inside medicine

SOPA IMAGES LIMITED/ALAMY

Rachel Reeves, leaving Downing Street to deliver her budget, which did not include any extra core funding for the health service

No new NHS cash as £3bn drug bill looms

Labour's autumn budget featured announcements on child poverty, milkshake and gambling taxes, and private funding for new neighbourhood health centres.

But there were no announcements on core NHS funding, while health service budgets face a fresh challenge thanks to an agreement with the US on drug pricing. The deal will see a 25% increase in the price threshold at which NHS spending watchdogs deem new treatments to be affordable. This will cost the service an estimated extra £3bn a year.

It also commits the UK to increase investment in new medicines from around 0.3% to 0.6% of GDP, over the next 10 years.

Nuffield Trust senior policy analyst Sally Gainsbury warned, "A big increase in the price the NHS pays by raising the NICE threshold will not bring additional benefits for the population as a whole—it will just make healthcare more expensive."

In her budget, just days before the US deal was unveiled, chancellor Rachel Reeves announced that almost half a million children will be lifted out of poverty with the abolition of the two child limit on universal credit support for families.

The budget also included higher taxes on gambling and milkshakes, plans to build new NHS "neighbourhood health centres" through public-private partnerships, and £300m of new capital investment for NHS technology, though no more to the service's core funding.

The new "milkshake tax" will see the existing soft drinks levy, which mainly affects fizzy drinks, extended to include some dairy drinks, including packaged milkshakes, sweetened yoghurt drinks, and ready-to-drink coffees. Ministers hope the move will simultaneously raise more revenue for the state and reduce population obesity levels.

The budget also aims to tackle problem gambling, with duty rises on remote gaming from 21% to 40% and on online betting from 15% to 25%. But Reeves said in-person horse racing bets would be unaffected and that bingo duty would be scrapped from April, to recognise their "cultural value."

Reeves also announced private funding to deliver 250 neighbourhood health centres, housing GPs, nurses, dentists, and pharmacists. The hubs are designed to deliver a key plank of Labour's plan to shift more care into the community, as laid out in the NHS 10 year plan. The move has sparked concern, given the controversy over previous NHS private finance initiatives (PFI) schemes.

Gareth Iacobucci, *The BMJ*

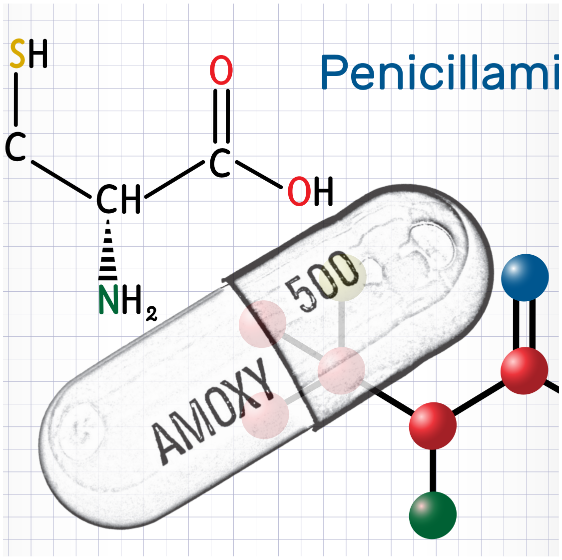
Cite this as: *BMJ* 2025;391:r2543

LATEST ONLINE

- Wood burning stoves could go up in smoke in air pollution crackdown
- Will revived PFI schemes deliver for NHS or repeat past failures?
- Obesity: WHO calls for increased production of GLP-1 weight loss drugs

MEDICAL NEWS

Patient's death from drug allergy mix-up prompts calls for change



General practices and hospitals have been urged to act after a fatal mix-up where a patient's penicillin allergy was recorded as a penicillamine allergy.

The death of the patient, who was given penicillin for an infection despite being allergic, was identified in a three year review of national incident data.

This review also found 314 other similar mix-ups between the two drugs. Some affected patients experienced side effects such as rash, angioedema, and anaphylaxis as a result of their allergy being incorrectly recorded.

Penicillin refers to a group of antibiotics, whereas penicillamine is a drug used to treat Wilson's disease and severe active rheumatoid arthritis. "This lookalike, soundalike error risks a patient with a penicillin allergy being administered a penicillin based antibiotic and having a potentially fatal anaphylactic reaction," the report said.

Recording errors may occur because some electronic prescribing systems allow clinicians to search by either drug name or group when selecting allergies—with penicillin appearing only under drug group and penicillamine being the only option under the drug name when "penicill" is typed in. Alternatively, some systems have an alphabetical dropdown list in which penicillamine comes above penicillin.

Providers have been told to identify patients recorded as having a penicillamine allergy and correct where necessary. General practices have been told they must add additional checks such as a clinical review if penicillamine is the stated allergen.

Elizabeth Mahase, *The BMJ* **Cite this as:** ***BMJ*** **2025;391:r2513**

Prostate cancer

Committee rejects routine screening

The UK National Screening Committee advised against routine screening for prostate cancer with the prostate specific antigen (PSA) blood test, arguing that the harms outweighed the benefits. It also advised against screening black men or men with a relevant family history of prostate, breast, or ovarian cancer—despite a higher risk of prostate cancer in these groups—owing to uncertainties in the data. But its draft recommendations, out for public consultation until 20 February, do recommend a targeted programme to screen men with a confirmed *BRCA* gene variant.

Industrial action

Resident doctors announce pre-Christmas strike

Resident doctors in England have announced a five day walkout over pay and training places just before Christmas, in a move NHS England branded "shameful" and "reckless." Doctors will strike from 7 am on 17 December to 7 am on 22 December. This will be the 14th walkout since March 2023 over pay and conditions. Jack Fletcher, chair of the BMA's Resident Doctors Committee, said the union had been left with "no choice but to announce more strike dates" as the government had failed to "put forward a credible plan."

Drug resistant STIs

WHO calls on countries to combat gonorrhoea surge

Gonorrhoea is becoming increasingly resistant to antibiotics, the World Health Organization warns, urging nations to do more to combat its spread. Data from WHO's enhanced gonococcal antimicrobial surveillance programme found that from 2022 to 2024 resistance to ceftriaxone and cefixime—antibiotics commonly used to treat gonorrhoea—rose sharply from 0.8% to 5% (ceftriaxone) and from 1.7% to 11% (cefixime). Resistance to azithromycin remained stable at 4%, while resistance to ciprofloxacin reached 95%.

Menstruation

Period poverty group announces closure

A charity that fought for menstrual equity in the UK and provided free period supplies to people in need, including asylum seekers and refugees, has closed. Bloody Good Period shared a statement online, calling it a "deeply sad day." The reason for the closure has not been stated, although it reflected "severe financial pressures" across the sector. This comes as data from ActionAid published in May showed UK period poverty to have risen from 12% to 21% in one year. The 2023 poll found that more than one in five (21%) were struggling to afford period products.

Health check

NHS launches five minute online quiz

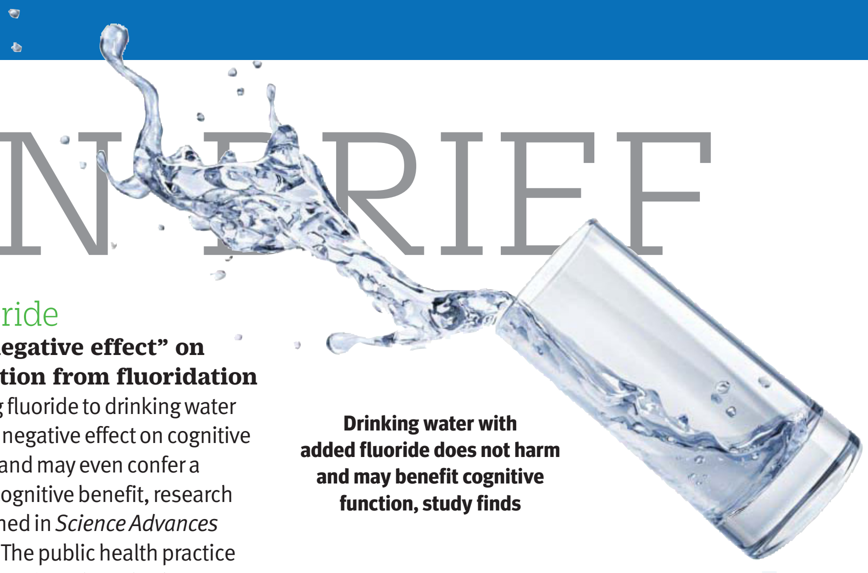
An online quiz launched by the government and NHS aims to give people in England personalised tips and advice to improve their health. The five minute Healthy Choices Quiz includes questions on nutrition, movement, smoking, vaping, alcohol consumption, mental health, and sleep. Users get an overall score out of 10, along with tailored advice and links to free NHS apps and tools.

Science integrity

Fewer female than male authors in retracted articles

Women are "markedly underrepresented" among authors of retracted publications in high impact medical journals, a study found. An analysis of 878 retracted publications across nine clinical areas estimated that only 16.5% of first authors of retracted papers were female. Women were also significantly less likely to have multiple retractions. The study author, Paul Sebo, wrote in *PLOS One* that this underrepresentation, "especially in the case of retractions related to scientific misconduct, may reflect systemic gender imbalances in academia, rather than differences in scientific integrity."

IN BRIEF



Drinking water with added fluoride does not harm and may benefit cognitive function, study finds

Fluoride

“No negative effect” on cognition from fluoridation

Adding fluoride to drinking water has no negative effect on cognitive ability and may even confer a small cognitive benefit, research published in *Science Advances* found. The public health practice of adding fluoride to drinking water faces increasing scrutiny in the US and the UK, and the US health secretary, Robert F Kennedy Jr, has repeatedly criticised it. Around 63% of the US population have fluoridated water. In England around one in 10 people have it, mainly in the West Midlands and the north east.

Bird flu

US man dies from H5N5

A man in the US state of Washington has died after infection with the first known human case of the H5N5 strain of avian influenza. Health officials said that the patient was an “older adult with underlying health conditions.” He had been in hospital since early November and developed a high fever, confusion, and respiratory problems. The ongoing risk to the public from this strain is considered low, but officials urged people with general exposure to domestic or wild birds to get a seasonal flu vaccine.

Marburg

Six deaths from virus confirmed in Ethiopia

Ethiopia’s health authorities are responding to the country’s first ever outbreak of Marburg virus disease. Three deaths were confirmed and another three were being investigated, said officials in Addis Ababa on 17 November. At least nine cases of the deadly viral disease—related to Ebola—had been reported, said the World Health Organization. The outbreak was detected in Jinka in southern Ethiopia, where local doctors reported a cluster of cases.

Rahmeh Aladwan

Doctor accused of antisemitism is suspended

A British Palestinian doctor who made allegedly antisemitic posts on social media has been suspended from the UK medical register for 15 months while her fitness to practise is investigated. Rahmeh Aladwan, a trainee in trauma and orthopaedics, faces an investigation by the GMC after posting on X about “Jewish supremacism” and appearing to show support for Hamas. If the case goes to a medical practitioner tribunal for a full hearing Aladwan could have conditions placed on her registration, or she could be suspended or struck off.

