this week

Many junior doctors are forced to sleep where they can on night shifts, or pay an average of £25 a night for a room

On-call trainees face £65 fee to rest

EXCLUSIVE Junior doctors are calling for their contracts to stipulate they will not be charged to stay overnight in hospital accommodation, after an investigation found one in five acute trusts in England charge—some as much as £65 a night.

The trainees' section of the British Association of Urological Surgeons (BAUS) sent freedom of information requests to 213 trusts for accommodation charges for doctors working a 24 hour non-resident on-call shift as part of its #DontPayToStay campaign. It received responses from 182 (93%), of which 145 had rooms available for non-resident on-calls, and 30 trusts (20%) charged to use them.

Charges ranged from £65 a night at St George's University Hospitals in London to £9.14 at Warrington and Halton Hospitals. The median charge was £25 a night.

Three trusts said the charges were reimbursed, and one said it waived the charge if trainees were using the room because they were too tired to drive home.

Although non-resident on-call trainees can stay at home until they are called into the hospital, this is not feasible in some cases, explained Katie Chan, a urology trainee and the founder of the #DontPayToStay campaign. "Urology is predominantly a non-resident on-call pattern," she said. "The time sensitive nature of our on-call work means that it is usually not possible to live within a safe distance. So, staying on site for on-calls is something we expect. This issue can affect any doctor working a non-resident on-call rota, not just urology."

She added that a trainee working a non-resident on-call shift once every eight days and paying £25 each time would spend £1140 in a year. BAUS is calling for contract changes to make time critical specialties exempt from room charges.

Sheona MacLeod of Health Education England said, "It is essential doctors in training have access to somewhere to sleep. This is something we highlighted in our NHS Staff and Learners' Mental Wellbeing Commission. It is also part of the BMA's fatigue and facilities charter, which we encourage trusts to adopt."

A St George's spokeswoman said the trust organised rotas to minimise the need for junior doctors who live far away to stay overnight, but when that was not possible it offered a reduced rate with a local accommodation provider.

Abi Rimmer, *The BMJ*

Cite this as: *BMJ* 2019;365:l1836

LATEST ONLINE

- A&E consultant whose wife skipped triage and was treated at home is suspended for a month
- Congo's fight against Ebola stalls after epidemiologist is shot dead
- Cancer drug resistance needs urgent attention, says research chief

SEVEN DAYS IN

Doctors who make one-off clinical mistakes are unlikely to face full GMC inquiry

The GMC is to reduce the number of full investigations into single, one-off mistakes by doctors, after its two year pilot of an inquiry process for single clinical incidents.

Under the pilot a complaint or referral prompted a rapid gathering of information from sources such as medical records, responsible officers, and the doctors themselves to assess any ongoing risk to patients. Only then did the GMC decide if a full investigation was required.

Of the 309 cases considered during the pilot, 202 were closed after initial inquiries without the need for a full investigation, the GMC said.

Charlie Massey (left), GMC chief executive, said that although the new process would not be suitable for all complaints, it would allow the regulator to deal with concerns more quickly, reduce the impact of investigations on doctors, and better protect patients.

However, he said that the GMC was still required by law to investigate any allegation that a doctor's fitness to practise was impaired. "We continue to ask the government for legislation to give us more flexibility, and which would allow us to further improve the ways we can resolve fitness to practise concerns," he said.

Abi Rimmer, *The BMJ* **Cite this as: *BMJ* 2019;365:l1829**

Career development

Survey of non-traditional working practices

The GMC's first comprehensive survey of specialty, associate specialist, and locally employed doctors opened on 1 May (see www.gmc-uk.org) for feedback on working practices, workplace support, and opportunities for career development. This is the regulator's first dedicated survey of the 45 000 UK doctors working outside traditional training routes, which will include questions on bullying, undermining, and burnout.

General practice

Record numbers enter GP specialty training

Recruitment to GP specialty training was the highest ever for this time of year: 2598 trainees were accepted on courses, up from 2533 in the same period last year, showed figures from Health Education England. The GP specialty training fill rate for round 1A is up 2% on last year and, if the trend continues, HEE is on course to meet its 3250 target.

Drive to curb OTC prescribing falls short

A major policy push by NHS England to save £100m a year by curbing GPs' prescribing of over-the-counter drugs delivered only £25.9m of savings in 2018, the government disclosed, as the year's total spending fell from £475.3m to £449.4m. Andrew Green, clinical and prescribing policy lead for the BMA's General Practitioners Committee, was not surprised, saying that most GPs were already prescribing sensibly before the guidance was issued.

Athletics

End unethical rules on classifying women—WMA

Doctors should have no part in implementing new eligibility regulations requiring female athletes with specific differences in sex development to medically cut their natural blood testosterone, said the World Medical Association. The regulations were introduced last year by the International Association of Athletics Federations after a South African runner, Caster Semenya (right), had to undergo gender verification testing to confirm her eligibility for women's events. The Court of Arbitration for Sport is due to issue a decision on the IAAF rules next week.

Public health

Opioids to carry addiction warning in UK

All opioid medicines will carry a message warning they can cause addiction, including those for sale over the counter. England's health secretary, Matt Hancock, said, "Things are not as bad here as in America, but we must act to protect people from the darker side to painkillers." From 2008 to 2018 the number of opioids dispensed in the community increased by more than 60% from 14 million to 23 million, while codeine related deaths in England and Wales more than doubled.

Cosmetic clinics to assess patients' suitability

The Joint Council for Cosmetic Practitioners is to train its members to spot mental ill health in clients and refer them to NHS services. Stephen Powis, NHS national medical director, said the checks were a "major step" in improving the duty of care companies show to clients. But he warned not all clinics were council members.

Lung health

NRT combinations show better success rates

Just over 17% of people who used a nicotine patch and another type of nicotine replacement therapy (NRT) such as gum (left) or lozenges to stop smoking were successful, compared with about 14% who used only one type of NRT, a Cochrane review found. Higher dose nicotine gum (containing 4 mg nicotine) also worked better than lower doses. Although higher dose nicotine patches (25 mg or 21 mg nicotine) probably increase quit rates, said the reviewers, more evidence was needed.

Lung cancer is missed in "never" smokers

Some 6000 people in the UK who have never smoked die of lung cancer a year—about a sixth of all such deaths, doctors wrote in the *Journal of the Royal Society of Medicine*. Secondhand smoke, occupational carcinogens, pollution, x rays, and radon exposure were largely to blame. But recognising cases could be difficult, they warned, especially for GPs who must balance over-investigation with early diagnosis.

MEDICINE

Child health

WHO advises physical activity from age 1

Young children should engage in at least 180 minutes of physical activity a day from age 1 to improve their health, the World Health Organization recommended. New guidelines for children under 5 also recommend no sedentary screen time for children under 2 and a limit of one hour a day for children aged 2-4. It recommends 14-17 hours of good quality sleep a day at age 0-3 months, 12-16 hours at 4-11 months, 11-14 hours at age 1-2, and 10-13 hours at age 3-4.

