited resources better, focusing on fewer bilateral programmes in the poorest countries and allocating global resources to the most effective multilateral mechanisms. Effective action may be undermined by the low priority given to global health in Labour's manifesto. But the manifesto's focus on economic development, climate change, and security may open space for the UK to work on intersectoral action, such as the One Health agenda, or on substantial social and commercial determinants of health—for example, through taxes on tobacco, alcohol and sugar sweetened drinks.[5]

COFFRINI/AFP/GETTYIMAGES

**Over three billion people now live in countries which spend more on debt interest payments than on health or education**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### Enlightened self interest

Development will remain under the Foreign, Commonwealth, and Development Office (FCDO) and, in partnership with the Department of Health and Social Care, it will aim to serve British interests and security. A broader understanding of enlightened self-interest is needed to make this a success.[10] For example, the UK could invest in projects to strengthen health systems in low income countries, such as reforming priority setting mechanisms, which also form the cornerstone of global health security.[11,12]

The manifesto commits to strengthening and reforming multilateralism and upholding international law. This means a commitment to the revised International Health Regulations and supporting the UK's existing global health strategy, which calls for reform of global health aid architecture.[1,13] This autumn will see WHO, the World Bank, Gavi the Vaccine Alliance, and the Pandemic Fund all seeking funding pledges that would tie the UK's hands for many years. In addition, the UK must contribute to ongoing negotiations on the global pandemic agreement. To make progress on reforming the global health architecture, government will have to review these organisations and, in coordination with other countries, ensure that international pressure and funding moves towards constructive reform.

Finally, the manifesto commits to "genuine respect and partnership" with low and middle income countries. Processes must be developed and implemented to listen to governments and civil society in these countries about how this can be done. Options include reforming FCDO governance to include lower income country and civil society voices; adjusting bilateral programming to be longer term, taking greater risks through more direct budget support; backing multilateral mechanisms that empower low and middle income countries and providing them with core flexible resources, as the UK has done with WHO; and transforming the terms of UK global health aid, through providing flexible concessional loans rather than aid for predefined priorities, for example.[8]

Labour also commits to "empowering women and girls," which is consistent with the previous Conservative administration. This must be delivered not just promised: reproductive and sexual health programmes were cut by a staggering 40% by the previous administration.[3,14]

The Labour Party takes over a UK global health agenda that is smaller in reputation and resources than it once was. To deliver on its manifesto and revive the UK's reputation the new government will need to be decisive, prioritise its bilateral and multilateral expenditure, invest in health systems, and put money and political capital behind multilateral reform and equitable partnerships.


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EDITORIAL

# Climate change threatens children's brain health

Child specific adaptation measures should be a global priority

A landmark session at the UN Framework Convention on Climate Change on 4 June 2024 focused exclusively on the disproportionate effects of climate change on children.[1] It must now be followed by concerted, system-wide actions to protect them.

The developing brains of children are particularly susceptible to the effects of climate change, including rising global temperatures, extreme weather events, and air pollution.[2] This is because of their rapid physical and brain development, vulnerable blood-brain barrier and placenta, immature immune systems, and limited ability to regulate body temperature.[3]

Brain health, encompassing both neurological and mental health, is crucial during these formative years, as it sets the foundation for future cognitive function and overall wellbeing.

Emerging evidence suggests that factors related to climate change, such as ambient heat exposure, can affect the brain.[5] Heat stress has been linked to disruptions in neurodevelopment, slow cognitive and emotional functioning, long term learning loss and memory deficits, worsening of neurological and mental disorders, and increased permeability of the blood-brain barrier.[6] Early exposure to extreme weather events, including antenatal exposure, has also been associated with an increased risk of anxiety, depression, attention deficit-hyperactivity disorder, post-traumatic stress disorder, educational underperformance, diminished self-regulation, and psychiatric disorders in later life.[7,8]