Sepsis

Baby died after mishandled biopsy, inquest hears

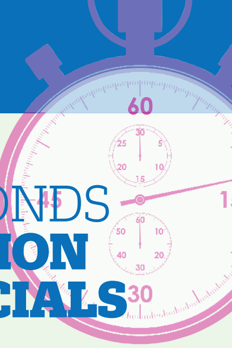
A 10 day old baby died from sepsis following a biopsy after doctors gave her the wrong antibiotics, sent her home too early, and failed to get her parents’ informed consent, an inquest heard. Willow Rose Courtney-Thompson, born prematurely on 12 October 2024, had problems feeding and underwent a suction rectal biopsy at the John Radcliffe Hospital in Oxford to rule out the rare bowel condition Hirschsprung disease. But an inquest heard that the procedure was done without the informed consent of her parents, who were not made fully aware of its risks and benefits.

Cite this as: *BMJ* 2025;391:r2528

VIOLENCE AGAINST WOMEN

Nearly one in three women worldwide—840 million—have experienced partner or sexual violence in their lifetime

[World Health Organization/UN]



SIXTY SECONDS ON . . . SALMON SPERM FACIALS

IS THIS REEL? NOT CLICK BAIT?

Yes, you heard it right. This is a growing skincare trend—made popular by celebrities such as Jennifer Aniston (below)—whereby people have DNA fragments taken from salmon sperm injected into their face, in the hope that it encourages collagen production and hydrates their skin.

SOUNDS FISHY

The treatment, also known as polynucleotides therapy, is being offered by beauty shops across the UK, with people shelling out £350 to £650 to be jabbed.

FACING THE FACTS

What does the evidence say? A recent review of the current literature found very “limited high quality evidence available on the use of polynucleotides” and said that “further research is needed to confirm their efficacy.”

THE EXPERT ANGLE

John Pagliaro, an Australian consultant dermatologist, told the BBC, “We do not have good, strong data. As a medical specialist I would want to see at least a few more years of big, credible studies showing safety and efficacy before I started using them in my practice.”

WHAT ABOUT REGULATION?

In the US, the Food and Drug Administration hasn’t approved the use of the injections. Providers instead opt to apply polynucleotides to their client’s skin after a microneedling treatment, the idea being that this increases absorption into the skin.

SEA-RIOUSLY?

There seems to be a plaice for tighter rules in this space, as UK regulation is lacking. A review published in the *Journal of Aesthetic Nursing* said that the “absence of specific regulations for polynucleotide poses potential risks.”

GET TO THE POINT

The risks include a lack of clear guidance for people doing the injections, along with varying patient outcomes. The review authors warned, “Without standardised protocols, ensuring patient safety becomes challenging, as adverse reactions or long term effects may not be adequately addressed.”

Elisabeth Mahase, *The BMJ*

Cite this as: *BMJ* 2025;391:r2525

Controversial puberty blocker trials to go ahead

Two controversial research studies on the risks and benefits of giving puberty blockers to young people with gender incongruence will go ahead.

The trials will begin recruiting participants soon, with findings expected in four years. But some clinicians have argued it is “unethical” to expose children to potentially damaging drugs without clear benefit.

The first study, the Pathways trial, will measure the impact of puberty blockers on the quality of life and emotional wellbeing of young people with gender incongruence, as well as their cognitive, physical, and social development.

Researchers aim to recruit 226 children over three years into one of two study arms. In the first group participants will get puberty blockers at the outset for 24 months, while participants in the second group will have to wait for 12 months. Participants will be assessed at the outset, at 12 months, and at 24 months. Assessments will be compared with 300 children with gender incongruence not taking puberty blockers.

Participants will also be followed up into early adulthood to measure longer term outcomes, and children must meet strict eligibility criteria to take part. Use of puberty blockers to treat this cohort has not previously been subject to rigorous evaluation of benefits and risks, and this is the first randomised controlled trial conducted for this intervention.

Studies are needed to determine how best to treat gender questioning young people
Emily Simonoff

A trial was the only way forward to make sense of this
Hilary Cass

A linked study, Pathways Connect, will look at brain development and brain health in 150 young people with gender incongruence receiving psychosocial and non-medical interventions plus puberty blockers and compare this with 100 others receiving supportive interventions alone.

Safeguards and oversight

Emily Simonoff, professor of child and adolescent psychiatry at King’s College London, said the studies were needed to determine how best to treat gender questioning young people. She noted three concerns in relation to puberty blocker use in gender incongruence: decrease in bone strength, damage to fertility and sexual development, and risks to brain development and function.

Clinical uncertainty about use of the drugs to treat gender incongruence prompted the UK government to ban them outside a clinical trial setting. This followed paediatrician Hilary Cass’s review of gender identity services for young people, which found a lack of robust evidence (on either benefits or risks) for their use in managing gender incongruence and recommended research to establish the evidence base for treatments.

UK acted “too little, too late” on covid, leading to avoidable deaths, inquiry says

Boris Johnson’s government repeatedly did “too little, too late” in response to the covid pandemic, and 23 000 lives in England could have been saved if a lockdown was imposed a week earlier, the UK Covid-19 Inquiry has concluded.

Delays in imposing measures were “inexcusable,” said the inquiry’s chair, retired appeal court judge Heather Hallett. Had government put in place stringent restrictions by 16 March 2020 to limit the spread a mandatory lockdown might conceivably have been avoided altogether, the report added.

Hallett said measures such as contact tracing, self-isolation, household quarantine, face coverings, and improved respiratory hygiene could have avoided a full lockdown.

Despite clear signs the virus was spreading globally, all four UK nations failed to take timely and effective action, with February 2020 a “lost month,” the inquiry concluded.

“Limited testing capacity and a lack of adequate surveillance meant decision makers did not appreciate the extent to which the virus was spreading and they failed to recognise the level of threat posed,” Hallett said. “This was compounded by misleading assurances from the Department of Health and Social Care and the widely held view the UK was well prepared for a pandemic.”

The report—the second from the multistage inquiry—covers core decision making in government. It criticises Johnson, then prime minister, his health secretary Matt Hancock, and Chris Wormald, permanent secretary at the health department. Hallett also accused the Scientific Advisory Group for Emergencies (SAGE) of being at risk of “groupthink” because of its narrow membership.

Chris Whitty (pictured on Boris Johnson’s right), England’s chief medical officer, and Patrick Vallance (on Johnson’s left), government chief scientific adviser, suggested the public would not comply with restrictions over a long period, the report read. But it added, “This concept of ‘behavioural fatigue’ had no grounding in behavioural science and proved damaging, given the imperative to act more decisively, sooner.”

Questions and risks

Cass welcomed the studies. “My review uncovered a very weak evidence base for benefits from the use of puberty blockers for children and young people with gender dysphoria. In fact, some children had more negative than positive effects,” she said. “However, given that there are clinicians, children, and families who believe passionately in the beneficial effects, a trial was the only way forward to make sense of this.”

But the Clinical Advisory Network on Sex and Gender, a group of UK and Irish clinicians calling for higher standards of evidence based care in transgender medicine, said it was unethical to expose children to risk for no clear benefit.

Spokesperson David Bell, a retired consultant psychiatrist and former staff governor and whistleblower at the Tavistock and Portman NHS Foundation Trust, said, “There is no sound scientific rationale for puberty suppression improving lasting health for children with gender related distress and therefore no sound basis for a comparative trial.”

Puberty blockers delay the development of secondary sexual characteristics. In theory this alleviates feelings of gender dysphoria in young people with the condition. Gender dysphoria refers to the psychological and physiological discomfort caused by gender incongruence.

Adele Waters, London

Cite this as: *BMJ* 2025;391:r2478

HPV vaccine is safe and reduces risk of cervical cancer, review finds

Human papillomavirus vaccination reduces incidence of cervical cancer by 80% in people vaccinated at or before the age of 16, two Cochrane reviews conclude. The comprehensive systematic reviews also found vaccination was not associated with an increased risk of long term side effects or infertility.

Researchers said they wanted to share high quality data to counter misinformation spread on social media that has affected vaccination rates. HPV vaccine uptake among female students has consistently fallen in recent years.

Senior author Jo Morrison, gynaecological oncology consultant at Somerset NHS Trust, said, “The phenomenon of misinformation is worldwide, and vaccine scares in other countries have had a massive impact on UK vaccination rates.”

The two Cochrane reviews examined different types of evidence. The first looked at randomised controlled trials (RCTs) and included 60 studies with 157 414 participants to estimate how effective HPV vaccines are at preventing the viral infection, which can cause precancerous changes in cells in the cervix. Median duration of follow-up was 12 months, and there were no efficacy data in people younger than 15 years.

This review found “high certainty evidence” that there was no increased risk of serious adverse events with all four HPV vaccines. The RCTs were generally not long enough to provide evidence on cancer. But there was “moderate certainty” evidence of reduced risk of cervical, vaginal, and vulval precancerous changes in women aged 15-25 years.

The second review included non-randomised studies such as cohort studies and pre- and post-vaccine introduction studies. Evidence from 225 studies involving more than 132 million people was included.

The review found “moderate certainty” of evidence from 20 studies that vaccination cuts incidence of cervical cancer. Five cohort studies with 4.3 million people reported a 63% reduced risk of cervical cancer after vaccination. The benefit was greater in younger people, with an 80% reduced risk of cervical cancer in those vaccinated at or before the age of 16.

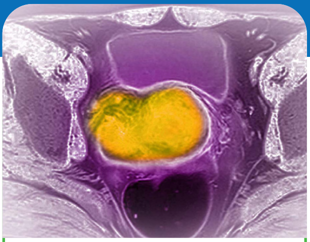
HPV vaccination was also found not to be associated with a range of specific adverse events that have been linked to the jab on social media, such as chronic fatigue syndrome, paralysis, and infertility.

Cervical cancer is the fourth commonest cause of cancer related death among women worldwide. In the UK there are 3300 new cases a year causing 890 deaths. More than 95% of cases are caused by HPV.

England’s HPV vaccine programme has been in place since 2008 for girls aged 12 to 13. Boys were included from 2019.

Jacqui Wise, Kent

Cite this as: *BMJ* 2025;391:r2479



Female student coverage dropped to 72% in the 2023-24 academic year, down from 90% in 2014-15, latest figures show. A similar fall has been seen among male students, from 81% to 68%

Lasting scars

None of the four UK governments had a strategy for exiting the lockdown, and none gave enough attention to the possibility of a second covid wave, the report found. It also noted a “toxic and chaotic culture” at the centre of the UK government.

A lack of trust between Johnson and some leaders of the devolved nations affected the collaborative approach to decision making, it said, adding that allegations of rule breaking by ministers and advisers undermined confidence in government.

While the report concluded that the four governments were right to impose a mandatory lockdown on 23 March 2020, it emphasised this was only because of their failure to act at an earlier stage. Hallett said, “While the lockdowns of 2020 and 2021 undoubtedly saved lives, they also left lasting scars on society and the economy . . . and exacerbated societal inequalities.”

The report makes 19 recommendations, including ensuring decisions and their implications are clearly communicated, greater parliamentary scrutiny of emergency powers, and broadening SAGE participation.

The lockdowns undoubtedly saved lives but also left lasting scars on society and the economy Hallett report

Future preparedness

The report said that Imperial College London modelling “established” that 23 000 lives could have been saved by an earlier lockdown. But David Spiegelhalter, emeritus professor of statistics at Cambridge University, urged caution over this figure.

“Modelling does not ‘establish’ anything—it is just an estimate based on numerous and challengeable assumptions. And yet the models estimate that daily infections were falling prior to lockdown on 23 March 2020. No doubt many lives would have been saved by earlier action, but this estimate from 2021 should be taken with caution.”

Clare Dyer, *The BMJ*

Cite this as: *BMJ* 2025;391:r2472

NEWS ANALYSIS

Is the government withholding data linking covid vaccines to excess deaths?

"Government 'withholding data that may link covid jab to excess deaths,'" read the headline in the *Telegraph*. "Health chiefs accused of a 'cover up' after failing to reveal data that may link covid jabs to excess deaths," said the *Daily Mail*.