Scotland

CMO promotes more personalised care

Health professionals throughout Scotland were encouraged to deliver a more personalised approach to care, as part of the chief medical officer's goal of "realistic medicine." Catherine Calderwood introduced the concept three years ago, arguing the NHS needed to do more to put patients at the centre of decision making to reduce harm, waste, and unwarranted variation. Many clinical teams have now adopted a "what matters to you" conversation in their practice, she said, and have personalised the treatment and care they provide.

Cervical screening

Uptake fell after NHS reorganisation in 2013

The reorganisation of England's primary care trusts into clinical commissioning groups in 2013 led to a fall in cervical screening uptake, a study found. Areas that experienced more disruption from the Health and Social Care Act 2012—for example, where CCGs worked with several local councils—saw the biggest decline, found a data analysis by the University of Manchester and the London School of Hygiene and Tropical Medicine.

Children should be kept active from the age of 1, says WHO

Depression

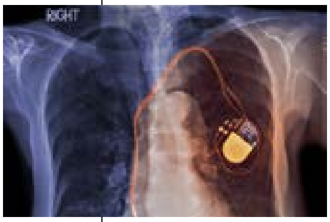
Guided self led or group CBT is effective

A meta-analysis of 155 randomised clinical trials of cognitive behavioural therapy (CBT), reported in *JAMA Psychiatry*, found no significant difference between the effectiveness of individual, group, telephone, or guided self help CBT in reducing the severity of depression. All were considerably more effective than being on a waiting list or unguided self help CBT with no therapist. Patients who had individual and group CBT were the least likely to drop out.

Heart devices

More day case procedures could save NHS £5.6m

The NHS could save £5.58m a year if 75% of procedures to implant complex cardiac devices, including defibrillators, pacemakers (right), and resynchronisation devices, were performed as day cases, a study in *Open Heart* estimated. A freedom of information request found that 80% of UK centres already implanted some complex devices as day case procedures, but only a third performed more than 75% this way. Each day case is up to £2169 cheaper than an overnight stay.



Cite this as: *BMJ* 2019;365:l1947

ASSISTED DEATH

In the first 10 months of 2018, 2614 people died with medical assistance in Canada, 1.12% of deaths during that period

[Health Canada]

SIXTY SECONDS ON . . .

MORAL INJURY

THAT SOUNDS . . . PAINFUL?
It could be. The term was originally used to describe soldiers' responses to their actions in war. It's now used in the US to describe what we would call burnout in the UK.

IT DOES SOUND LIKE AN AMERICANISM
The term was first used in a medical context by US based psychiatrist Wendy Dean. Andrew Goddard (below), Royal College of Physicians' president, has suggested it could also be used in the UK instead of "burnout."

WHAT EXACTLY IS BURNOUT ANYWAY?
The RCP defines it as "a syndrome of emotional exhaustion, involving the development of negative self concepts, negative job attitudes, and a loss of concern and feeling for patients."

IS IT COMMON?
It would seem so. A recent BMA survey, found that 80% of doctors were at a high or very high risk of burnout, with trainees most at risk.

WHY DROP THE WORD BURNOUT?
At the RCP conference, Goddard said burnout implies a doctor has failed. "That despair, hopelessness, and loss of joy—is not a failure of the individual," he said. "Moral injury" puts the onus on the system, he added.

THIS ALL SOUNDS FAMILIAR . . .
You may be thinking of doctors' rejection of resilience training. As Clare Gerada, medical director of the NHS Practitioner Health Programme, put it in 2015, "You can no more teach resilience than you can integrity or courage—so let's stop blaming doctors for failings of their working environment."

CAN WE DO MORE THAN BAN WORDS?
Good question. Goddard focused on changing culture. He said, "Until we sort out the workplace we will all continue to be 'injured' by it." He added, "How we treat each other and work together impacts directly on our patients."

AND TAKE MORE BREAKS?
Yes! *The BMJ* has launched a campaign calling for doctors to be able to take the breaks they need—not only for their wellbeing but for patient safety. You can take part on Twitter using #giveusabreak.

Abi Rimmer, *The BMJ* Cite this as: BMJ 2019;365:l1933

Health secretary says inequality in NHS is draining the workforce

The NHS in England must deal with its problems with gender and racial inequality if it is to stem the flow of staff leaving the service, the health secretary, Matt Hancock, has said.

"Too often we've lost talented people because we haven't done enough to convince them to stay," he said. "The most troubling statistic I've seen is this: one in 11 staff leave the NHS entirely every single year. It's something we urgently need to address, and I believe a large number of those people leave because we haven't done enough to make the NHS a great place to work."

Working culture

Hancock made the comments in a speech at the Royal College of Physicians' annual conference in Manchester on 25 April. He said that, as well as tackling resourcing and contractual issues, a key part of increasing retention rates would involve improving working culture, which would in turn drive up organisational performance.

"In every trust where there is a problem with unequal treatment there is a problem with performance, across the board," he said.

The gender gap was a "barometer" of the health of the NHS, he said, pointing to figures showing that men in the NHS earn on average 23% more than their female counterparts.

"It's clear that things must change, and I'm determined to change them," he said.

Hancock said a culture of transparency in pay, promotion, and reward was essential. "We need to create a working culture that puts flexible working at the heart, that encourages women to stay in the NHS family and take the opportunities to progress; that helps women to move up the career ladder, even when they have children and caring responsibilities."

We haven't done enough to convince people to stay

He added that inequality went beyond gender, to affect people from minority ethnic backgrounds and those with disabilities. "Only by embracing equality of opportunity are we going to be able to address the staff shortages, get the people we need to create the sustainable NHS we want, and make sure we can harness everyone's potential," he said.

Tom Moberly, *The BMJ*

Cite this as: *BMJ* 2019;365:l1937

"Get IT basics right," RCGP tells Hancock

The government should focus on creating a "robust and joined up" IT system across general practice and the NHS before embarking on a full scale technological revolution, the Royal College of General Practitioners has said.

The RCGP's new manifesto stresses the importance of "getting the basics right first." The college said it recognised the potential of genomics, artificial intelligence, digital medicine, and robotics to "potentially revolutionise patient care and improve safety."

But it argues that they will only be possible if all GP practices have robust, secure IT systems, and all parts of the NHS have access to networks which "seamlessly link up the patient journey."

The manifesto highlights that up to 80% of practices could soon be using outdated IT systems, and that some practices remain reliant on outdated fax machines that the health secretary, Matt Hancock, has pledged to dispense with.

At the manifesto's launch Hancock also promised to fulfil one of its recommendations by upgrading every hospital, GP practice, and community service to full fibre connectivity as soon as possible. "We need healthcare professionals to feel confident they can access fast, reliable broadband to give patients the best possible care," he said.

The manifesto also calls on the government to ensure that all practices

The MANIFESTO highlights that up to 80% of practices could soon be using outdated IT systems

BMA calls for chancellor to reform pension rules to keep doctors in NHS

The BMA has warned the chancellor of the exchequer, Philip Hammond, that doctors will reduce their NHS working hours unless reforms are made to the NHS pension scheme.

Changes to pension allowance rules that limit what can be saved into a pension each year before tax charges apply have landed some consultants with huge unexpected tax bills and have already prompted 3500 doctors to retire early since 2016, while many others are avoiding taking on additional work.