Climate change and air quality can mutually exacerbate each other, and early exposure to air pollutants is associated with developmental delays, reduced IQ, and symptoms of anxiety, depression, and inattention.[9,10] Evidence is increasing that exposure to climate change related stressors during critical periods of brain development is associated with epigenetic changes that may affect cognitive outcomes in subsequent generations.[8]

**The developing brains of children are particularly susceptible to the effects of climate change**

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Climate change also increases the spread of vector-borne diseases[11] such as malaria, dengue fever, and Zika virus disease, which can cause severe neurological symptoms such as encephalitis. During the Zika virus epidemic in Brazil, for example, more than 1600 babies were born with microcephaly.[12] Regions previously unaffected by vector-borne diseases are now exposed, as evidenced by the spread of the *Aedes aegypti* mosquito, a carrier of dengue, Zika, and chikungunya viruses, to Europe and the United States.[13]

Climate change induced droughts and crop failure can lead to food insecurity, compromising children's access to nutrients necessary for healthy growth and brain development.[14] The developing brain is especially vulnerable to nutritional deficits. Malnutrition during the first 1000 days of life has been linked to impaired brain development, as well as behavioural and cognitive problems in children.[15]

## Evidence based policy

Establishing a causal effect of climate change on children's brain health is difficult without prospective longitudinal cohort studies—including neurobiological studies—to identify underlying mechanisms. Given the disproportionate risks to children, this research must be prioritised. A robust evidence base on brain health risks will ensure their consideration in actions that promote climate resilience.

Despite emerging evidence of the negative effects of climate change on children's brain health, it has been given little policy attention. Only 3% of countries have substantive child specific adaptation measures,[17] even though interventions introduced in childhood are more likely to protect brain health than measures introduced later in life.[18] There is a pressing need to better integrate child specific health measures in national and global adaptation policies.

Promoting existing child friendly policies is important. However, more robust environmental measures are needed to ensure adequate nutrition, clean air, equitable access to green space,[21] and climate resilient school and home environments.[22]

Calls for child focused climate policies will also help ensure that children's unique vulnerabilities are prioritised in efforts to combat climate change.[23] Fostering multidisciplinary partnerships between educators, paediatricians, neuroscientists, environmental experts, and parents is essential.

The health effects of climate change should be integrated into medical and nursing education. Families and communities should be educated about climate related risks to children's brain health through healthcare consultations and public health campaigns. Urgent steps should also be taken to reduce healthcare's carbon emissions.

Children's brains are highly plastic and resilient, capable of mitigating damage when given the opportunity.[25] By taking appropriate action today, we can safeguard the brain health of our children, preserving vital human capital for a healthier, more resilient, and equitable future.

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CLIMATE CHANGE

# How Paris is preparing for the health threats of the Olympic Games

The first Summer Olympics since the height of the pandemic will be grappling with heatwaves, dengue, and the wider problems of inequity that come with hosting the world's biggest sporting event. **Charles Ebikeme** reports

Hot and humid conditions now play an increasingly major role during Olympic events. Under the long tail of climate change, cities hosting the games must add heat to the extensive list of health threats to prepare for.

"When you gather a large amount of people in a hot city like Paris it's a concern," says Jan Semenza, a former scientist at the European Centre for Disease Prevention and Control, who has worked on heat adaptation strategies in cities.

The Summer Olympics are held between July and September, months that have the highest risk of seasonal heatwaves. Air pollution also peaks during this period, and the risks of dengue fever and other mosquito borne diseases are on the rise.

## Beat the heat

Paris has been adapting to rising temperatures since a 2003 heatwave that saw the hottest summer recorded in Europe since at least 1540. In the city alone, around 15 000 people were reported to have died in a two week period as a result.