These stories followed the rejection by a first tier tribunal (a UK judicial body that hears initial appeals against decisions made by government departments) of an appeal by the campaign group UsForThem.

The group wanted the UK Health Security Agency (UKHSA) to release further data on excess deaths linked to the covid-19 vaccine after the agency published anonymised data about the outcomes of the vaccination campaign on 30 May 2024.

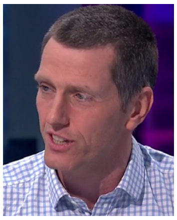
UsForThem was formed during the pandemic to lobby against school closures and the use of face masks in schools. It has also opposed covid vaccinations for children and the World Health Organization's pandemic treaty.

The group asked UKHSA to disclose, for every adult who died between 1 January 2021 and 31 December 2023 and whose record was therefore no longer in the published National Incident Management System database, three pieces of information: the age band they were in when they received their first covid vaccine, the dates of all doses they received, and their date of death.

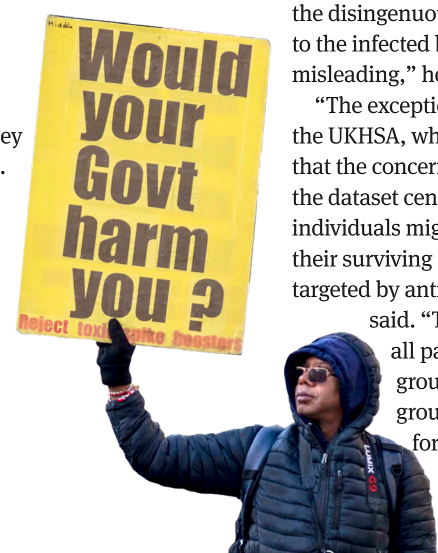
A UKHSA spokesperson explained why the agency did not wish to release the data in this format, telling *The BMJ*, "Protecting patient confidentiality is of critical importance. Releasing these data presented a real possibility that it could be used to identify individuals, which could result in significant distress.

"UKHSA provided a carefully anonymised version of the dataset that removed the risk of identification. We welcome the decision of the tribunal to dismiss the appeal."

This is an example of UsForThem whipping up a story from thin air
Sheena Cruickshank



It's a large dataset, but it has very low utility for the study of adverse effects of vaccination
Steven Riley



Sheena Cruickshank, professor of immunology at the University of Manchester, dismissed claims that UKHSA was withholding data. "This is an example of UsForThem whipping up a story from thin air and the *Telegraph* and *Mail* amplifying it."

Giving evidence to the tribunal, Steven Riley, professor of infectious disease dynamics at Imperial College London, explained why publishing further data was unnecessary.

"Even though this is a large dataset, it has very low utility for the study of adverse effects of vaccination," he told the tribunal. "There is no detail about the cause of death, and these data arise from a population with high levels of vaccination. It seems unlikely that an erstwhile unobserved risk of vaccination could be reliably detected in these data."

The negative headlines also attracted criticism from Stephen Griffin, professor of virology at the University of Leeds.

"Nearly everything about these articles, from the headlines to the disingenuous comparisons to the infected blood scandal, is misleading," he told *The BMJ*.

"The exception is the quote by the UKHSA, which clearly sets out that the concerns around releasing the dataset centre on the risk that individuals might be identified and their surviving family members targeted by antivaccine groups," he said. "The article quotes an all party parliamentary group and the campaign group UsForThem asking for these data to be made available on the grounds that it 'could' link the vaccine to excess deaths.

"However, there is no reasonable basis for this, especially given that anonymised mortality data are available from the Office of National Statistics (ONS), stratified by vaccination status, age, and other parameters."

Correlation, not causation

Cruickshank told *The BMJ*, "We have more evidence of the benefits of covid-19 vaccines than for any other vaccine in history. The benefits of the vaccines greatly outweigh the risks of the infection."

She explained that linking excess deaths to covid vaccines is a clear example of the post hoc fallacy in which causation is implied simply because one event follows another.

"People were vaccinated at scale for covid-19 as there was an urgent need," she said. "But people die from events like traffic incidents, stroke, or infection anyway, so the odds of you seeing deaths in people that have been vaccinated in the past 28 days are considerable because that is just statistically inevitable.

"You would see the same if everyone had been given a placebo; there still would be deaths after the vaccine. In order for there to be no deaths after a vaccination, that vaccine would have to prevent all deaths, from every cause, which is impossible."

Most vaccine side effects are minor and transient, such as soreness at the injection site and mild fever caused by a person's immune response, which is the same in all injections, not just the covid vaccine. Some people

DAN CHARITY /GETTY IMAGE

BETWEEN March 2020 and July 2023 there were **63** deaths involving covid vaccines in England

do experience more severe adverse reactions, for which they should be given adequate support.

In very rare cases, some fatal reactions have been recorded, although they are a tiny minority given the millions of doses given out. By August 2022 over 150 million doses had been administered in the UK, and WHO says that, to date, over 13 billion vaccine doses have been administered worldwide.

ONS figures show that between March 2020 and July 2023 there were 63 deaths involving covid vaccines in England—"involving" means a covid vaccine was recorded on the death certificate but may not have directly caused the person's death.

Saying these vaccines are more harmful than a pandemic virus is utter nonsense
Stephen Griffin

A freedom of information request in September 2024 found that the UK's vaccine damage payment scheme had made 188 payouts for death or disablement following covid vaccination.

Almost all the payouts related to the AstraZeneca vaccine, which research has suggested could, very rarely, cause blood clots with low platelet counts.

No evidence vaccines are responsible for excess deaths

Contrary to the assertions of those seeking further data from the UKHSA, there is no evidence that the vaccines are responsible for excess deaths, experts told *The BMJ*.

A large scale study into the effect of covid vaccination on excess deaths in 178 countries found a "significant negative correlation between all cause excess mortality and covid-19 vaccination" and that "countries with a higher vaccination coverage exhibited lower all cause mortality, suggesting that immunisation efforts may have played a vital role in mitigating the impact of covid-19."

ONS data show that in England all cause mortality was higher in unvaccinated people than in those who had received at least one dose of covid vaccine in every month from April 2021 to May 2023.

Griffin pointed out that billions of doses have been administered to people over the past five years and there was "no signal whatsoever" they are unsafe at the population level.

"Saying that these vaccines are more harmful than a pandemic virus that has caused tens of millions of deaths is utter nonsense," he added.

"If anything, we should be concerned about the increasingly limited access to these incredible interventions and the growing misinformation and complacency that is adversely affecting vaccine uptake across the board.

"We risk following America on a downward spiral where antivaccine motives disguised as 'scepticism' further erode one of our most important public health interventions."

Katharine Lang, Bristol

Cite this as: *BMJ* 2025;391:r2499

CDC website altered to suggest link between vaccines and autism

New guidance published by the US Centers for Disease Control and Prevention suggesting vaccines may cause autism has been slammed by medical and autism advocacy groups.

A CDC webpage that previously stated there was no link between vaccines and autism was changed on 19 November. It now reads, "The claim 'vaccines do not cause autism' is not an evidence based claim."

"To prevent vaccine hesitancy"

The revised webpage—part of a resource aiming to provide the public with science backed information on health matters—also says, "Scientific studies have not ruled out the possibility that infant vaccines contribute to the development of autism." It says that historically the CDC and other federal health agencies told the public that vaccines don't cause autism to "prevent vaccine hesitancy."

It adds the federal health department has launched a comprehensive study of the causes of autism, including vaccines.

Leading medical research organisations and advocacy groups criticised the change, reminding the public that decades of research had established no link between autism and vaccines.

Susan Kressly, president of the American Academy of Paediatrics, said, "Since 1998 independent researchers across seven countries have conducted more than 40 high quality studies involving over 5.6 million people. The conclusion is clear and unambiguous: there's no link between vaccines and autism."

Researchers have also pointed out that saying that no study has entirely ruled out the possibility that infant vaccines cause autism was not a logical argument.

"You can't prove something never happens," said Jake Scott, a professor at Stanford Medical School. "Scientists can't prove vaccines never cause autism because proving a universal negative is logically impossible."

It has since emerged that the changes to the website were directed by US health secretary Robert F Kennedy Jr (left), who has a history of suggesting that childhood vaccines may be linked to autism.

Luke Taylor, Rio de Janeiro

Cite this as: *BMJ* 2025;391:r2470

BMJ APPEAL 2025-26

"There is no ceasefire"—Gazan doctors brace for winter as Israeli attacks and aid restrictions continue

As flooding adds to people's trauma, the Palestinian health service faces a tough few months, **Elisabeth Mahase** hears

Palestinian doctor Mohammed Abu Mughaisib has worked for Médecins Sans Frontières (MSF) for more than 22 years, but he has never experienced anything like the devastation that Gaza has endured for the past almost 800 days. He tells *The BMJ*: "With all my experience being in Gaza and working during different military escalations, I cannot describe what I saw.

"We have to stop saying that the health system has 'collapsed' over the past two years. There is no more health system. It has been targeted at the primary, secondary, and tertiary level. Everything has been targeted."

Mughaisib, MSF's deputy medical coordinator in Palestine, is speaking from Ireland, where he was evacuated in September. This year's *BMJ* appeal supports MSF's work in Gaza and more than 75 other countries. "Donating will save children; it will save patients," Mughaisib says. "It will make a child cry less from his pain. It will save a woman who is pregnant and has medical problems. It will help an injured patient who needs long term care. All the donations will help to save the lives of patients in Gaza."

He says that MSF's work also ensures that Palestinian doctors get paid fairly, as many doctors in Gaza have been working without pay or are being paid so little that they cannot afford to support their families as the prices of basic and essential supplies rise. "In Gaza, [the prices are] like being in London, Paris, and Tokyo all put together," Mughaisib says.

MSF currently runs two field hospitals and several clinics in Gaza, while also supporting some of the main hospitals. The charity provides everything from primary healthcare and vaccinations to specialised care and surgical services. Mughaisib says that, although international doctors do come to support their teams, nearly all the staff that MSF employs in Gaza are Palestinian.

Hospitals overwhelmed

Mughaisib says that the hospitals that had been able to stay even partly open were constantly overwhelmed by mass casualty events and more closely resembled "public markets" than emergency departments. "You couldn't stand because of the crowdedness, the huge number of people who were critically injured. Injured patients were on the floor because there was no space. And doctors and paramedics were running from one side to another trying to save whoever they could.

"Medical staff running to the emergency department were afraid that they would see members of their family. It was a horrible situation inside the hospitals."

More than 70 000 Palestinians, including over 18 400 children, have been killed in Gaza in the past two years. A further 170 000 have been injured. At least 1722 healthcare workers have been killed in Gaza—an average of two every day for the past two years.

Despite a US brokered ceasefire between Israel and Hamas being

NOUR ALSAQQA/MSF

A 5 month old girl receives care at Nasser Hospital, Gaza, while she waits for a medical evacuation for treatment for a severe genetic immunodeficiency and malnutrition

officially declared on 10 October, Mughaisib says that the Israeli attacks never stopped. Israel has violated the ceasefire at least 497 times in 44 days, the Gaza government media office reports. More than 340 people—mainly women, children, and elderly people—have been killed in these attacks.

"Just yesterday there were 28 killed, 77 injured. So I mean to speak about a ceasefire: there is no ceasefire," Mughaisib says, referring to Israeli attacks on 19 November. "Since the declaration of a ceasefire, there have always been airstrikes and bombing—it didn't stop. A lot of people have been killed and injured. The majority of them were children and women.