The BMJ reported on 18 April that some NHS trusts were topping up consultants' salaries with cash rather than putting money into the NHS pension scheme, to avoid triggering tax charges and to help retain staff.

Serious consequences

In the latest of several letters to Hammond, the BMA says the loss of experienced clinicians will have serious consequences for patient care and the service's sustainability. The association, which has been calling for a rethink of pension rules since last August, says the

Tech opportunities have to be embraced safely and sustainably

Helen Stokes-Lampard, RCGP

have modern, digitally enabled premises with fully interoperable systems, and are given access to a single shared electronic patient record that documents patient interactions across the NHS.

Helen Stokes-Lampard, chair of the RCGP, said, "GPs want the latest tech, but we need the basics to work first. That means everything from making sure that our computers don't crash while issuing a prescription, to making sure our systems talk to those in hospitals.

"We want the NHS to be a world leader in technology, and we are ready for a new wave of opportunities which have the potential to revolutionise patient care, but work is needed before that can happen. We need to ensure that these opportunities are embraced safely and sustainably with GPs at the centre."

Fit for purpose

Farah Jameel, IT lead for the BMA's GP Committee executive team, said, "Ensuring IT systems and infrastructure are fit for purpose is fundamental for improving patient care and increasing productivity. As the RCGP points out, getting the basics right must be the priority ahead of any 'digital revolution.'"

He added that the digital commitments the GPC negotiated as part of this year's GP contract deal were designed to create a "fully resourced IT infrastructure."

Gareth Iacobucci, *The BMJ*

Cite this as: *BMJ* 2019;365:l1981

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government knows of the problem, but it has not proposed any solutions.

Rob Harwood, chair of the BMA's Consultants Committee, said, "It cannot be right that doctors working extra hours to reduce waiting lists or cover rota gaps are then hit with tax bills greater than the value of the extra hours worked. Unless action is taken, our only option is to reduce the time we work for the NHS—exactly what the BMA has been trying to avoid."

At the Royal College of Physicians' conference health secretary Matt Hancock urged doctors not to take early retirement because of the pension issue, adding that he was working to resolve the issue.

Zosia Kmietowicz, *The BMJ*

Cite this as: *BMJ* 2019;365:l1885

Widen inquiry into sexism at BMA, say women behind the allegations

A group of female doctors who drew public attention to alleged sexism and inappropriate behaviour from BMA members have challenged the terms of reference of an inquiry set up to investigate their concerns.

In March *GP Online* reported allegations of sexist comments being made to BMA members and GPs Zoe Norris and Katie Bramall-Stainer at a conference of UK local medical committees. These allegations prompted others, including Stephanie deGiorgio and Amy Small, to speak out about their experiences.

The BMA responded by committing to a "fully independent investigation," and an investigator is due to be appointed this month. Now the four women have asked for the inquiry's scope to be broadened.

In a website update the BMA said the inquiry would examine all the allegations and assess its response. "When considering feedback on individual incidents, the investigation will consider whether the complaints and disciplinary procedure in place at the time were used," the statement said. Where the inquiry identified incidents that "appear to fall short of the standards of behaviour expected of members," the doctors concerned would be referred for "appropriate action," the statement added.

In response, the women wrote a joint letter to the BMA's chair of council, Chaand Nagpaul, requesting changes to the terms of reference. In the letter, shared with *The BMJ*, they said the inquiry was too limited and asked that its focus on sexism and sexual harassment be broadened to include "poor behaviour."

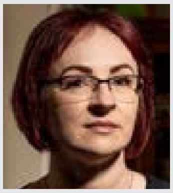
"Our experience is that it is impossible to separate other types of bullying and inappropriate behaviour towards women from more explicit sexual harassment," they wrote. They also suggested the inquiry should review the BMA's internal communication systems and how senior appointments are made.

Finally, the group asked for reassurance that doctors would not suffer retribution.

The BMA said it would respond directly to the women.

Melanie Newman, London

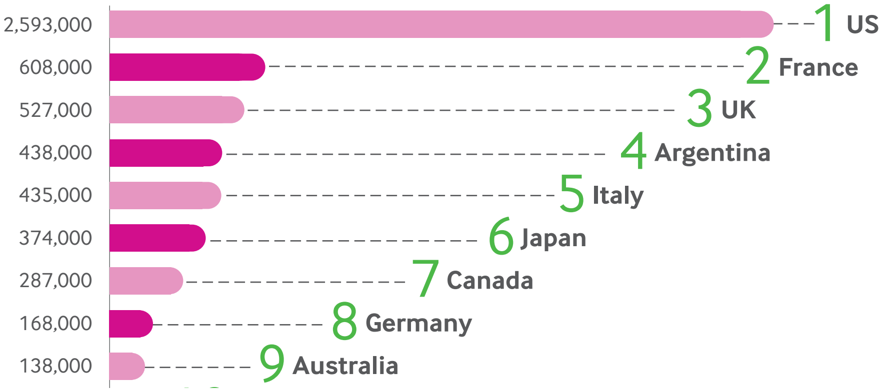
Cite this as: *BMJ* 2019;365:l1984



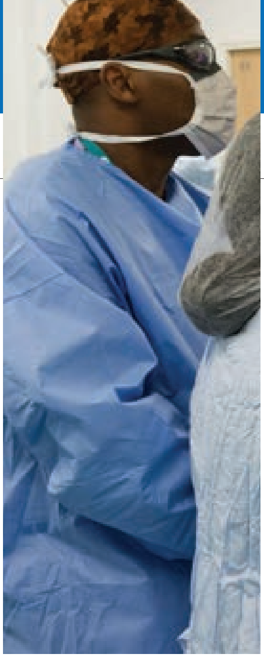
It is impossible to separate other types of bullying towards women from more explicit sexual harassment

Zoe Norris (top) and Amy Small

"Incredulity" blamed for 169 million children missing measles vaccine



The US topped the list of high income countries for the number of children who didn't get the first dose of measles vaccine between 2010 and 2017, a report from Unicef showed. The global figure was 169 million children. A key factor was "incredulity and hostility" towards doctors and government who promote the importance of vaccination—exacerbated by a suspicion of experts propagated by populist political parties.



QI falters after trial fails to reduce abdominal surgery mortality

A quality improvement programme aimed at reducing mortality after emergency abdominal surgery had no effect, a large randomised trial in the NHS has shown. Just as many patients died in the hospitals implementing the programme as in those providing usual care, the EPOCH (enhanced perioperative care for high risk patients) trial showed.

The result casts a cloud over efforts to improve outcomes in healthcare by using the formal and systematic methods known as QI. Rupert Pearse, professor and consultant in intensive care at Queen Mary University of London and senior author, said, “QI programmes are not a quick and easy solution to improving care. We are now taking a much more realistic approach to this work.”

List of activities

The trial, which involved 93 hospitals, recorded all deaths after emergency abdominal surgery from March 2014 to October 2015 in patients aged over 40.

The hospitals were divided into 15 “clusters,” each of which was given a list of activities that were designed to improve care, such as holding preparatory meetings, working out their baseline, and implementing the best perioperative practices. The order in which the clusters implemented the programme was randomised so that some began sooner than others, in a stepped wedge trial design.