"The risk of heatwave conditions has been integrated into our planning from the start," says a representative from Paris 2024, the games organising committee. The athletes' village has been built without power hungry air conditioning and instead uses a bioclimatic design that guarantees that indoor temperatures are cooler than outside. Outdoor events are being scheduled for "optimal times"—marathon and triathlon events, for example, will be held in the early morning and the public Marathon Pour Tous (where 20 000 participants are expected) will be run at night.

Météo France, France's national weather agency, is embedded in Paris 2024's main operations centre, providing accurate advance forecasting (up to 10 days). It will allow a range of potential measures to be activated on a sport-by-sport and venue-by-venue basis, depending on the level of heat and humidity beyond a baseline of 32°C.

For athletes, the primary recommendation has been to train in the heat. "To prepare athletes for these challenging environments, we perform heat acclimatisation," says Franck Brocherie, a researcher in physiology at France's Institut National du Sport, de l'Expertise, et de la Performance. "When you are exposed to heat for around an hour a day, for approximately two weeks, you can induce some physiological adaptation."

PASCAL POCHARD CASABIANCA/AFP/GETTY IMAGES

Chemical spraying in central Paris to combat dengue carrying mosquitos

ABACA/ALAMY

The Olympic village in Seine-Saint-Denis, Paris

## The rising threat of dengue

During the 2004 Summer Olympics in Athens most visits to primary care were for respiratory infections and gastroenteritis. Across all four regions where the games were held, in areas representing 51% of Greece's population, salmonellosis accounted for around half of the health problems for which people saw a primary care physician, tuberculosis 17%, hepatitis B 5%, aseptic meningitis 4%, and bacterial meningitis 3%.

The challenge for Paris is that none of the sources of these outbreaks were reported to be from an Olympic venue, highlighting the fact that a city itself is a spreader of disease. For a games that wants to make the entire city its stadium, this makes the challenge more complex.

Paris 2024 will take sporting events out of stadiums and into new and unexpected places—along the Seine, to the foot of the Eiffel Tower, and along myriad other cultural landmarks such as the Champ de Mars, the Grand Palais, Invalides, Place de la Concorde, and Château de Versailles. Close to 11 000 athletes and 4400 paralympic athletes are expected to take part, alongside 45 000 volunteers and millions of spectators and visitors.

Santé Publique, France's public health agency, will implement a reinforced health monitoring system during the games period. Such systems rely on data—such as emergency visits, all cause mortality, and electronic death certificates—from laboratories and hospitals, as well as SOS Médecins, a medical emergency service in France.

Santé Publique adds that a new international monitoring system for infectious signals with the European Centre for Disease Prevention and Control, and monitoring systems in partnership with the Brigade des Sapeurs-Pompiers de Paris (Paris' fire brigade) will be in action during the games.

The shadow of covid-19 continues to loom (see box). But of bigger immediate concern is dengue fever, an outbreak of which is ongoing in South America and elsewhere.

France has been on alert for cases of dengue since September 2023, when a 36 year old woman from Limeil-Brévannes, a town 15 km south of Paris, was admitted to hospital with symptoms of fever, malaise, and headache. Blood tests later confirmed the disease was dengue fever—despite the fact that she had not travelled abroad or to other regions of France.

The viral infection, which spreads from mosquitoes to people, has been reported in almost every region of France, and scientists predict that French cases could continue to grow to more than 3000 a year by the end of the decade. The *Aedes* mosquito, the main vector of dengue, is well adapted to urban centres. In 2023, for the first time, health authorities in Paris fumigated areas of the city to kill disease carrying mosquitoes.

Very little attention has, however, been paid to more long term public health adaptations, such as encouraging Parisians to install bed nets. Raman Velayudhan, head of the vector control and environment unit at the World Health Organization, has called for more personal protection measures such as insect repellents and mosquito nets to combat the spread of mosquito borne infections.