"So there is no excuse about targeting military or Palestinian fighters or whatever. No, children were the main target."

"Smell of infected wounds and blood"

Mughaisib describes the carnage he saw in the days leading up to his evacuation. "I went to say goodbye to the team at Nasser Hospital. When I entered the MSF unit, patients were on the floor. There was no space. It was at more than 200% occupancy. Patients were shouting, crying from pain, and the smell of infected wounds and blood . . . I couldn't really stand it for more than five minutes," Mughaisib says.

"With all [MSF's] capacity, with all our means, we are still overwhelmed by the number of injured patients."

To him, the doctors and healthcare workers in Gaza are heroes for continuing to work and put their patients first despite the horrific circumstances—and in the face of detention, torture, and death. "They're really heroes. They're part of the population, so they are suffering the same as everyone else," he says. "And they're at risk leaving the hospital and leaving their family behind.

"They are stressed because they know that, at any moment, they could have members of their family in the emergency room. It has happened. Our colleagues were working in the operating room, and they received their children dead and injured."

Mughaisib says that doctors have been forced to provide healthcare without the right equipment and medication—including operating without painkillers or anaesthesia for patients or without enough surgical tools. "They could operate on two to three patients in the operating room or operate on patients on the floor."

On top of this, many have felt the gnawing starvation caused by aid being blocked and restricted for months. "The medical staff were starved and completely exhausted. There was no food to buy, so they had no energy, but still they were coming to work, and even with the warnings from the Israeli army to evacuate the hospital they were refusing," he says.

Despite some doctors who were detained by Israeli forces being released, many are still being held. One such doctor is MSF orthopaedic surgeon Mohammed Obeid, who is still being held in an Israeli prison after being detained during an Israeli raid on Kamal Adwan Hospital in October 2024.

"You cannot leave your patients—including babies in incubators—and just obey the orders and leave. [These doctors] had the ethical duty to stay, and the consequences were being arrested and tortured, and some of them have been killed because of this," Mughaisib says.

"[Obeid] didn't want to leave the hospital, because you cannot ask a doctor, an orthopaedic surgeon in a war zone, to leave his patients and leave the hospital. That's the only 'crime' that doctors like Mohammed Obeid have committed."

More than 300 health workers have been detained in the past two years by Israeli forces, with widespread reports of prisoners being beaten, tortured, and subjected to sexual violence. Orthopaedic surgeon Adnan Al-Bursh died in Israeli detention in April last year, and the Israeli human rights organisation HaMoked reported that it had evidence that Al-Bursh had been beaten and assaulted before his death.

Winter and flooding

Mughaisib is worried about the rise of infectious diseases this winter. Heavy rain and storms have caused flooding in Gaza in recent days, only worsening the conditions for the population that is trying to survive under flimsy tents and plastic tarps. "There will be an increase in infectious disease, upper respiratory and lower respiratory tract infections, and mainly in children and vulnerable adults. This will really overcrowd clinics and emergency departments," Mughaisib warns.

"The polluted water and lack of a sewage system will also mean gastrointestinal infections and skin infection."

And although the flow of aid into Gaza has improved since the ceasefire was declared, many items are still being blocked by Israel, and the number of trucks being allowed in is far below the number required to meet the desperate needs of two million people.

"People are still in tents—they can't go back to their homes because there are no homes anymore. Gaza has been destroyed," Mughaisib explains. "Plus now they are all living in a very tiny region." Despite Israel agreeing slowly to withdraw its forces to certain areas as part of the ceasefire agreement, much of the population is still squeezed into a small part of the Gaza Strip.

And with Gaza's water desalination plants and sewage system destroyed, access to clean water is a major issue. "Water is a huge problem in Gaza, drinkable water. MSF is providing drinkable water through distribution points, but still the needs are huge."

Polluted water and lack of a sewage system will mean gastrointestinal and skin infections

Mohammed Abu Mughaisib

Elisabeth Mahase, *The BMJ*

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THE BIG PICTURE

Transforming lives in Bangladesh

Friendship, a project dedicated to helping vulnerable communities in Bangladesh prepare for natural disasters and also to supporting their health, education, and livelihoods was last month named a winner of the 2025 Earthshot award. The £1m prize will be spent on expanding a programme of work to mitigate the effects of climate change.

The charity, which began as a single floating hospital (pictured), now "reaches more than 7.5 million people each year with healthcare services, provides over 8.3 million days of emergency food support, and gives more than 80 000 people access to safe drinking water in coastal areas." Founder Runa Khan said, "We have proved that community led, nature based solutions can transform lives. This recognition amplifies the voices of those most affected and shows that locally driven adaptation is both possible and essential."

Alison Shepherd, *The BMJ*

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ALLISON JOYCE; DAVID BATHGATE/GETTY

EDITORIAL

Implementing Jess's rule in primary care

Changing the approach to recurrent symptom presentation in England

Jess Brady died at the age of 27 in December 2020 after 20 appointments with her general practice to evaluate her symptoms. She eventually had adenocarcinoma diagnosed after seeking help from private healthcare[1] and died three weeks later. In September 2025, NHS England launched Jess's rule, describing it as a "life-saving patient safety initiative"[1] to encourage practitioners to "reflect, review, rethink"[2] if a patient presents three times with the same or escalating symptoms. Although the rule seems simple, as with many ideas for change, its implementation in an overloaded general practice is likely to be complicated. Many questions remain, including how practices should show compliance with a rule that encourages reflection.

Diagnosis is a complex, sociotechnical process that involves uncertainty and relies on information that is gathered and integrated over time and across multiple clinical settings.[3] Diagnostic errors, considered as failures to establish an accurate and timely explanation of a patient's health problem or to communicate that explanation to the patient, are the most common source of measurable and avoidable serious harm in English general practices,[4] and occur in over 4% of general practice consultations.[5] The reasons for such avoidable harms are multifactorial and include a complex interaction of cognitive and wider systems factors.[6,7] Interventions to improve diagnostic performance are underdeveloped across healthcare,[8-10] and particularly in primary care.[11] Among these few and fragmented interventions, Jess's rule offers a new opportunity to make an impact.

> **Guidance has largely been left to practices to decide**

Minimising diagnostic harm

Global literature supports the rationale of reconsidering the diagnosis when patients present with the same or escalating symptoms. A recent study of the safety of remote consultations suggested that diagnostic harm occurs when they are used incorrectly or force a wrong treatment algorithm.[12] The authors propose that three remote contacts on the same clinical problem should result in a face-to-face appointment.[13] NHS Education for Scotland's patient safety tool (the trigger review method), which was designed over a decade ago to detect previously unrecognised safety events, also included a similar rule of three: "record review when patients have ≥3 appointments in a week." [14]

Meanwhile, in US research the focus has been more on the use of automated triggers. For example, algorithms for electronic health record triggers (e-triggers) have been designed to alert healthcare systems or practices to patients with potential diagnostic errors based on their return visit patterns and care escalations.[15] Although the algorithms have not been applied widely outside research settings, they could help identify patients who might benefit from re-evaluation.

One of the challenges of Jess's rule is the lack of guidance on implementation, which has largely been left to practices to decide. Practices might consider a team approach that capitalises on diverse and overlapping skill mix.[16] Workflow changes could include the development and testing of escalation protocols for team members at all levels to raise concerns about a patient. Implementation will also require whole practice training. NHS England says, "No additional training or materials are required for implementation," but the main offer from the campaign is training through the Royal College of General Practitioners.[17] Training for other healthcare professionals in general practice is also required. From a human factors perspective, training alone is unlikely to solve a complex systems problem.

Although the rule is not intended to be activated by patients or families, they could use it in a similar way to Martha's rule, an initiative to trigger an urgent care review following concerns raised by patients, families, or staff in secondary care.[18] NHS England data on Martha's rule up to July 2025 show that only 41% of concerns raised were about acute deterioration, around half of which resulted in changes to care.[19] Using Martha's rule as a blueprint for Jess's rule is challenging given that Martha's rule has not been fully evaluated, and it is hard to know if learning can be transferred to a largely non-acute caseload.

Unsurprisingly, referring all patients with three visits would quickly overwhelm an already constrained system. Continued monitoring and future evaluation of the effect of Jess's rule in general practice and the wider NHS is needed. Evaluations should determine how practices implement the rule alongside their current systems for case review, identify any changes practices make, assess any unintended consequences, and discover what does and doesn't work, and why. Such evaluations and learning could position Jess's rule as an exemplar for a national strategy to reduce diagnostic harm.

Rachel Ann Spencer, associate professor of general practice, University of Warwick
r.spencer.2@warwick.ac.uk

Paul Bowie, programme director (safety and improvement), NHS Education for Scotland, Glasgow

Hardeep Singh, co-chief, health policy, quality and informatics program, Michael E DeBakey Veterans Affairs Medical Center and Baylor College of Medicine, Houston, Texas

Andrew Carson-Stevens, professor of patient safety, Cardiff University

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EDITORIAL

Health information in the age of influencers

Improving health discourse needs attention to information environments where trust can grow

Social media influencers have entered the healthcare conversation. Raffael Heiss and colleagues' analysis highlights the growing trend of medical advice shared by social media influencers and raises vital concerns (doi:10.1136/bmj-2025-086061).[1] The article describes how health conversations now unfold in commercialised spaces that mix expertise, entrepreneurship, and entertainment, exposing users to bias and potential harm. They identify four overlapping biases—limited expertise, industry influence, entrepreneurial interests, and personal belief—and call for stronger governmental regulation, platform moderation, and improved digital literacy.

Developing "influence literacy" clarifies how visibility, affect, and credibility circulate across digital platforms, clinical encounters, and community spaces.[6] The power of influencers extends beyond persuasion to the ecosystems of influence that arise from the interplay of technology, commerce, and collective sensemaking and can reinforce or undermine shared understandings. The result is that the patient and clinician can sit in the same examination room yet inhabit entirely different worlds.

Influence in digital communities

As Heiss and colleagues outline, the EU Digital Services Act and Italy's influencer code are starting to regulate influencer health content.[1] Similar measures are emerging elsewhere. For example, Australia bans paid health testimonials; India requires qualified health influencers to disclose credentials; the United Arab Emirates licenses health related promotion; South Africa requires clear sponsorship disclosure and evidence based claims; and China permits health content only from qualified professionals verified by platforms.[11-15] Evidence of their actual enforcement and effectiveness remains limited.

Emotionally charged or moral content circulates more widely than evidence based information

Tina D Purnat, Prajna leadership fellow, Harvard TH Chan School of Public Health, Boston, Massachusetts
tinapurnat@hsph.harvard.edu

David Scales, assistant professor, Weill Cornell Medicine, New York

But regulation and moderation alone cannot sustain public trust. Information environments and pathways must be designed to nurture dialogue and reflection rather than simply managing harm. Platforms should reward trustworthy information, highlight sources, and make recommendation algorithms visible.[16] As evidence on harms builds, calls for platforms to invest in mitigation will grow.

Influencers straddle the intersection of expertise, marketing, and entertainment. Many build audiences through familiarity and personal branding, which makes advice feel authentic and persuasive. Some turn debunking into performance: split-screen "duet" videos where one user publicly dismantles another's claims, mixing correction with entertainment.