This meant that the duration of the QI period varied from 80 weeks for the first cluster to five weeks for the last. Patients who presented during the first five weeks after the QI programme began were excluded from the analysis.

The results showed no change in mortality 90 days after surgery. In the usual care group, 8482 patients were treated, of whom 1393 died (16%). In the QI group, the figures were 7374 treated and 1210 who died (16%). Mortality at 180 days after surgery was 20% in both the usual care and the QI groups.

Reporting in the *Lancet*, the team said that the failure was likely to be due to the varying compliance of clusters to the QI programme, differing prioritisation of the pathway components, and the time needed for effective change.

QI programmes are not a quick and easy solution to improving care

MORTALITY at 180 days after surgery was 20% in both the usual care and the QI groups

Peanut immunotherapy increases allergic reactions, finds study

Peanut allergy is common, affecting 2% of children and 1% of adults in high income countries, and is a leading cause of food associated allergic reactions, anaphylaxis, and deaths

Interest is growing in peanut oral immunotherapy, after clinical trials showed that it induces desensitisation, but there had been no comprehensive review of the available evidence

The review combined results from 12 trials of peanut oral immunotherapy involving 1041 patients with peanut allergy, with a median age of 8.7 years

Oral immunotherapy for peanut allergy, in which patients are exposed to increasing doses of the allergen, heightens the risk of allergic and anaphylactic reactions despite inducing desensitisation, a review has found.

“Our study synthesises all randomised clinical trials comparing peanut oral immunotherapy with no immunotherapy,” said lead author Derek Chu, from McMaster University, Canada. “It shows that current peanut oral immunotherapy regimens can achieve the goal of desensitisation, but this outcome does not translate into fewer allergic reactions and less anaphylaxis. Instead, the opposite occurs.”

Results, reported in the *Lancet*, showed that the risk of anaphylaxis in patients given oral immunotherapy was just over three times the risk in those given no oral immunotherapy, increasing from 7.1% without immunotherapy to 22.2% with immunotherapy.

The rate of anaphylaxis in the oral immunotherapy group was more than double that in the no immunotherapy group.

Oral immunotherapy was associated with a higher risk of serious adverse events than in the no immunotherapy group, and non-anaphylactic reactions such as vomiting, angioedema, and upper respiratory tract reactions were also increased.

In terms of desensitisation, patients given oral immunotherapy were more than 12 times as likely to pass a supervised challenge of exposure to peanut than those not given immunotherapy.

“Safer peanut allergy treatment approaches and rigorous randomised controlled trials that evaluate patient important outcomes are needed,” concluded the authors, who received no funding for the review.

In an accompanying comment, Graham Roberts and Elizabeth Angier, from the University of Southampton, said, “Although oral immunotherapy undoubtedly reduces the likelihood of reacting to peanuts in a controlled clinic setting, its overall side effect profile means that patients seem to have more allergic reactions while on therapy.”

Susan Mayor, London

Cite this as: *BMJ* 2019;365:l1912

The results indicate that the scope for improvement was, in many cases, small. The programme indicated that a consultant should take the decision to operate, which was the case in 90% of patients under usual care. After QI, this figure did not change.

The team suggested that earlier successes in small QI interventions may have encouraged the belief that they were easy to implement. "Future QI programmes should implement fewer, more discrete changes and ensure leadership teams have enough time to achieve sustained improvements" they said.

Future QI programmes should implement fewer, more discrete changes

Nigel Hawkes, London

Cite this as: *BMJ* 2019;365:l1924

Clinical trials in Europe: less than a fifth report within 12 months

European universities are failing to meet EU rules on reporting clinical trial results within 12 months of registering the trial, a survey shows. The results come just two weeks after a similar survey showed that, despite initial problems, UK universities were now ahead of others in the EU in filing results.

EU regulation

The survey looked at the 30 European universities (including in the UK) that have sponsored the largest numbers of trials governed by the EU Clinical Trials Regulation register (EudraCT). The regulation was set up in 2014 to ensure standard reporting procedures throughout Europe.

The researchers monitored trials lodged by each country's trials regulator as completed 12 months or more ago and noted where the results had not yet been uploaded by the university. Their results show that 940 trials should have reported their results to the register by now but that only 162 have done so (17%). UK universities performed the best in Europe, with a reporting rate of 69%. Excluding UK universities brought the overall rate down to 7%.

The survey showed that the top medical universities in France, Italy, Norway, and Sweden failed to post any clinical trial results. Danish universities reported on just 9.9% in 12 months. Dutch universities 8.7%, Austrian 7.9%, Belgian 3.9%, and German 2.5%,

Regulators have limited sanctions if universities fail to report. A spokesperson for the Danish Medicines Agency said it could only send a reminder to a university that had not filed its results.

Lynn Eaton, London

Cite this as: *BMJ* 2019;365:l1963

Doctors fear their mental ill health "is a sign of weakness"

Employers in the medical profession must take steps to reduce the stigma of mental illness among their workforce so that doctors feel able to get help, researchers from Swansea University have said.

The recommendation came as a BMA survey of UK doctors found that most doctors (80%) were at a high or very high risk of burnout, with junior doctors most at risk.

The researchers spoke to 10 trainee doctors from a range of specialties in England and Wales about whether being a doctor had affected how they accessed support for mental health problems. The study, to be published in an upcoming edition of the *International Review of Psychiatry*, found that the view that "mental illness is equal to weakness" was still common among doctors and that some continued to work even when their ability to do so was impaired.

Support junior colleagues

The researchers suggested one way to tackle stigma was for NHS employers to include information about the prevalence of illness among doctors at induction sessions. Board members and senior managers should help to create a culture that encouraged doctors to seek help, the study said, while doctors who were managers needed to learn how to support junior colleagues.

The survey, which was open to all UK doctors, received more than 4300 responses, including around 1400 from medical students. It found that more than a quarter (27%) of respondents reported having a mental health condition diagnosed at some point and that 40% currently had a psychological or emotional condition.

WE NEED TO ADDRESS THE STIGMA THAT INHIBITS DOCTORS SEEKING HELP

Dinesh Bhugra (above), BMA president and emeritus professor of mental health and cultural diversity at King's College London, called for a cultural shift in the way mental health was viewed. "As well as focusing on addressing the immediate pressures, such as long working hours, unmanageable workloads, and rota gaps, we need to see a wider cultural shift that addresses this stigma that inhibits doctors seeking help and ensures that support is publicised and readily available," he said.

"A system that fails to support and protect the health of its own workforce will only flounder, and this is as clear a call to action as ever there was."

Abi Rimmer, *The BMJ* Cite this as: *BMJ* 2019;365:l1861

THE BIG PICTURE

Bee campaign stings Bayer

Around 500 environment campaigners gathered outside the annual meeting of chemical giant Bayer, in Bonn, Germany, last week, to protest at its takeover last year of the US biotechnology and seed company Monsanto.

Among the protesters were beekeepers, who dropped thousands of dead bees on the pavement and used their smokers to draw attention to their claim that Bayer's pesticides are destroying hives and jeopardising the world's food chain.