### Tokyo 2020: the pandemic Olympics

The 2020 Summer Olympics in Tokyo, which took place in 2021, saw relatively few infectious disease cases—only 33 cases of covid-19 among the 11 300 athletes who competed. Tokyo did not turn out to be the super-spreading event some feared, but this was largely thanks to Japan's pandemic control measures such as a closed border that, unusually, saw no overseas spectators at the games. This will not be the case in Paris 2024. These measures also meant that the number of other infectious diseases—such as flu, which traditionally spreads during mass gathering events—was relatively low. Still, local cases of covid-19 in Tokyo did rise, in comparison with the rest of Japan in that period.

**Around 80% of investment for the Olympic Games has been focused on Seine-Saint-Denis, a poorer, often neglected suburb of the city**

## A legacy of urban health renewal

"Chance favours the prepared mind" is a quote often attributed to the French scientist Louis Pasteur. Stroll down any street in Paris today and you can witness such preparation. The 2024 games has provided further impetus for urban renewal in line with Parisian mayor Anne Hidalgo's vision for a healthier capital.

Increasing green space is one example. Concrete absorbs heat during the day and then radiates it out at night. Temperatures in Paris are already 2.3°C above pre-industrial levels and the city's Climate Action Plan envisions a scenario of around 3°C by 2050. The city plans for at least 10m$^2$ of green space per inhabitant by 2040, along with every Parisian being less than seven minutes' walk from a "cool island," day and night.

Such urban renewal often leaves those in the most deprived communities behind. But, notably, roughly 80% of investment for the Paris Olympic Games has been focused on Seine-Saint-Denis, a poorer and often neglected suburb on the northern outskirts.

Santé Publique envisions that the new health monitoring systems developed for the Paris Olympics could continue after the games, further benefiting people across the city.

"When we talk about the legacy of the games, infrastructure is part of that conversation," says Brent Longley, an urban strategist who lives in Paris. "The games have acted as a catalyst to create better connectivity for suburban Paris, and they have created new opportunities for jobs, and access to housing and opportunities, for people in Greater Paris."

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**BMJ INVESTIGATION**

# Cord blood banking: Experts raise concern over claims made for stem cell applications

Marketing by some private biobanks may be misleading expectant parents about the procedure's value, writes **Jacklin Kwan**

**Biobanks don't provide a route to a scientist in a lab**
Charles Murry

Umbilical cord blood banking has gained prominence in the past decade as an option for expectant parents worried about their child's future health. Parents pay private biobank companies up to £3000 (excluding annual storage fees) to freeze their baby's cord blood, which contains stem cells, in case the infant develops a condition that could be treated with stem cell therapy.

Cells4Life, which claims to be the UK's largest private biobank for cord blood banking, says that its particular method delivers more stem cells from umbilical cord blood than its competitors' processes. For this marketing message it relies on research published in the *Journal of Stem Cells Research, Development & Therapy*. Publication of this research took place just 17 days after receipt of the manuscript, a timescale far shorter than is typical for peer reviewed journals. Two editors listed on the journal's editorial board say they did not in fact hold these roles, *The BMJ* discovered (box 1).

Experts in regenerative medicine have criticised Cells4Life's marketing directed at expectant parents, which they say contains misleading statements. Charles Murry, director of the Institute for Stem Cell and Regenerative Medicine at the University of Washington, Seattle, says claims that stem cells can develop into almost any type of cell in the body have been "very rigorously disproven."

## "Routinely used" and promising—or "rigorously disproven"?

Depending on the specific company and on whether parents choose also to bank cord tissue, private umbilical cord blood banking services range from £550 to around £3000, excluding annual storage fees of over £100 to keep samples frozen. Those financial costs are often marketed as an investment, given that there have been promising reports of successful use of stem cell based therapies to treat a wide range of potentially life threatening diseases, from cerebral palsy to leukaemia.

The Cells4Life website claims that "umbilical cord blood is routinely used in treatments for over 80 different conditions and diseases," including cancers, blood disorders, immune disorders, and autism. It says, "Umbilical cord blood stem cells are pure and plastic, meaning that they can become almost any cell in the human body," and, "They can become almost any tissue type in the body and may even be used to regrow entire organs."