On social media, platforms profit more from attention than clicks.[17] Unlike a bookstore that earns only when you buy, a platform also earns when you linger, more like a taxi meter. Engagement, not accuracy, drives visibility, as emotionally charged or moral content circulates more widely than evidence based information.[18] The result is an information ecosystem that rewards certainty and outrage over reflection and trust, distorting norms, values, and perception of risk.[19]

Practitioners need support to improve health discourse

Every clinical consultation now takes place within a wider information environment[5] that shapes patients' beliefs and emotions. Asking about patients' online exposures, associated feelings, and questions raised can open dialogue instead of confrontation. Jointly reviewing a health app or discussing how to assess online claims can be as practical as explaining treatment options.[20]

Shared decision making must evolve for the digital age, supported by health systems providing tools, remuneration, and support for clinicians.[4] This could include screening for health information ecosystems at the point of care, as with other social determinants of health[21]; extending social prescribing into digital spaces with clinician endorsed forums[22]; or certified or clinician supported peer discussion spaces.[23] Digital community health workers can help people assess and contextualise health information while linking them to programmes and services as needed.[24] The key is structuring interventions around people's information environments; like exposure to physical environments, information exposure shapes health, and it deserves similar care.[4]

Influence is now ecological, arising from the interplay of technology, commerce, and collective understanding.[1] Strengthening public discourse about health means clinicians and policymakers must now attend to the information ecosystems where users make meaning.[6] Regulating and moderating platforms and influencers is necessary, but fostering trust through verified communities, clinician endorsed forums, and participatory public health campaigns will be indispensable.

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ANALYSIS

Responding to public health challenges of medical advice from social media influencers

Raffael Heiss and colleagues argue that influencers' medical advice is often shaped by multiple biases and suggest how to reduce the associated risks

Social media influencers have become powerful in a digital information ecosystem shaped by platform algorithms and commercial incentives.[1,2] Influencers are people with large followings on social media platforms gained by posting engaging and entertaining content, but many have also become important sources of health information.[3] Their backgrounds range from qualified health professionals to people with no medical training, and their reach spans from a few thousand followers to millions. More than 70% of young adults in the US follow influencers, and over 40% have purchased products based on their recommendations.[4] In Austria, 83% of 15-25 year olds report seeing health related influencer content, and 31% have purchased dietary supplements, 13% medications, and 11% medical self-tests as a result.[5]

KEY MESSAGES

- Social media influencers are a growing source of medical advice but can be misleading
- Influencers' reliability is often undermined by four key biases: lack of expertise, industry influence, entrepreneurial interests, and personal beliefs
- Such biased or misleading advice—amplified by parasocial bonds and direct engagement—can cause physical, psychological, financial, and systemic harm
- Coordinated action by governments and platforms is essential to protect users and to strengthen users' ability to evaluate medical advice from influencers

The reliability of influencer advice varies widely

The reliability of influencer advice varies widely. For instance, a recent study found that influencer and corporate posts about popular medical tests with uncertain evidence and risks of overuse were mostly promotional, citing benefits in 87% of cases but mentioning harms in only 15%.[6] Another study of German influencers' promotion of dietary supplements found that about two thirds of the recommended doses exceeded national safety recommendations and 7% surpassed the European Food Safety Authority's upper safe limits.[7] Such advice can cause psychological, physical, financial, and systemic harm—from inaccurate self-diagnosis and inappropriate treatments to unnecessary spending and higher healthcare costs.

Information provided by influencers can be subject to four sources of bias: lack of medical expertise or relevant knowledge, industry influence, entrepreneurial interests, and personal biases (table 1). The effect of these biases is magnified by influencers' ability to form real or one sided (often referred to as "parasocial") bonds with followers, making them highly persuasive communicators.[5,14] Oversight is therefore important, but effective monitoring and regulation are difficult because user experiences are personalised, shaped by opaque algorithms, and often cross national borders beyond the reach of regulation.

Sources of bias in influencers' medical advice

The first source of bias is a lack of expertise or relevant knowledge. Unlike healthcare providers or trained medical journalists, many influencers have no formal education in the topics they cover, increasing the risk of promoting inappropriate tests or treatments. A prominent example is celebrity Kim Kardashian, who encouraged her 360 million Instagram followers to have full body screening with

Table 1 | Examples of influencers' biases and harmful medical advice

Bias	Influencer	Medical advice	Why it can be harmful
Lack of medical expertise	Chantelle Knight (100 000 TikTok followers): UK based influencer and advocate for neurodivergent communities	Promoted SaffPro, a saffron-based supplement, as a natural alternative to attention deficit/hyperactivity disorder (ADHD) medication and claimed effects on serotonin, dopamine, and melatonin levels[8]	May discourage medically prescribed treatments for ADHD, misleadingly suggest medical benefits. The UK Advertising Standards Authority ruled the ads were misleading and potentially harmful
Industry influence	Khloé Kardashian (300 million Instagram followers): US media celebrity	Quote from Instagram post: "I love @nurtecodt so much! ... I just take #NurtecODT and it can start to relieve my migraine pain within 1 hour!!!"[9]	Rimegepant (Nurtec) is a prescription migraine medication, and the direct-to-consumer advertising can be accessed in regions where such advertising is prohibited
Promoting own products	Dr Eric Berg (14 million YouTube subscribers):US chiropractor who shares health advice on YouTube and runs an online supplement store	Quote from video: "Today we gonna talk about why an average person should be taking 10 000 IU of vitamin D3 as a maintenance dosage every single day."[10]	Promotes high dose supplementation while selling his own brand of vitamin D and other supplements, some of which were subject to a legal warning for lead content above safety levels[10,11]
Potential personal bias	Ellie Grey (200 000 Instagram followers): British wellness influencer who shares alternative health views on Instagram and Telegram	Claimed that cannabis, intravenous vitamin C, apricot kernels, or alkaline diets can cure cancer. Denied that a child in the UK died from measles, suggesting the disease is not dangerous.[12,13]	Promotes anti-science views that may lead followers to reject evidence based medical care. Could delay effective treatment or vaccine uptake and result in serious harm

Even influencers with medical qualifications can provide misleading advice

ROWENA SHEEHAN

magnetic resonance imaging—a test which is without proved benefits and linked to overdiagnosis, unnecessary interventions, and costs.[6] However, even influencers with medical qualifications can provide misleading advice, particularly when speaking outside their area of expertise or offering generalised recommendations without knowledge of individual health histories. During the covid-19 pandemic, for instance, medically trained influencers with large followings promoted insufficiently tested treatments, including high dose vitamin D supplements and ivermectin.[15,16]

A second source of bias is industry influence. Companies may provide free products, pay for promotional posts on social media or blogs, use affiliate marketing (commission for sales through unique links), or engage influencers in long term collaborations as brand ambassadors.[6,17] As a result, many influencers are paid to promote direct-to-consumer tests, skincare products, or even prescription drugs. This is especially problematic when the influencers are physicians and profit from promoting medical products or treatments.[18] In many countries, rules require influencers to clearly disclose any “material connection” to a brand— such as payment or gifts—but enforcement is inconsistent and penalties for violations are rare or minimal. A recent report from the UK Advertising Standards Authority estimated that only 57% of influencers’ advertising content on Instagram and TikTok was adequately disclosed.[19]

Third, many influencers pursue their own entrepreneurial interests. To gain attention, they often use threat inducing content that drives engagement.[20] Such strategies can help influencers expand their audience while promoting their own products, including dietary supplements, which are weakly regulated, easy to produce, and often untested.[7] Some create and amplify concerns about low testosterone or vitamin deficiencies to boost sales, despite the risks of overdose, drug interactions, or contamination with harmful substances.[6-11] Certain supplements may also act as gateway products—for example, the use of muscle building supplements has been associated with subsequent use of anabolic steroids among young men.[21]

Finally, influencers—including patients and trained physicians —may be shaped by personal biases. These include lifestyle choices or ideological beliefs that are not supported by reliable evidence, such as in homeopathy or anti-vaccine misinformation. Some lifestyle influencers share anti-vaccine content rooted in

Table 2 | Actions to protect public from potential health harms from social media influencers

Solution	Action	Challenge
Government		
Make platforms accountable for systemic health risks	Require platforms to share data, engage in algorithm audits, and report measures to mitigate risks	Low political will; lobbying efforts of platforms
Editorial responsibility for influencers	Develop and implement codes of conduct similar to those for broadcasters (eg, Italy's national influencer code)	Limited resources for oversight; resistance from platforms
Restrict harmful medical advice	Prohibit clearly harmful content for public health (eg, France's ban on content discouraging chemotherapy).	Concerns about freedom of expression; avoid "chilling" effects
Strengthen advertising regulations	Update advertising regulations and sanction non-compliance (eg, fines to influencers, platforms).	Enforcement is difficult; low political will; lobbying efforts of industry.
Support medical fact checking	Provide resources to reputable organisations, researchers, and medical associations to ensure a diverse supply of fact checking	Low political will; limited resources available
Support digital and health literacy	Invest in public and school digital and health literacy programmes; support campaigns targeted at influencers and users	Limited resources available; takes time; some target groups hard to reach
Social media platforms		
Strengthen fact checking	Work closely with medical fact checkers. Offer easy access to fact checking on the platform and further develop automated detection systems	Fact checking and automated systems are resource intensive; limits profits
Offer clear guidelines for medical advice	Involve professionals to develop guidelines and integrate into terms of service; sanctioning non-compliance (suspensions, demonetisation)	Influencers are cash cows for platforms; limited incentives on platform side
Train influencers	Create mandatory training modules for influencers covering evidence based communication and disclosure rules.	Low incentives for platforms; profit relies on attention grabbing content
Enforce geospecific advertising	Implement technological solutions to limit all advertising content to authorised regions (geoblocking)	Difficult for influencers' native content and subtle promotions

personal experience and mistrust of mainstream health authorities.[22] While many people hold such beliefs, these biases are typically moderated in professional contexts through institutional norms (as in journalism or medicine) and organisational safeguards, such as editorial oversight or clinical guidelines. Influencers are usually not subject to such standards and operate without professional or editorial accountability.

Given these sources of bias, why do people still trust influencers? One reason is that many are unaware of these biases or overlook them, sometimes not even recognising when messaging is actually marketing. Another is that influencers often act as role models, and their communities may trust them even in promotional settings.[5] Their authority rests on three interrelated facets: they have the ability to create intimate bonds through sharing personal experiences and interacting directly with users; they are often perceived as authentic because they express personal opinions and experiences without institutional constraints; and they signal expertise in the field they comment on, positioning themselves as opinion leaders.[14] Together, these dynamics can draw attention away from potential biases in their advice.

Can influencers also help the public?

Some influencers do provide useful health advice.[2 23] This includes doctors and others who help to debunk common misconceptions—for example, myths about oral contraceptives, toxins in vegetables, or unsupported vaccine side effects.[24] Influencers sometimes work with medical professionals to amplify evidence based messages[23] using plain, relatable language and reaching audiences that traditional health communication often misses, including young people and marginalised groups. They can also use their bonds with followers to motivate lifestyle changes and encourage healthy behaviours.

Influencers who are patients themselves may provide valuable peer support, especially for stigmatised conditions, by creating safe spaces and sharing personal experiences. Many patients also see themselves as experts in their own condition, and their lived experience can offer important insights that differ from professional knowledge. However, their specific expertise does not automatically translate into broader medical authority. Lived experience should therefore be complemented by reliable evidence, and should not be used irresponsibly—for instance, to promote medicines.[17]

Action to reduce harm

Maximising the benefits and minimising the harms of influencers' medical advice will require collaboration between multiple stakeholders, particularly governments and social media platforms (table 2).

Governments can act by reducing systemic risks, including those arising from legal but harmful medical advice. The EU's Digital Services Act (DSA) requires large online platforms to assess systemic health risks and report how they mitigate them.[25] For example, platforms must evaluate whether their algorithms amplify anti-vaccine content and describe measures to limit its spread. These processes are subject to independent audits, with substantial fines for non-compliance.