The activists' placards mocked Bayer's corporate motto "science for a better life" and demanded that it "stops glyphosate," the herbicide made by Monsanto, which legal action in US courts claims is carcinogenic.

A *BMJ* study in March found an association between prenatal exposure to pesticides, including glyphosate, and risk of autism.

EDITORIAL, page 136

Alison Shepherd, London

Cite this as: *BMJ* 2019;365:l1983

MARTIN MEISSNER/AP/SHUTTERSTOCK

AFP/GETTY IMAGES

EDITORIAL

Probable carcinogenicity of glyphosate

Independent investigation must continue

In 2015, the World Health Organization's International Agency for Research on Cancer (IARC) identified glyphosate, the world's most commonly used herbicide, as a probable human carcinogen.[1 2]

IARC's assessment prompted a major controversy between health evaluation agencies, led to unprecedented lobbying by Monsanto (the primary manufacturer of glyphosate and genetically modified products resistant to glyphosate), and resulted in high profile court cases in the US.[3]

Glyphosate typifies the problems associated with research, evaluation, and regulation of pesticides. These include serious difficulties in the conduct of human research; important gaps in post-market research into exposure and risk assessment, particularly in low and middle income countries; lack of information on environmental effects; extensive industry involvement in evaluation and regulatory processes; and the major legal implications of these evaluations.

IARC's 2A grouping of glyphosate as a probable human carcinogen is the second strongest category of evidence in a four tier scale. The strength of the evidence against agents in this group varies; some agents lie close to a group 1 designation (human carcinogen), but the evidence is weaker for others, including glyphosate. However, substantial published evidence from human, animal, and mechanistic studies at the time of the IARC evaluation indicated that adverse effects from exposure to glyphosate could be classified as probable.

Glyphosate typifies the problems associated with research, evaluation, and regulation of pesticides

Manolis Kogevinas, researcher, Barcelona Institute for Global Health (ISGlobal), Barcelona
manolis.kogevinas@isglobal.org

Changing circumstances

One aspect of the controversy is that formulations of glyphosate and exposure patterns have changed over time, and the many positive case-control studies cited by the IARC now reflect older exposure circumstances.

The IARC working group on pesticides identified non-Hodgkin's lymphoma as a leading risk, and in 2018 a man from California became the first person to be compensated for non-Hodgkin's lymphoma linked to glyphosate exposure.[3]

More recent evidence showed no association between non-Hodgkin's lymphoma and glyphosate but instead suggested an increased risk of a rarer leukaemia subtype.[4 5] And a new analysis pooling the three largest cohort studies on pesticides showed an association between glyphosate and one non-Hodgkin's subtype.[6] These new analyses do not modify the IARC's evaluation, but they do have implications for quantifying the risk from glyphosate.

The IARC's evaluation of glyphosate in 2015 was followed by other evaluations, many of which reached different conclusions, including one by the European Food and Safety Authority (EFSA). These evaluations followed different protocols and some considered different evidence, including unpublished and non-peer reviewed data from industry funded studies.

Undisclosed industry involvement has emerged in evaluations by EFSA, the UN's Joint Meeting on Pesticide Residues, and the US Environmental Protection Agency.[7] Lobbying by industry was widespread and well documented.[8] Although it is difficult to quantify, lobbying probably influenced the outcome of some of these evaluations and media coverage and led US government officials to question supporting the IARC/WHO.

What next? "More research is needed" is still (unfortunately) an inescapable recommendation. Although existing evidence could justify the classification of glyphosate as a probable human carcinogen, substantial gaps remain, including information about the relative effects of different product formulations, the timing of exposure, and additional data on mechanism of action in humans.

Non-cancer risks

Although the focus so far has been on glyphosate and cancer, potential non-cancer health risks should also be investigated further.[9] The few existing epidemiological studies with robust assessment of exposure were not conducted in low or middle income countries such as India or Brazil, where use is highest.

This lack of evidence and difficulty in replication will inevitably lead to more controversies when other pesticides are evaluated. Pesticides have hundreds of active ingredients, and less than a dozen have been formally evaluated by the IARC as group 1 or 2A carcinogens. Some of these, such as DDT (dichlorodiphenyltrichloroethane) and lindane, are already banned in most countries. But responsible companies marketing products that may pose a risk to human health and the environment should be collaborating internationally to gather evidence of possible harm, rather than attacking authoritative science.

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EDITORIAL

A lesson for health professionals

We must learn from the schoolchildren's action and campaign relentlessly for carbon net zero by 2030

In March, hundreds of thousands of schoolchildren in 2000 cities from 123 countries left school to call for action on climate change. They inspired millions more, including the non-violent direct activists participating in the Extinction Rebellion protests, and set an example for those of us who are older (and possibly less wise). Now the Friday strikes happen in many countries every week (#FridaysForFuture).

It is young people who will be most affected by the floods, desertification, fires, hunger, disease, mass migration, and wars caused by climate change. These disastrous consequences have already begun and will grow rapidly worse without urgent action, which must include the abandonment of fossil fuels.

The movement began with Greta Thunberg, a 16 year old Swedish student who in August 2018 started to miss school every Friday and protest about inaction on climate change outside the Swedish parliament.

For weeks she protested alone, but slowly and exponentially others followed her example. Since then, Thunberg has spoken at the World Economic Forum and attended the United Nations meeting on climate change. She has been nominated for a Nobel Peace Prize and has 400 000 followers on Twitter. During her Easter holidays she travelled to London, where she spoke to politicians from all parties and joined the Extinction Rebellion protests.

Thunberg has Asperger's syndrome, which she calls "a gift." She speaks bluntly: "Why should I be studying for a future that soon will be no more, when no one is doing anything to save that future? . . . We must change almost everything in our current societies . . . Adults keep saying: 'We owe it to the young people to give them hope.' But I don't want your hope. I don't want you to be hopeful. I want you to panic . . . If you have a child that is standing in the middle of the road, and cars are coming at full speed, you don't look away because it is too hard to see, you run out and get that child away from there."[1]

REX/SHUTTERSTOCK

It is young people who will be most affected by the floods, desertification, fires, hunger, disease, mass migration, and wars caused by climate change

The schoolchildren's action follows last year's warning by the Intergovernmental Panel on Climate Change that raising the global temperature by more than 1.5°C could make the world uninhabitable—and yet we are heading towards a 3°C increase.[2] Keeping below 1.5°C of warming requires "rapid, far-reaching and unprecedented changes in all aspects of society," says the report.[2]

Ominous warnings

Yet despite the increasingly ominous warnings of the past 30 years no country in the world has acted on the scale needed. We carry on arguing about Brexit, prioritise curing disease rather than preventing it, plan new airports, go to work, and bring up our children as if nothing was happening.

We enjoy what David Wallace-Wells calls "an anthology of comforting delusions: that global warming is an Arctic saga, unfolding remotely; that it is strictly a matter of sea level and coastlines, not an enveloping crisis sparing no place and leaving no life undeformed; that it is a crisis of the "natural" world, not the human one; that those two are distinct, and that we live today somehow outside or beyond or at the very least defended against nature, not inescapably within and literally overwhelmed by it."[3] He lists other delusions in his book *The Uninhabitable Earth: A Story of the Future Life*, but the greatest may be that technology alone can save us.