But Murry says this list of potential applications is unrealistic. "There were people making these claims in the late 1990s—that these cells have the plasticity to become other things—but that's been very rigorously disproven." He tells *The BMJ* the haematopoietic stem cells (HSCs) and mesenchymal stem or stromal cells (MSCs) harvested from cord blood (box 2) are a form of adult stem cell and that there is a "restricted repertoire" of what they're able to develop into—namely, blood

BURGER/PHANIE/SIPA/ALAMY

A midwife harvests umbilical cord stem cells

**Box 1 | Claim of superior technology by UK's largest private biobank raises questions**

Cells4Life says it is the UK's largest provider of cord blood banking services. The firm markets its proprietary technology TotiCyte—a "precise, low concentration mixture of two solutions," the cryoprotectants dimethyl sulfoxide (DMSO) and dextran—as the reason why, after collection, processing, and freezing, its samples have three times as many stem cells as competitors that use other processing methods (assuming freezing and collection are the same across all methods).

**All they've got in TotiCyte is DMSO and dextran, which are well established cryoprotectants**
Patricia Murray

Patricia Murray, professor of stem cells and regenerative medicine at the University of Liverpool, says that there is no clear scientific reason why TotiCyte should outperform market alternatives. "All they've got in TotiCyte is DMSO and dextran, which are well established cryoprotectants," she says. "There may just be a slight difference in the percentages of DMSO and dextran, but you wouldn't expect it to have such a dramatic effect on cell survival."

Responding to this, Cells4Life's chief executive, Claudia Rees, says that TotiCyte is used as a blood separation reagent to sediment red blood cells so they can be removed before freezing, not as a cryoprotectant.

Murray points to a written opinion by an international searching authority (ISA or patent office) in 2014 when Cells4Life applied for a patent under the World Intellectual Property Organisation. The ISA examined TotiCyte's application to sediment red blood cells as well as its role as a cryoprotectant and concluded: "It follows that the addition of DMSO to the dextran composition does not add any technical effect in the use and method for white blood cell enrichment and appears merely to serve as a patent strategical means to establish novelty over the art."

Rees told *The BMJ* that Cells4Life has been granted patents in the US and China for TotiCyte as proof of its novelty. The evidence for Cell4Life's TotiCyte claim is given in a "peer reviewed publication," the *Journal of Stem Cells Research, Development & Therapy*, published by Herald Scholarly Open Access. The research article referenced by Cells4Life was received on 14 May 2021 and published only 17 days later. When asked by *The BMJ*, the journal in question claims to maintain a double blind process of peer review.

However, a 2017 study of journal response times suggests that journals typically take 12-14 weeks to handle accepted medicine and public health papers. This is the time in which the paper is under the responsibility of the journal—in other words, the time it takes for the journal to evaluate the manuscripts, find reviewers, have time for the reviewers to complete their work, and for editors to evaluate manuscripts on the basis of reviewers' reports. It does not include the time taken for authors to revise and resubmit their work.

*The BMJ* contacted two editors who were listed on the journal's editorial board. One said that they had "never held an active role in the journal nor received any articles or communications from them for review or any other purpose." The other said that they "never accepted the position of editor to this journal."

Both researchers have since asked the *Journal of Stem Cells Research, Development & Therapy* to remove their names. *The BMJ* was unable to make contact with the journal about this matter.

Rees says, "The *Journal of Stem Cells Research, Development & Therapy* has its own independent editorial board, provides an NLM [National Library of Medicine] identifier [and] an impact factor, and operates under the COPE guidelines." COPE is the Committee of Publication Ethics, a non-profit organisation that promotes and defines best practices in scholarly publishing.

cells for HSCs and connective tissue cells for MSCs.