Another approach is to increase influencer accountability by assigning them editorial responsibility, treating them similarly to traditional media. In Italy, high reach influencers must register with the national media authority and comply with a formal code of conduct, which includes avoiding misleading or harmful health content.[26] In France, legislation prohibits influencers from promoting cosmetic surgery, nicotine products, certain medical devices, and from encouraging

Governments can act by reducing systemic risks, including those arising from legal but harmful medical advice

therapeutic abstention (eg, discouraging chemotherapy). Violations by influencers targeting a French audience (eg, using French language) can incur fines of up to €300 000 (£265 000; $345 000) or prison terms of up to two years.[27]

Platforms also bear responsibility as hosts and amplifiers of influencer content. They can strengthen fact checking mechanisms, partner with medical fact checkers, and avoid shifting responsibility to users. Transparency could be improved by granting independent researchers access to platform data, algorithms, and moderation processes. Although the EU Digital Services Act mandates such access, it still relies on the cooperation of platforms, and platforms could extend access to other regions. Broader access would enhance understanding of the risks of misleading medical advice from influencers and its cross border spread. Platforms can also establish professional standards for influencers, implement mandatory training, and enforce sanctions—including restricting their ability to earn money on the platform or removing them—when standards are breached.

Platforms also bear responsibility as hosts and amplifiers of influencer content

Other societal actors can also contribute. Some influencers may participate in training, share evidence based information, and engage in public health campaigns.[23 28] Users can help by correcting misleading advice in comment sections or reporting problematic posts through in-platform tools or to national regulators such as the UK's Advertising Standards Authority.[29] Yet awareness of these mechanisms is low and users need scepticism, digital literacy, and motivation to respond. Traditional media and fact checking organisations can debunk harmful advice, while healthcare professionals can counter misinformation in consultations. Health institutions can partner with influencers to deliver evidence based messages, and patient organisations can mobilise communities to critically discuss circulating advice. Most of these measures, however, are reactive and depend on sustained funding and government support.

No single solution

All of these measures face obstacles, and regulating platforms and influencers is not straightforward. Platforms are powerful commercial organisations with substantial lobbying resources,[30] while influencers are profitable content creators. To resist regulation, platforms invoke freedom of speech—even for misleading content. Similar tactics have long been seen in other public health disputes, including those involving tobacco, alcohol, and food industries, which framed regulation as an attack on individual choice and portrayed the state as a political leviathan.

Governments should not be deterred by such efforts. Effective regulation requires political will, particularly in the face of industry resistance. The EU's Digital Services Act is an attempt to make platforms more accountable. If platform cooperation is ensured and enforcement proves effective, the act could serve as a model for other legislation. The UK's Online Safety Act, for example, shares similar goals but focuses mainly on illegal content and child safety, and does not explicitly mandate oversight of harmful but legal medical advice directed at adults. Regulators will also need better ways to hold influencers accountable. Existing breaches of advertising rules often result in little more than warning letters or content removal, which has limited deterrent effect.[8] Stricter regulations in Italy and France attempt to increase sanctions, but it remains uncertain whether compliance with the regulations can be effectively monitored or if they will truly enhance accountability, particularly across borders. For instance, users may still encounter English language content, including prescription drug advertising from the United States. International agreements and the implementation of georestrictions for regulated health products may offer additional protection by limiting access to such content by location.

Other measures face similar constraints. Fact checking often fails to reach its intended audience, and evidence is limited that influencer training changes behaviour at scale.[28] Public education to help users critically assess unqualified medical advice is urgently needed, but such efforts will take time to show results. Engaging influencers to share evidence based advice, particularly with hard-to-reach groups, is therefore also important.[23] Yet public funding for these initiatives will not compete with the far greater financial resources of industry collaborations.

There is no one-size-fits-all solution, but combined efforts across multiple fronts can make a meaningful difference. Required strategies include effective regulation, stronger platform and influencer accountability, and user empowerment through targeted education and access to reliable, fact checked information. Together, these strategies can help create a safer information environment in which influencers are constructive rather than harmful sources of health advice.

Raffael Heiss, professor
Raffael.Heiss@mci.edu

Elena Engel, PhD candidate

Sascha Gell, PhD candidate, Management Center Innsbruck, Innsbruck, Austria

Steve Wolshin, Dartmouth Institute for Health Policy and Clinical Practice, Dartmouth College, Lebanon, USA

Sneha Dave, Generation Patient, Indianapolis, USA

Erin Willis, University of Colorado Boulder, Boulder, USA

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SOCIAL MEDIA AND HEALTHCARE

The social media influencers your patients are turning to before they get to your clinic

Instagram and TikTok accounts of patients who share their experience of their conditions are the new "Dr Google." **Stephanie Santos Paulo** speaks to four "patient influencers" about misinformation, medical gaslighting, and paid-for promotions

Tilly Rose was a "medical mystery for over 20 years," discharged from hospital several times with no clear diagnosis to explain the symptoms that had plagued her since the age of 10. "I began sharing little snippets of my life behind the hospital curtain on my Instagram," she tells *The BMJ*. That was in 2020; her account (@thattillyrose) now has more than 106 000 followers.

"At my most desperate, I posted on Instagram and asked the world for ideas," she says. Replies from medical professionals, researchers, and patients all over the world flooded into her inbox. After looking into every suggestion she received, she was led to a doctor in Germany and has since had three surgeries after diagnosis of multiple vascular compressions, a condition in which blood vessels are compressed by surrounding structures, compromising normal blood flow.

"Instagram saved my life," she says.

Rose is one of many "patient influencers" who have amassed large followings by sharing personal stories of their conditions and care that foster a sense of authenticity and emotional connection with followers. Patients and doctors alike have been consulting search engines for answers to unexplained medical problems for years, but social media platforms such as TikTok and Instagram are now superseding "Dr Google." In a 2022 survey of 2000 adults commissioned by the US pharmacy discount company CharityRx, one in five Americans said they consulted TikTok before their doctor when seeking treatment.

Influencers form online communities that act as a support network for patients who believe that they can't get sufficient access to doctors or feel dismissed by them. But there is concern that some influencers may propagate harmful health related behaviours and decisions by spreading misinformation, promoting products that may have no evidence base, and being influenced themselves by conflicts of interest around paid commercial partnerships.

Access and advice

Unlike many of his Instagram followers, Liam Robertson had never heard of "ulcerative colitis" when he had it diagnosed. "I was going to my doctor saying, I'm bleeding from my bum. And he was saying, there's nothing wrong with you. I did that for three years."

Robertson (@livingwithulcerativecolitis) has 9300 followers. He received as many as 100 direct messages in a single day after his first post, many from people who suspect they too have ulcerative colitis. Drawing on his own experience, he has advised patients on preparing for medical appointments, highlighting the importance of recording specific symptoms such as number of stools passed a day, presence of mucus or blood in the stool, and dietary triggers.

"It's almost like a strategy to help them," Robertson tells *The BMJ*. "I don't feel like we should need that, but we do."

Lily Mae's Instagram (@chronicallylil) details her life with diagnoses of Ehlers-Danlos syndrome, endometriosis, and vascular compression syndrome. She says that several of her diagnoses came about because of her online community, now with more than 11 500 followers. "Other patients shared their experiences, symptoms, and advice, and it gave me the knowledge to advocate for myself and bring up certain conditions to my doctors," she says.

Robertson adds, "I think partly that people are finding social media better for answers because it's not easy to get hold of a medical professional." He's not wrong: patients hoping to see a specialist NHS secondary care doctor can expect to join a waiting list of 7.4 million people. The government's target, which aims for 92% of patients to start non-urgent treatment within 18 weeks of referral, hasn't been met since 2016.

Misinformation and commercial partnerships

But influencers have come under fire for promoting diagnostic tests that lack evidence of benefit in healthy populations, carrying risks of overdiagnosis and overuse. Doctors have expressed concern about patients who have opted for alternative treatments in place of conventional evidence based medicines for conditions such as diabetes, on the basis of misinformation found online.

Robertson has seen a "big movement" of influencers on social media encouraging people to come off their medicines for conditions such as ulcerative colitis—suggesting, for instance, that it can be "fixed by stopping eating rubbish foods."

Some influencers may face consequences for spreading inaccurate health information, while others go unchecked. In June 2025 the UK Advertising Standards Authority declared the social media influencer Chantelle Knight to be in breach of UK advertising rules after she shared a TikTok and paid-for Facebook post promoting SaffPro, a supplement containing saffron, as an alternative to medicine for attention deficit/hyperactivity disorder.

The effectiveness of such advertising regulations in tackling health misinformation is dubious, however. "Existing breaches of advertising rules often result in little more than warning letters or content removal, with limited deterrent effect," write Raffael Heiss and colleagues in a *BMJ* analysis (p 238).

Social media influence may also be leveraged to promote products for commercial gain, such as paid partnerships between influencers and drug companies. "Patient influencers act as a form of interactive direct-to-consumer advertising," said Erin

It's like a strategy to help. I don't feel like we should need it, but we do
Liam Robertson

Using social media opens a dialogue you can't have in a 10 minute appointment
Jen Moore

Other patients gave me the knowledge to advocate for myself
Lily Mae

Willis in 2023, commenting on a study she coauthored. Willis, an associate professor of advertising, public relations, and media design at the University of Colorado Boulder, is also a coauthor of the analysis in *The BMJ*.

Bed sheets and mushroom tea

Robertson points to one company that sells "grounding sheets"—bed sheets that purport to reduce inflammation in the body. "A guy said that he cured his ulcerative colitis with this bed sheet," says Robertson. "The scary thing is, they're selling a lot of them."

Another influencer promoted a mushroom tea that he says cured his Crohn's disease. "He's all over the internet now," says Robertson. "Almost a million pounds in sales he's made from this Crohn's disease 'cure.'"

Robertson also warns that the word "influencer" can be problematic, as it emphasises "influencing someone's decision to buy something as opposed to influencing someone to make the right decision about their health." He adds, "I don't think I've ever promoted a product purely for direct monetary gain, aside from my own books and the nutrient support product I developed. Whenever I post content that I've monetised, I always disclose it, either verbally within the post or by using 'Ad' in the caption."

Jen Moore, who posts about endometriosis and adenomyosis on her Instagram account @jen.dometriosis, says that she's "extremely selective in the partnerships I do accept, which are always disclosed in the manner set out by the Advertising Standards Authority." She adds, "Branded content is always put forward as my personal experience or as a potential option to look into—never as medical advice or promises of results.

"I've built the trust of thousands of patients, and that's something that I don't take for granted or ever want to misuse."

Lack of nuance and growing need for regulation

Robertson says even when influencers try to share evidence based information, it can be hard to capture important nuances when making short form content. He explains, "If you're wanting to snap attention on a five second clip, you can't put much information in that. It's a responsibility. I think you need to be really careful."

Some countries are introducing regulations to moderate health related content on social media. *The BMJ*'s analysis argues that measures such as the EU's Digital Services Act can hold large platforms accountable for user content that poses health risks, whereas France and Italy take a different approach by targeting influencers directly, such as by issuing fines for rule breaching content.

In China there are reports of a new law introduced in October that requires online influencers to show relevant credentials, such as a degree or professional certification, before posting about regulated topics such as health, finance, or education.

Heiss and colleagues write, "All of these measures face obstacles… There is no one-size-fits-all-solution." They argue that effective moderation of health misinformation will require "collaboration between multiple stakeholders, particularly governments and social media platforms."

Younger people may be particularly receptive to influencers who have no medical qualifications. In a 2025 survey of 16 000 people across 16 countries conducted by the communications company Edelman, a third (33%) of Gen Z and early Millennial participants (aged 18-34) said that content creators with no medical training had influenced their health decisions, compared with only 9% of those aged over 55.