With their relentless protests, Thunberg and other schoolchildren around the world have shown a commitment that other groups, including health professionals, have not managed. Despite the efforts of, for example, the Global Climate and Health Alliance (climateandhealthalliance.org), the Lancet Countdown on Health and Climate Change (lancetcountdown.org), and the UK Health Alliance on Climate Change (ukhealthalliance.org), the commitment of health professionals to this issue has been patchy, intermittent, and sotto voce.

Now is the time for them to share the demands of schoolchildren and Extinction Rebellion activists, to insist that all governments tell the truth about climate change, declare an ecological and climate change emergency, and act urgently to halt biodiversity loss and to reduce greenhouse gasses to carbon net zero by or before 2030.

We call on governments to create and be led by citizens' assemblies on climate change and ecological justice, and on health professionals to vote only for representatives who prioritise climate change.

Robin Stott, executive member, UK Climate and Health Council, London stott@dircon.co.uk
Richard Smith, former editor, *The BMJ*, London
Rowan Williams, master, Magdalene College, Cambridge
Fiona Godlee, editor in chief, *The BMJ*, London

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ESSAY

Why medical cannabis is still out of patients' reach

The plant has been used as a medicine for millennia, writes **David Nutt**, who charts its relatively recent prohibition, the effect on patients such as Billy Caldwell, and the failure of legal reform to make much difference

BIOGRAPHY

David Nutt is the Edmond J Safra professor of neuropsychopharmacology and a psychiatrist at Imperial College London. He trained at Cambridge, Guy's Hospital, London, and Oxford University, and at the US National Institutes of Health. His research focuses on the use of positron emission tomography and functional magnetic resonance imaging to understand how drugs work in the brain and the mechanism underpinning psychiatric disorders, particularly addiction, depression, and anxiety disorders. In 2008-09 he chaired the government's independent Advisory Council on the Misuse of Drugs. This essay is based on his 2019 Royal College of Psychiatrists president's lecture, available to view at https://www.rcpsych.ac.uk/members/presidents-lectures

Cannabis is arguably the world's oldest medicine, with evidence of such use from 3000 year old tombs in Egypt and Siberia. It had a place in Indian and Chinese medical writing from nearly as long ago. It didn't enter the UK until the late 1600s, but by the 1800s it was widely used, sold over the counter as an alcoholic tincture for problems such as tetanus and seizures. Its efficacy more broadly became apparent, and the definitive overview was published in the *Lancet* in 1890 by John Russell Reynolds. Because he was Queen Victoria's physician it is believed that she used cannabis medicines, particularly for period and childbirth pains.

The demise of cannabis as a medicine began rather surprisingly when in 1933 the US Senate voted to rescind the law on alcohol prohibition. This left the threat that 35 000 officers of alcohol prohibition enforcement (now the Drug Enforcement Administration) would lose their jobs, along with their director, Harry Anslinger. So Anslinger created a new drug scare in alcohol's place: cannabis.

He used its Mexican name, marijuana, to associate its use with unofficial immigrants. Then, working with the less scrupulous media, he created scare stories about the damage wrought by cannabis: that its use would destroy Americans' lives and result in white women being raped by drug crazed foreigners, and so on. Though fanciful and dishonest, these stories created the intended public moral panic.

Cannabis became public enemy number one among drug threats, and the DEA was saved. To further vilify cannabis, and to prevent its cultivation for medical use, cannabis was removed from the US pharmacopoeia in 1934. The rest of the world was encouraged to support the ban: in its 1934 report the League of Nations' health committee agreed with the US that cannabis medicines had no value.

This report was relied on to control cannabis under the 1961 United Nations Single Convention on Narcotic Drugs and amazingly persisted as the international medical guidance on cannabis until 2018, being used as the justification by the World Health Organization for keeping cannabis a schedule 1 controlled drug until then. Even more absurdly, the 1934 report has been lost, so we can't explore its evidential base or reasoning.

At first the UK held out against this outrageous denial of the value of medical cannabis, just as it did when the US similarly attempted to eliminate heroin as a medical treatment. Cannabis continued being used as a medicine in the UK until the 1971 Misuse of Drugs Act, when it was relegated to schedule 1, for harmful drugs with no unique medical value.

The driver for this ban was continued pressure from the US, which still cherished the illusion that, by disallowing medicinal use, recreational use could be restricted. The ban's pretext was misuse of cannabis medicines by two GPs in Ladbroke Grove in London who were prescribing tincture of cannabis to treat heroin addiction, not a recognised indication. Rather than just having the GPs struck off the medical register, the government decided to accede to decades of US pressure.

The ban's pretext was misuse by two GPs who were prescribing tincture of cannabis

Subsequently, many states in the US and now 20 countries have reinstated cannabis medicines, but UK governments, Conservative and Labour, resisted this trend, despite the remarkable 1998 House of Lords report that recommended that cannabis again be made a medicine. At first Tony Blair's government was supportive. Then, for reasons still unclear but probably in response to pressure from certain newspapers, it made a sharp U turn. Cannabis possession offences were made a target for the police. Hundreds of thousands of people—mostly black or other ethnic minority young men—were convicted in the decade of the 2000s.

A common justification for ignoring the Lords' recommendations was that, because WHO hadn't changed the status of cannabis, for the UK to do so would breach international protocol. There was also significant political benefit in keeping cannabis illegal. Medical cannabis was sucked into this policy on the grounds that it might leak into the black market and that its use could be seen as a route to legalisation.

Attacks on medical cannabis were relentless, and thousands of self medicating patients were prosecuted. Worse, when patients started to justify their use of cannabis through the common law defence of necessity, this was abolished by Labour under Gordon Brown. Magistrates hated this decision because it removed any latitude in their decision making: everyone brought to court was guilty. It also gave enormous power to the police: they could guarantee a conviction simply by making an arrest.

To justify keeping cannabis illegal, claims of harms, such as from use while driving, were publicised, and the danger of its causing schizophrenia was repeatedly raised. Sanctions for possession and selling were cranked up and efforts made to stop imports from abroad. Supplies began to dry up, but this had the disastrous perverse result of cannabis use becoming more harmful.

This paradoxical effect of zealous prohibition increasing harms is not a new phenomenon. For more than a century attempts to prohibit drugs have led to the development and use of more harmful alternatives. So, when in the early 1900s smoking opium was banned, users switched to injecting morphine and heroin. Alcohol prohibition in the US led to hooch and methanol substitution.

The absurdity of the prohibition was clearly exposed. The UK had some of the highest rates of cannabis use in the world despite some of the harshest penalties

History repeated itself with cannabis. When customs agencies cracked down on importation, suppliers started growing their own in the UK. But to maximise their investment they grew a new form known colloquially as skunk. This contains much higher amounts of Δ-9-tetrahydrocannabinol (d9THC), typically over 10%, and the plant is depleted of the other major bioactive ingredient, cannabidiol (CBD). CBD acts as a functional antagonist to the most problematic effects of d9THC, and especially it can attenuate the psychotomimetic and cognition impairing effects of d9THC. For this reason, recently, CBD has been used successfully as an adjunctive treatment for schizophrenia.

