

this week

GUERNSEY CONSULTS ON ASSISTED DYING p 506 • **NEW MEDICAL SCHOOLS MAP** p 510



“End medical manslaughter madness”

The role of criminal law and medical manslaughter in cases where doctors make mistakes must be rethought, a leading professor of health law and ethics has said.

Ian Kennedy QC led a review into the case of breast surgeon Ian Paterson who was jailed for 15 years last year for carrying out “extensive, life changing operations for no medically justifiable reason.”

Speaking at the Royal College of Surgeons of Edinburgh’s triennial conference in Edinburgh on 22 March, Kennedy said that the law caused problems rather than providing solutions when things went wrong and doctors made mistakes.

“We need to rethink the role of the criminal law and medical manslaughter,” he said. “Does it have any place in how we deal with things going wrong . . . because medical manslaughter means that you can pick someone, blame them, and imagine that you’ve solved the problem. And what you have actually done is exacerbated it.”

Kennedy touched on the case of Hazida Bawa-Garba who was struck off after the GMC won a High Court appeal against a Medical Practitioners’ Tribunal ruling that she should be suspended for 12 months after she was convicted of manslaughter on the grounds of gross negligence in 2015.

“If there is a barrier to doctors doing what they signed up to do and then dealing with things going wrong, it is the intrusion of the criminal law and [Bawa Garba] is a good example of that,” Kennedy said. “Because she could be picked out, she could be prosecuted, and no one was concerned that she was looking after six wards without any induction, the IT system was down, and several doctors were on leave. In terms of human factors, she walked into a disaster zone. But a [child] died and someone had to go—and that, in my view, suggests we should first ‘kill all the lawyers.’”

He said that the GMC’s work looking into wider issues around medical manslaughter “should consist entirely of ‘lets get rid of it.’”

Kennedy said that it was “madness” to sue doctors when things went wrong. “There is another way,” he said. “We should not sue doctors because that persuades them not to confess their mistakes—because their career is about to be at risk. If we want to learn from errors then we have to expose them,” he added. “Suing doctors confuses the need for compensation for a patient who has been harmed with culpability. We need to separate those two things.”

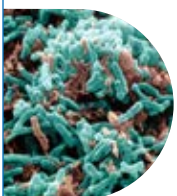
Abi Rimmer, *The BMJ*

Cite this as: *BMJ* 2018;360:k1376

Ian Kennedy told the RCSEd that the use of criminal law to prosecute doctors’ mistakes is a barrier to effectively dealing with things that go wrong

LATEST ONLINE

- Brexit negotiators must seek “closest possible regulatory alignment” to protect patients and industry
- Call for new impetus to tackle TB across Europe
- Questions of research misconduct follow Trump’s pick for CDC director



SEVEN DAYS IN



Guernsey to vote on legalising assisted dying

Politicians in Guernsey look set to vote on taking steps towards legalising assisted dying, which would be the first such regime in the British Isles. Several members of the island's parliament have put forward a *requête*—the closest equivalent to a private member's bill in Westminster—with a debate and vote due to take place in May.

Passing it would mean agreement, in principle, to develop a suitable legal regime to permit assisted dying for people who are terminally ill and mentally competent, and would lead to an 18 month consultation followed by proposed legislation.

It is illegal to help someone end their life in the UK. Guernsey residents hold British passports, but the island has the freedom to pass its own laws.

Gavin St Pier, chief minister at Guernsey's parliament, told *The BMJ*, "I am leading this [*requête*] with the support of six colleagues. This is an issue that does have significant public support and from members of the medical profession, albeit perhaps not a majority."

Doctors' views would be essential to the process, St Pier added, with examination of issues such as enabling conscientious objection.

Adrian O'Dowd, London [Cite this as: BMJ 2018;360:k1342](#)

NHS funding

Hunt wants 10 year NHS funding deal

England's health secretary, Jeremy Hunt, called for a 10 year funding deal for the NHS amid speculation that the government could make more money available. A full departmental spending review is due next year, but Hunt told ITV's *Peston on Sunday* that healthcare needs a 10 year settlement to allow proper planning to cope with an ageing UK population. Speculation that Theresa May (below) plans to announce an extra £4bn a year for the NHS for the next 10 years, to coincide with the NHS's 70th anniversary in July, was "premature," he said.

Tax must rise to fund health service, say MPs

A cross party group of senior MPs wrote to Theresa May urging her to set up a parliamentary commission to look at funding of the NHS, social care, and public health. The letter, signed by 98 MPs including 21 select committee chairs, said a special select committee could examine witnesses and report by Easter 2019. "Without

action patients will experience a serious decline in services and the blame will be laid squarely at the door of politicians," it said.