"Medical gaslighting" and the patient-doctor divide

Even when patients receive advice from a doctor they may feel dissatisfied with the information they receive and may turn to social media to air their grievances.

"Medical gaslighting" has become a popular term (search for "#medicalgaslighting" and you'll find more than 46 000 Instagram posts, as well as many hours' worth of TikTok videos), and it has even been recognised in academic literature. Moore explains, "It's when a medical professional of any kind diminishes, questions, invalidates, or makes you feel like what you're experiencing isn't correct or that you're not a reliable narrator of your own experience." She lists the term on her Instagram biography.

On the other hand, doctors may be unconvinced by the value of online patient communities. "['Influencer'] is a bit of a dirty word in certain circles, including clinical ones," says Moore, who prefers to emphasise her roles as an educator, author, and campaigner when speaking to medical professionals. "Doctors are very sceptical of what's happening on social media; patients are very sceptical of what's happening in a doctor's office."

She explains, "The mistrust is understandable—but it's something that we have to embrace and repair. [Using social media] opens a dialogue that you just can't have in a 10 minute appointment."

This is why she facilitates sessions with medical students at Cambridge University, teaching them about the patient experience of endometriosis and adenomyosis. "The work I try to do, through social media and offline, is to bridge that gap and almost be a relationship therapist between the two," says Moore. "Unless we involve clinicians in what we're trying to do, nothing's going to change."

She emphasises the role of patient influencers in signposting medical professionals. "I'm just laying out the information from experts and saying, take this to your medical team and talk to them about these options," she says. "I'm not actually trying to diagnose anybody or tell them which treatment path to take. That's a doctor's realm, not mine."

Lily Mae concludes that doctors need to engage with patients who share their stories online. "There's such a wealth of firsthand knowledge being shared—real stories, symptoms, and lived experiences that could help improve care if more providers took the time to understand them."

Stephanie Santos Paulo, editorial registrar, *The BMJ*
ssantospaulo@bmj.com

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E-CIGARETTES

Should a smoke-free generation also be vape-free?

The UK is set to make global history with a bill promising to place a birth year ban on the sale of cigarettes. What the legislation says on vaping calls into question its role in smoking cessation, as well as its impact on young people and those who have never smoked. **Charles Ebikeme** reports

Vaping is substantially less harmful
Sarah Jackson

The UK does quite well in reducing smoking rates
Lion Shahab

In 2017 the UK set an ambition to create a smoke-free generation. The Tobacco and Vapes Bill, currently making its way through parliament, aims to be the "biggest public health intervention in a generation."

If the bill passes, its generational ban will place the UK's smoking laws among the strictest in the world, after New Zealand's own world leading legislation was repealed and Malaysia's generational ban was abandoned. Through the UK bill, vaping is set to come under some of the same strict measures as smoking—with a ban on vaping in indoor spaces and eventually in outdoor spaces where children and young people are present. But it falls short of an outright ban on vapes because of their use as a tool in reducing harms from smoking.

"I strongly believe smoke-free generation policies should not extend to vaping," says Sarah Jackson, principal research fellow in the University College London (UCL) Tobacco and Alcohol Research Group. "The smoke-free generation policy is justified by the devastating harms of tobacco smoking, which kills up to half of lifelong smokers. Vaping is both substantially less harmful and one of the most effective—and by far the most popular—smoking cessation aids."

But this position is not uncontroversial, particularly in the global context. The UK continues to stand largely apart in its consistent promotion of vaping as a smoking cessation tool: its rise among young people, and those who have never smoked, is seen as a particular argument for seeking further measures against its harmful effects.

Public health success

Data from the UK's Office for National Statistics from 2023 showed that around six million of the country's adults (11.9% of people over 18) smoked cigarettes—the lowest proportion of current smokers since records began in 2011.

"There's been a huge reduction in smoking rates," says Lion Shahab, professor of health psychology at UCL and co-director of its Tobacco and Alcohol Research Group. "And the UK does actually quite well, comparatively speaking, when you look at other European countries."

This is due to the UK's comprehensive tobacco policy and multipronged approach to helping users quit smoking. From 2002, successive UK governments have implemented policy initiatives aimed at making tobacco and vaping products less attractive and limiting the availability of tobacco products.

Such policy initiatives include legislation to restrict tobacco advertising, the introduction of standardised packaging, banning menthol flavoured tobacco products, and local "stop smoking" services—although such services are now under threat from severe budget cuts imposed by the government on integrated care boards, say senior figures from medical royal colleges and the BMA.

Alongside its support for nicotine replacement treatments such as patches or gum, as well as smoking cessation medicines such as varenicline and bupropion, the UK is one of the few countries to endorse and promote the use of vaping products in its national tobacco control programme. This has had

THE UK'S TOBACCO CONTROL—A TIMELINE

1966	1967	1970	1971	1975	1979	1985-86
• The UK government asks the tobacco industry to withdraw cigarette coupon schemes. The industry refuses.	• Kenneth Robinson, minister for health, announces the government's intention to "introduce legislation in due course to take powers to ban cigarette coupon schemes, to control or ban other promotional schemes, and to limit other forms of advertising." This action is not taken.	• The director general of the World Health Organization presents a report to the 23rd World Health Assembly on *The Limitation of Smoking*. The paper, prepared by Charles Fletcher of the Hammersmith Hospital and Daniel Horn, calls for an end to cigarette advertising and promotion, among other recommendations. As a result, the assembly bans smoking at meetings and affirms the related health hazards in strong terms.	• Keith Joseph, secretary of state for health, affirms the government's intention to control tobacco use through voluntary agreement with the tobacco industry.	• The code of advertising practice for cigarettes is to be taken out of the hands of the industry and to be monitored by the Advertising Standards Authority, while placing tar groupings on packs and advertising. Imperial Tobacco, which at the time controls two thirds of the UK market, agrees unilaterally to remove brand names and logos from racing cars in UK races.	• Main post offices are made smoke-free.	• London Regional Transport bans smoking at all Underground stations that are wholly or partly underground. • The Protection of Children (Tobacco) Act is passed, making it illegal to sell any tobacco product to children under 16. The law previously applied only to smoking tobacco.

LOWEFOTO/ALAMY

Manchester's Mayfield Park is both smoke-free and vape-free

some success. In 2025 the UCL Tobacco and Alcohol Research Group published research findings that across the range of effective smoking cessation aids available in England, as of 2023-24 the most commonly used smoking cessation aid was e-cigarettes—used in 40% of quit attempts—and that quit attempts were more likely to be successful when aided by e-cigarettes. However, the researchers also noted that, among people who used e-cigarettes to quit smoking, around 85% were still vaping afterwards.

"If you don't smoke, don't vape"

In 2024 NHS England reported that a quarter of 11-15 year olds had tried vaping, and one in 10 did it frequently. Official health advice is that children and adult non-smokers should never vape. The UK's chief medical officer, Chris Whitty, explained it thus: "If you smoke, vaping is much safer; if you don't smoke, don't vape."

However, the counterfactual to this argument isn't easy to define, says Shahab: whether young people who start vaping would have started smoking instead is difficult to evaluate. The prevalence of vaping, particularly in young people, is one of the reasons why the UK's bill includes it. The 2023 Office for National Statistics data showed that 5.1 million people over 16 used e-cigarettes, with vaping rates highest among 16-24 year olds.

A 2023 survey by the charity Action on Smoking and Health (ASH) showed that some smokers believed vaping to be at least as harmful as smoking. The charity warns that health misconceptions about vaping could risk undermining the role it can play in reducing smoking. "I certainly don't think the UK should include vaping products in the smoke-free generation policy," says Hazel Cheeseman, chief executive of ASH. "It seems completely morally and logistically wrong not to provide that group in the population [smokers] with a legal alternative."

It seems morally wrong not to provide smokers with an alternative
Hazel Cheeseman

Division over vaping

When New Zealand proposed its smoke-free law, vaping wasn't considered. "The government did view vaping as a tool that could help people stop smoking," says Janet Hoek, professor of public health at the University of Otago. But "there was considerable opposition to that view," she adds, mainly owing to a lack of robust and independent evidence. "I think that there is still a lot of division over vaping."

New Zealand has also seen a rise in daily vaping, most rapidly in younger groups (ages 15-17 and 18-24)—and the increases in daily vaping in these age groups exceed the respective decreases in daily smoking.

This rise in youth vaping around the world has led some governments to seek further measures against its harmful effects. In 2024 the Australian government announced a raft of new laws. These prohibited the sale of all vapes, regardless of whether they contained nicotine, from any outlet except pharmacies.

They also banned single use disposable vapes, restricted vapes to three flavours, brought in heavy penalties for unauthorised manufacture or importation of

1988-89	1991	1992-96	1999	2000	2007	2012
• Liverpool City Council's trading standards officers become the first in the UK with the power to prosecute shopkeepers for illegally selling cigarettes to children. • Birmingham City Council announces proposals for a package of tobacco control measures that would make all indoor public places and public transport smoke-free by 2000.	• The government announces a series of new, larger health warnings on tobacco packaging. This is the first time health warnings have been legally required rather than covered by voluntary agreements.	• The Children and Young Persons (Protection from Tobacco) Act 1991 comes into force. • Guernsey's state parliament becomes the first in the British Isles to impose a ban on tobacco advertising.	• The UK government announces plans to introduce a ban on tobacco advertising from 10 December 1999.	• The government publishes its Tobacco Advertising and Promotion Bill, which aims to ban all forms of tobacco advertising throughout the UK.	• England goes smoke-free, making it illegal to smoke in virtually all enclosed public places and workplaces. Early results show that compliance rates reach 97% within two weeks. A law raising the legal age for buying tobacco from 16 to 18 comes into effect.	• The Health and Social Care Act receives royal assent, introducing legal duties for councils and NHS organisations to reduce health inequalities. From April 2013, local authorities will be responsible for delivering public health services, including smoking cessation services.

Source: Action on Smoking and Health. Key dates in tobacco regulation 1962-2020. Apr 2022

6 million
UK adults smoked cigarettes in 2023, the lowest proportion of current smokers (11.9%) since records began in 2011

8 years
since the UK government set its ambition to create a smoke-free generation

40%
of quit attempts in England in 2023-24 used e-cigarettes; quit attempts aided by e-cigarettes were more likely to be successful than those that were not

85%
of people who used e-cigarettes to quit smoking were still vaping afterwards

25%
of 11-15 year olds in England have tried vaping, with 1 in 10 doing it frequently

5.1 million
UK people aged 16 or over use e-cigarettes, with vaping rates highest among those aged 16-24

vapes, and placed restrictions on advertising.

"The idea that we would put a new generation at risk, creating new nicotine addicts, is just beyond us," said Mark Butler, Australia's federal health minister, in 2023. As a result, no vape or e-cigarette devices are approved for smoking cessation, and the national regulator has stated that evidence for their effectiveness is limited.

Shifting attitudes

In France, public attitudes have shifted strongly against smoking. This year France has banned smoking in all outdoor places that can be frequented by children—including beaches, parks, public gardens, bus stops, sports venues, and areas around schools. But this legislation doesn't include vaping.

Crucially, France has traditionally not used vaping as a public health tool for harm reduction or smoking cessation. "The great majority of people who use e-cigarettes smoke at the same time," says Emmanuelle Béguinot, director of the Comité National Contre le Tabagisme (Committee for Tobacco Control).

"So, the idea of a harm reduction of smoking cessation doesn't apply. They do not reduce the risks—they even increase them to some extent."