The double whammy of losing CBD and increasing d9THC content in skunk was the worst possible outcome, as it engendered more psychotic-like experiences and more dependence. A recent analysis by researchers at King's College London found that traditional herbal or resin cannabis, with its balance of d9THC and CBD, doesn't cause schizophrenia—but that skunk might.

The absurdity of the prohibition of medical cannabis was clearly exposed by data on cannabis use. When medical cannabis was banned in 1971 fewer than half a million UK adults had used cannabis, yet by 2005 this number had risen 20-fold to over 10 million. The UK had some of the highest rates of cannabis use in the world despite some of the harshest penalties. The ban on medical cannabis certainly hadn't reduced recreational use but had almost totally denied access for patients.

Two exceptions were nabilone, a synthetic form of d9THC, which is licensed for nausea and vomiting induced by chemotherapy and for cachexia, and later nabiximols (Sativex), containing equal amounts of d9THC and CBD, licensed for pain and spasticity in multiple sclerosis. However, neither was much used, partly because of their controlled drugs status and, in the case of Sativex, the high cost. These preparations also lack the many other components of the cannabis plant, such as the cannabinoid tetrahydrocannabivarin (TCHV), which preclinical studies indicated could be a potent anti-epilepsy agent and which was predicted to boost the therapeutic effects of d9THC and CBD.

Although most of the world fell in line with the 1961 UN convention banning medical cannabis, the Netherlands decided to allow medical and recreational use despite US pressure not to do so. More recently, 30 US states have now allowed use of medical cannabis. By January 2018 more than 200 million US citizens had access to medical cannabis—but not a single UK resident. In 2017 German

BELLE MELLOR

The public outcry to this cruel denial of a proved therapy was profound authorities allowed medical cannabis for 57 different indications.

The UK government resisted any softening of approach until 2018, when the case of the boy Billy Caldwell became public. Billy has a rare form of childhood epilepsy, Dravet syndrome, which results in thousands of seizures a month that are unresponsive to conventional anticonvulsant drugs.

His mother tried to obtain medical cannabis in the UK but was denied, so she took him to the US and Canada to seek treatment. This was remarkably successful. With CBD Billy's seizures reduced hugely, and with the addition of full extract cannabis oil they disappeared completely, probably because the oil contained some d9THC and TCHV. He was able to stop his other medications, and his cognitive and motor abilities markedly improved.

When his mother returned home to Northern Ireland Billy's GP was so impressed by the transformation that he agreed to prescribe the cannabis oil. But when local medical authorities found out they threatened the GP with a charge of gross medical misconduct if he continued to prescribe an "illegal" drug, so he stopped.

To prevent Billy's condition deteriorating, his mother took him back to Canada for more supplies and tried to import them into the UK, declaring them at Heathrow airport customs. The drugs were confiscated, and Billy's condition rapidly worsened. His seizures returned, and he went into status epilepticus that required his admission to the intensive care unit at St Thomas' Hospital, London, where he was sedated and ventilated.

The public outcry to this cruel denial of a proved therapy, coupled with the possibility of Billy experiencing more brain damage or even dying, was profound. It persuaded the home secretary to give Billy a special licence to use cannabis oil, so his supplies were returned and his seizures stopped.

The chief medical officer for England then reviewed the schedule 1 status of medical cannabis. She stated that cannabis was clearly a medicine, so on 1 November 2018 cannabis products were moved into schedule 2 under the Misuse of Drugs Act, but limiting prescription to specialists, or a GP acting under the instructions of one. There are no specified medical indications for medical cannabis in the UK: as long as the specialist has evidence of efficacy—from published reports or personal patient testimony—a prescription as a "special" can be offered.

However, the roll out of medical cannabis has been much slower than patients and parents had hoped. Still only a tiny number of children with severe juvenile epilepsies are being treated, and many others continue to have multiple seizures because neurologists will not prescribe.

There are several likely reasons for this. One is ignorance of the value of cannabis medicines, because few doctors have any training or experience in this area and are fearful of prescribing them off licence. Another reason for resistance could be that parents and patients lead this initiative rather than the medical profession. Some doctors fear that medical cannabis will lead to severe adverse effects such as psychosis, and others that it will lead to more recreational use, which seems unlikely given the current wide use and availability of black market cannabis.

Additionally, some pharmacists and clinical commissioning groups are refusing to pay. Another substantial challenge is obtaining supplies, because currently all medical cannabis has to be sourced from foreign producers in the Netherlands and Canada.

We must hope the situation will soon improve. One way forward would be to use the cancer research model, where small expert groups aligned to a specific indication, such as Tourette's syndrome or adult epilepsy, are set up. These could conduct open effectiveness studies in this indication all using the same form and strength of medical cannabis and all collecting data on outcomes and adverse effects in the same way.

Something similar has already been developed for ketamine for depression. Because such studies would come under the ambit of clinical audit rather than be a formal clinical trial they would be much easier to start and much less expensive than traditional trials. Any practitioners interested in joining such groups should email me.

One final point: about 70 years ago another natural medicine came into the medical arena. This was welcomed enthusiastically by UK doctors even though there had been no placebo controlled trials of its efficacy because it was seen to fulfil a major clinical need. That drug was penicillin. If today's medical profession could embrace cannabis in the same way as it did penicillin then the true value of this plant medicine should rapidly be realised.

David Nutt, Edmond J Safra professor of neuropsychopharmacology, Imperial College London
d.nutt@imperial.ac.uk

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For competing interests: see bmj.com

PATIENT COMMENTARY

The law changed so why are we still fighting?

The high profile case of Alfie Dingley's intractable epilepsy was key to last year's law change. His mother, **Hannah Deacon**, explains why she now advocates for the families still fighting for access to life-changing medicines

Hannah Deacon, Kenilworth, Warwickshire deaconhannah4@googlemail.com

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My son Alfie, born in 2011, was perfect until he was 4 months old, when he became constantly sick. At 8 months he had his first tonic clonic seizure. He continued to have seizures in hospital for nearly four months. Intravenous steroids eventually stopped this cluster of seizures.

He lost every skill he'd developed, and he was diagnosed as having immune responsive epilepsy. Alfie had clusters of seizures every eight months until he was 4 years old. Then they occurred every three weeks, and by the time he was 5, every week; needing up to five doses of intravenous steroids each time.

Then, Alfie was diagnosed with a rare epilepsy syndrome caused by a mutation in the gene that codes for the protein protocadherin 19. We were told that he might get better with age, but as far as we could see his health was getting worse. Only nine known boys worldwide have PCDH19 epilepsy, so prognosis was impossible.

Treatments that worked

I researched treatments for epilepsy. Medical cannabis kept coming up. In 1841 the Irish physician William Brooke O'Shaughnessy documented using cannabis for epilepsy. I learnt about the human endocannabinoid system and how cannabis medicines may work. Alfie's doctors told us that regular steroids would eventually kill him. Cannabis medicines seemed his only chance to live. We started to campaign for a prescription in the UK, where they were illegal.