Responding to this criticism, Cells4Life says, "Any cursory search of published literature on future applications of perinatal stem cells demonstrates the huge potential that cord blood holds for use in regenerative medicine in the future." It references papers in which MSCs are used to reduce inflammatory immune responses after organ transplantations and adds: "MSCs can be transformed into inducible pluripotent stem cells (iPSCs). This technology allows a cell to mimic an embryonic stem cell . . . capable of forming any tissue with [the] exception of germ cells."

**Box 2 | What is cord blood banking?**

Blood in the umbilical cord contains haematopoietic stem cells, which can be used to develop into different kinds of blood cells (such as red blood cells), and mesenchymal stem cells (stromal cells), which are important for repairing some body tissues. After birth, the umbilical cord can be clamped and the blood within it and the placenta cryogenically stored. According to the Human Tissue Authority, 376 843 units of cord blood were stored with the UK's private cord blood biobanks at the end of 2022, representing over 90% of the country's total stores of cord blood supply. The remainder is stored in philanthropic umbilical cord blood banks, such as the independent charity Anthony Nolan, to which parents can choose to donate cord blood for other patients or research.

Stem cell therapies are showing promise in treating some conditions that diminish quality of life, such as cerebral palsy. Finding a stem cell match through public banks or within families can be a challenge.

Freezing induced pluripotent stem cells

MEDICIMAGE EDUCATION/ALAMY

Fibroblast cells are transferred into Petri dishes

MEDISHOTS/ALAMY

## Potentially misleading claims

But Murry considers the claims of pluripotency and the ability to develop into any tissue potentially misleading, because they do not give parents the whole picture. He says that transforming stem cells into iPSCs requires highly trained stem cell scientists to reprogramme the cell. "The biobanks store the starting material in a 1000 step journey," he says, "They don't provide you with a route to a scientist in a lab."

"Also, you can make iPSCs from your blood or from your skin as an adult," he adds, meaning that cord blood banking is unnecessary for this process.

Many other private biobanks make similar claims about the therapeutic potential of cord blood. SmartCells, a competing cord blood bank, claims on its website: "As the body's building blocks, the possibilities for using stem cells are endless. These potent cells are unique because they have the ability to repair, replace, and regenerate cells of almost any kind."

Future Health Biobank, another private cord blood bank service, lists "treatment possibilities" on its website, naming over 75 genetic, immune, and blood disorders that can be treated with HSCs.

Pietro Merli is a paediatrician at the Bambino Gesù paediatric hospital in Rome, Italy, where he uses HSCs and other cell products to treat his patients. He also believes that the lists of diseases and disorders claimed by the biobanks to be treatable with MSCs and HSCs are unrealistic.

**Many disorders treated with HSCs do not require autologous stem cells**
Pietro Merli

He explains that many of the disorders and diseases he treats with HSCs do not require autologous stem cells, harvested from the patients, and can instead use allogeneic stem cells from donors who are HLA (human leucocyte antigen) matched to patients. "There are many conditions that can be treated with haematopoietic stem cell transplants, but these are allogeneic stem cell transplants, not autologous," he says.

Merli says that the few instances in which doctors might use autologous HSC transplants are in treating lymphomas. "But you can use your own stem cells from bone marrow, which are harvested during your treatment," he said, adding that there is no benefit to harvesting and storing stem cells from cord blood.

Merli says that in Italy, where he practises, such advertising by stem cell therapy companies is illegal. He also says that no cord blood bank he has seen details how patients would hypothetically be able to use their preserved stem cells.

Neither SmartCells nor Future Health responded to *The BMJ*'s request for comment.

The Royal College of Obstetricians and Gynaecologists and the Royal College of Midwives do not recommend commercially harvesting umbilical cord blood, unless there's a specific medical reason to do so.

Murry says the decision whether to bank their infant's cord blood ultimately lies with parents: "If the cost is not a big deal for you, and it brings you peace of mind, go for it."

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