However, in 2016 the French High Council for Public Health, at the request of the Ministry of Health, endorsed the potential use of e-cigarettes for cessation purposes. "The council also warned about the non-negligible risk of individuals initiating nicotine use through these devices and potentially later switching to tobacco," says Sylvain Gautier, a public health doctor at the University of Versailles Saint-Quentin-en-Yvelines, Paris-Saclay University. Gautier adds that normalising vaping can contribute to the renormalisation of smoking.

Back in the UK, Manchester's first new city centre park in 100 years—the 6.5 acre Mayfield Park—is one location where both smoke-free and vape-free environments are already a reality, in advance of the planned legislation: smoking and vaping in the park have been prohibited since 2023. Greater Manchester's voluntary smoke-free and vape-free spaces have proved very popular: a 2022 consultation to implement smoke-free spaces found that around 72% of respondents wanted to see Greater Manchester make smoking history, and 57% said that vaping shouldn't be allowed in smoke-free spaces.

Vapes don't reduce risks: they increase them to some extent
Emmanuelle Béguinot

Individuals can initiate nicotine use through these devices
Sylvain Gautier

The industry has deliberate strategies to target children
Janet Hoek

"The decision was made for this park to be smoke-free and vape-free," says Jessica Holloway, strategic lead for population health at NHS Greater Manchester Integrated Care Board. "That decision to become vape-free was based on the public consultation and some of the rising concerns around young people and vaping." The consultation also found that 65% of respondents were worried that vaping could become as significant a societal issue as smoking.

Tobacco's influence

Public health experts have warned that the tobacco industry's recent entry into the UK's e-cigarette and vaping market could re-legitimise tobacco companies in the political and public spheres.

Researchers from the London School of Hygiene and Tropical Medicine have called for greater understanding of how the tobacco industry influences the framing of e-cigarettes, to help prevent health policy from being influenced. Béguinot adds that we have "to be really vigilant and not to always be behind the tobacco manufacturers when we regulate products."

In France, the Committee for Tobacco Control has pending litigation against the tobacco industry regarding tobacco products, as well as vaping products. Hoek says, "It's the evidence of how they position their products to children. These are deliberate strategies to target children that are entirely inconsistent with the transformation harm reduction narrative."

In New Zealand, a 2024 study from researchers at the University of Canterbury, Christchurch, found that 29% of schools had a vape store within five minutes' walking distance.

And this year new data from ASH in the UK showed increased awareness of nicotine pouches among people under 18 (small pouches similar in shape to teabags, containing nicotine, flavourings, sweeteners, and plant based fibres), leading the Chartered Trading Standards Institute to warn the public on how these products are targeted at children, using special flavours and packaging mimicking sweets.

The future of smoke-free generation policies around the world will continue to rely on public health evidence staying up to date on the risks and harms of new tobacco and vaping products. Cheeseman says, "We should absolutely include all tobacco products comprehensively in smoke-free policies, because we don't want any loopholes for the tobacco industry to step through."

Holloway concludes, "As public health professionals we are led by evidence—but you have to then go out and ask what actually matters to people."

Charles Ebikeme, London
charles.ebikeme@gmail.com

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CAREERS

“I always make a deliberate mistake”—knitting as an antidote to perfectionism

Knitting has brought consultant and mother of two Chrissy Jayarajah a sense of calm, **Erin Dean** hears

Watching the yarn as it moves around the knitting needles on its way to create a garment brings deep satisfaction and a sense of calm to consultant perinatal psychiatrist Chrissy Jayarajah.

One of her earliest memories was watching her grandmother knit and sew during annual holidays to Sri Lanka. Her mother is a keen crocheter and she taught Jayarajah the technique when she was 5.

“I used to carry a plastic bag to my primary school with all my knitting things and sit knitting in the playground, so I started quite early,” says Jayarajah, who is clinical lead for perinatal mental health services at Central and North West London NHS Foundation Trust. “I could only really do straight rows at that point.”

As she became a teenager and then went on to medical school, she drifted away from the hobby and her knitting needles lay untouched for years. But after graduating, she knitted a scarf for her now husband as a Christmas present, something he still wears 17 years later, then “dabbled on and off through training.”

As a resident doctor Jayarajah took up quilting, and started making beautiful patchwork quilts. But after having her two girls, now 3 and 5, she needed a hobby that didn’t involve being shut away with a sewing machine.

“I found myself gravitating towards things that I can just keep by the sofa. I can just pick up my needles, do five minutes and put them down again. And that’s what I love about knitting, and that’s how I’ve been able to do it with two small children and working full time.”

Now she has knitted at medical conferences, on planes and buses, watching TV in the evening, and while her daughters are at ballet lessons.

Getting to grips with the complexities of new patterns and stitches can be tricky, “but my mantra is to just focus on one stitch at a time.”

Knitting helps her manage the hectic pace of life and the emotional toll of her work with women with perinatal mental health problems. The mindfulness aspect of knitting is something that Jayarajah finds particularly interesting.

“The kind of work I do is really emotionally intense, and there’s a lot of talking, but also a lot of listening,” she says. “I’m sure a lot of doctors will empathise with this. As a psychiatrist, people are coming to you with their problems and emotions and feelings, and so at the end of the day, sometimes I just don’t want to talk. It’s a lot to carry and you need a moment of peace. And there’s something very mindful about doing repetitive movements or repetitive stitching.”

It requires just the right amount of concentration: enough to make it calming, while still allowing Jayarajah to participate in conversations around her. “It’s so meditative, you can just switch your brain off. It’s been a real godsend to me.”

One area that Jayarajah specialises in at work is obsessive compulsive disorder and maternal perfectionism. She has found a way to use knitting as an antidote and a metaphor for the pressures women put themselves under—by putting mistakes in her knitting.

“I always make a deliberate mistake and keep it in my knitting,” she says. “I might also make a mistake and just keep it in. And I always sew in a label, so I may sew that in upside down.

“There is a kind of obsession that we have about things being perfect and things being right. And it’s about getting used to being okay with making mistakes in life. And, actually, it’s the imperfections that make life special and beautiful.”

Erin Dean, London

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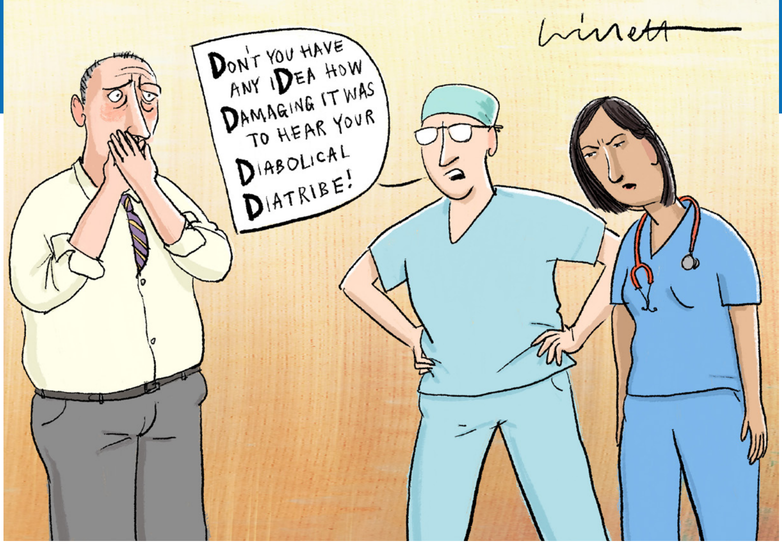
HOW TO GET INTO KNITTING

- Videos for beginners on YouTube and Instagram are a great starting point. Plus, there is normally advice available online if you get stuck
- Start with something simple to build your confidence. You can create a lot with just a few different stitches
- Knitting is a great portable option, so carry it with you and fit it in whenever you have a few spare moments
- Don’t worry about making mistakes and don’t feel you have to unpick all errors—they are part of the learning process and part of life. Your garment can still be beautiful and treasured even if it’s not perfect

CAREERS CLINIC

My colleague made a racist comment—what should I do?

Doctors have a duty to act but there are many ways they can do so, **Elisabeth Mahase** hears



Tackle it

Kathryn Leask, medicolegal adviser at the Medical Defence Union

"Any form of discriminatory behaviour will have a negative impact on the working environment and will affect professional relationships, which could have implications for patient care.

"It's important not to be seen to be condoning this type of behaviour and to do that, it's important to tackle it, if possible, at the time of the incident. Let the person who made the comments know how you felt. Repeat their words to them and give them a chance to reflect on what they said and explain whether that's what they intended it to mean.

"If they don't appreciate why it was racist, and you feel safe to do so, help them understand. You could direct them to your organisation's equality and diversity policy and training. Focus on their behaviour and speak to them calmly and professionally and try not to make your comments towards them personal. Doctors who witness discriminatory behaviour have an obligation to act on it.

"If you're concerned about the way in which the person who made the comment responds to you raising your concerns directly with them, or if you don't feel able to do so, consider speaking to their line manager, another senior colleague, or an HR manager, in line with local policy. Document the incident noting the time and date, location, what words were used, and who else was present.

"If someone else was present and they were affected by the comments or the comments were directed towards them, offer to support them to speak to someone senior or to report it, if that's what they want to do. Let them know that the behaviour you witnessed is unacceptable."

Seek support from seniors

Mydhili Chellappah, GP and senior clinical lecturer in medical education at King's College London

"The first thing to acknowledge is that there should be zero tolerance for discrimination, racism, or abuse in the NHS. It is important not to feel that you are 'over-reacting.' We share a collective responsibility as NHS staff to challenge racism, especially in a divisive global political climate.

"While overt racism is easier to recognise, microaggressions can be harder to tackle or report. Comments such as, 'Where are you really from?' may seem harmless, but intent does not negate impact. These interactions often leave recipients confused or questioning their perceptions, and their cumulative effect is known to be damaging. Medical students and doctors may also indirectly witness this behaviour from colleagues and feel an ethical or professional duty to respond but may be unsure how.

"When preparing medical students for these situations through simulation training, I advise using one of the 5Ds of bystander intervention: direct, distract, delegate, document, and delay. A direct response involves calmly and constructively challenging the comments when safe to do so. One might distract by changing the topic or redirecting attention, while delaying allows acknowledgment of what happened but leaves the response for a more suitable moment. I always recommend seeking support from a senior or trusted colleague, and documenting the incident to aid reflection or follow-up.

"There is no single 'right' way to handle these situations, but acknowledgment and conscious action can help create a more inclusive NHS culture."

Check in on the targeted person

Shehla Imtiaz-Umer, GP partner and British Islamic Medical Association national director (advocacy)

"Hearing a racist comment can evoke strong emotions particularly for those who have experienced discrimination or understand its impact. Responding constructively takes intentional effort and awareness, especially when someone tells you they were harmed, or you witness discriminatory behaviour.

"One practical framework is the active bystander intervention, a structured approach that promotes de-escalation and safety. It's a behavioural tool which interrogates the cultural and societal norms of behaviour to shift the status quo to one of support, care, anti-violence, and social justice.

"If you hear a racist remark, under GMC guidance you have a professional duty to act. How you respond depends on context and power dynamics.

"Allyship and active bystander behaviour are connected. Both require reflection and the willingness to act, not just good intentions. Effective allyship involves moving beyond performative gestures towards consistent, values driven action.

"If you hear a comment which causes harm, choose phrases that fit the situation and your relationship to the speaker—for example, 'What makes you say that?' 'What you just said is harmful,' or 'What did you mean by that?'

"Afterwards, check in with the person who was targeted and agree how they wish to proceed. Where the behaviour is recognised as persistent or harmful, escalate formally through organisational mechanisms such as through your clinical supervisor; education supervisor; equality, diversity, and inclusion lead; or freedom to speak up guardian."

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