Once we'd raised enough money, in September 2017, we moved to the Netherlands. There we legally gave Alfie oil prepared from Bedrolite (produced by the Dutch company Bedrocan), a standardised strain of cannabis plant. The full extract cannabidiol (CBD) oil from this strain also contains other cannabinoids. Over three months Alfie's seizures became less frequent. We added tetrahydrocannabinol (THC) oil (Bedrocan's Bedica) under our paediatric neurologist's guidance, and Alfie went without seizures for 40 days. When he did have clusters they were less intense and controlled much more easily. His cognitive development greatly improved.

One doctor threatened to report me to social services. One said that cannabis medicines costs too much

Living abroad, was tough. After five months we ran out of money. We had to come home.

In the UK we had to fight for a prescription containing both CBD and THC. We wanted to work with the Home Office but faced many obstacles. Finally, Mike Barnes, honorary professor of neurological rehabilitation at Newcastle University, successfully applied for the first UK licence for medical cannabis products for Alfie. Alfie received the first NHS prescription, for the products he'd been prescribed in the Netherlands, on 7 November 2018, after UK law changed on 1 November.

Cannabis medicines are not cure-alls. Alfie still has occasional clusters, but they stop in hours rather than after days in hospital.

Many children in similar situations have not been able to get these medicines despite now being legal. Reasons given have included lack of evidence, money, and support from NHS managers. I work with the campaign group End Our Pain, currently supporting 16 such families. It is heartbreaking that seemingly no NHS doctor is willing or able to prescribe medicines that could help these children who have been very sick, some for many years, after trying many other drugs.

Guidance is just that

England's health secretary, Matt Hancock, told the House of Commons on 8 April that the British Paediatric Neurology Association's guidance against prescribing full extract medical cannabis was just that—guidance—and that 95 000 doctors in the UK could prescribe. So why are families still not getting prescriptions? Why was the law changed if access was not to be forthcoming?

I know of a child taking Bedrolite and Bedica in the UK, funded by the parents. Their doctor is overjoyed at the results yet says he cannot prescribe because of the BPNA's guidance. This is not an isolated incident and must be dealt with urgently. I have spoken to many doctors about cannabis. One threatened to report me to social services. One told me that cannabis medicines cost too much. On our return from the Netherlands a doctor said that we must change Alfie's medicine to pure CBD (Epidiolex). I refused: Alfie already had an effective medicine.

I know the NHS is underfunded. But consider the long term care needs if a child deteriorates. And in families with a child with epilepsy, the social impact on the full time carer (usually the mother) is immense. Consider the mental health problems, the family breakdowns. The costs to society and to the NHS far exceed those of a product that may give all these families a life worth living.

Struggle to breathe

I am often asked why I campaign. My family is everything to me. I have watched my son struggle to breathe when he is having a seizure, seen my daughter cry when I leave her, and noticed my partner anxious about the future. We became campaigners because we had no choice. We are our child's only advocates, and must do all we can to be heard.

I have watched my son develop and enjoy life, and every child with intractable epilepsy should have the right to cannabis medicines that could save them from a life of suffering.

Hannah Deacon (centre) and her son Alfie campaign for access in the UK to the medicines he used in the Netherlands that drastically reduce his seizures

BRIEFING

Breast ironing

Recent media reports allege under-reported physical abuse of UK girls to flatten their breasts, writes **Francesca Robinson**. What should doctors do if they suspect this?

What is breast ironing?

Breast ironing, or breast flattening, is a practice traditional to some parts of Africa, considered by the United Nations to be gender based violence. Young girls' breasts are ironed, massaged, flattened, or pounded down over a period of sometimes years, to reduce their size or delay their development.

Relatives aiming to protect young women from unwanted sexual attention or rape, and to delay sexual activity and potential pregnancy, may use large heated stones or implements such as hammers or spatulas to compress breast tissue. Others may use belts or binding. This abuse often begins at the first signs of puberty.

The practice can persist in emigrant populations, and the Conservative MP Jake Berry raised the matter in the House of Commons in 2016. Recent campaigning by the health charity CAME Women and Girls Development Organisation (CAWOGIDO), which claims that the practice is increasing in the UK, led to a flurry of media reports.

How prevalent is it?

Breast ironing has been recorded in parts of Cameroon and other African countries. Nearly a quarter of Cameroon's female population have experienced the practice, which is usually carried out by female relatives, says Gender Empowerment and Development, a Cameroonian non-governmental, non-profit organisation. However, no systematic study or formal data collection about breast ironing has been done in the UK, and only anecdotal reports exist.

Margaret Nyuydzewira, the head of CAWOGIDO who experienced the practice as a girl, says that an estimated 1000 women and girls in the UK have been subjected to this abuse.

Sian Morgan, associate specialist in community paediatrics at Lewisham and Greenwich NHS Trust in London, has never seen a case but told *The BMJ* that, since she first heard about breast ironing, she has included education about it in all of her induction and safeguarding training.

"The more people know about it, raise awareness, and think about it, the more they can do something about it," she says. The practice is hard to spot, however: she warns, "Some doctors may have seen a case and not realised what it was. Like sexual abuse, this practice is hidden."

What impact can it have?

Breast ironing can cause pain, bruising, cysts, and scarring of the breasts. Girls may develop asymmetrical breasts, and one or both breasts may disappear. It may result in feelings of low self esteem and lost femininity, and victims may be reluctant to undergo medical examination.

Margaret Nyuydzewira, who experienced the practice as a girl, estimates that 1000 women and girls in the UK have been subjected to this abuse

The National FGM Centre, a partnership between the children's charity Barnardo's and the Local Government Association in England and Wales, works to improve services for families affected by female genital mutilation (FGM). In 2017 its remit grew to include breast ironing. It says that some girls may ask for help or may talk about pain or discomfort in their chest, but they may not be explicit about their experience because of embarrassment or fear.

What should doctors do if they suspect it?

It's not only paediatricians and GPs who should be aware of the practice, says Morgan, but also obstetricians and gynaecologists. "Similar to FGM, if you notice it in a woman who is pregnant, and she gives birth to a girl, then you need to do a risk assessment on the mother and the family to see whether the child is at risk."

The Royal College of Paediatrics and Child Health is aware of the practice but has had no reports of it from its members. A spokeswoman told *The BMJ*, "This is a form of child abuse, causing the child significant harm, and child protection services need to be informed if anyone suspects it has happened or is happening."

What resources exist for professionals?

Very few. CAWOGIDO is working with London's Metropolitan Police Service to educate health authorities and other organisations about the practice. But it warns that authorities' awareness is low in other parts of the country: a quarter of child services have received no training to deal with breast ironing, and only one in seven police forces is aware of it. The National Education Union has called for breast ironing awareness to be made part of the mandatory school curriculum.

The National FGM Centre has a leaflet on the practice, and videos on its website discuss the safeguarding duties of healthcare professionals.

Is it a crime?

Breast ironing is not specifically mentioned in UK law, but it is harmful and considered to be child abuse. Morgan says this means that doctors have a duty to follow local safeguarding procedures if they suspect that a girl is a victim.

No perpetrators have yet been prosecuted.

Francesca Robinson, freelance journalist, Hampshire
fran.robinson8@gmail.com

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