GP pensions

BMA requests information on Capita's failures

The BMA used a freedom of information request to ask NHS England about GPs' pensions after failures at Primary Care Support England (PCSE), run by Capita. It asked about the value and whereabouts of unallocated money, the absence of bank details, out of date pension records, and the number of complaints made. "NHS England must resolve these issues so that no GP is financially penalised," said Krishan Aggarwal, of the BMA's GP committee.

End-of-life care

Many are admitted to hospital in last year of life

The UK had more than 1.6 million end-of-life emergency admissions in 2016, an analysis by the terminal illness charity Marie Curie found, leading to around 11 million days in hospital and costing the NHS £2.5bn. In England the average number of

admissions per person (3.16) was nearly twice as high as in Scotland (1.65) or Wales (1.61). By 2041, end-of-life admissions could cost £4.9bn, and the NHS will be "overwhelmed" if significant action is not taken to properly fund social care and community services, said the charity.

Incentive awards

Agreement is reached on consultants' bonus scheme

The BMA and the government agreed out of court to retain clinical excellence award payments for doctors in England. The BMA had taken legal action after the government said that the awards were non-contractual and did not need to be retained in a new consultant contract.

Fitness to practice

Doctor is struck off for sexual assaults

Maher Khetyar, 46, a hospital doctor who qualified in 1997 in Syria, has been struck off for sexually assaulting two women under the guise of examinations. The GMC successfully appealed to the High Court against a medical practitioners' tribunal decision to suspend him for 12 months last October. The judge ruled that erasure was the only appropriate punishment.

Prosecution

Trust fined £2m after deaths of two patients

Southern Health was fined £2m after admitting "systemic failures" that led to the deaths of Connor Sparrowhawk, 18, who drowned in a bath following an epileptic seizure at Slade House in Oxford in 2013, and Theresa Colvin

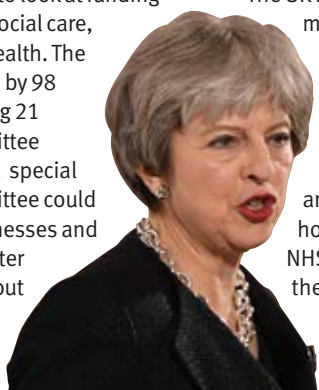


(above), 45, who died after being found unconscious at Woodhaven Adult Mental Health Hospital in 2012. The trust admitted breaching health and safety laws.

Conflicts of interest

Poor practice may damage trust in clinicians

Several standards require NHS staff to declare potential conflicts of interest to their employers, but trusts with a register (185 of 236) scored only 1.9 on a five point transparency index created by researchers writing in *BMJ Open*. "The ongoing absence of transparency in the UK may undermine public trust," they said.



MEDICINE

Overseas news

Dentists may risk idiopathic pulmonary fibrosis

An apparent cluster of cases of idiopathic pulmonary fibrosis (IPF) among dentists in Virginia, US, led the Centers for Disease Control to warn that the profession may have a raised risk of the progressive lung disease. Nine of 894 patients treated for IPF at a clinic since 1996 were dentists: this 1% rate was about 23 times higher than in the general population. One affected dentist had polished appliances and prepared amalgams and impressions without respiratory protection and used a surgical mask only late in his career.

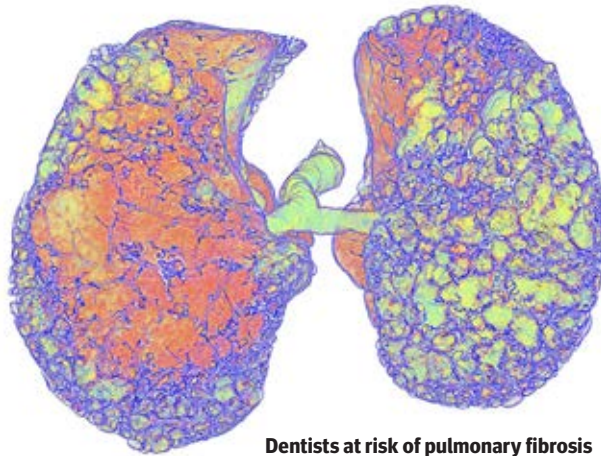
All of Brazil to receive yellow fever vaccination

Brazil's health minister announced that the country was expanding its vaccination campaign against yellow fever to cover the whole population. Ricardo Barros said that including the final four of 27 states means that nearly 78 million people will have been vaccinated by April 2019. He told a briefing on 20 March that 920 cases have been reported nationwide since July 2017 and that 300 people have died from the disease.

Public health

NICE tells councils to improve footpaths

Councils should widen footpaths, repair potholes, stop parking on pavements, and remove hazards such as tree roots, NICE said in guidance to encourage people to be more active. Mark Baker, director of NICE's centre for guidelines, said, "Handing back some of the roads to pedestrians and cyclists will help people to become more active. Simple things such as ensuring street lights are working and hedges are kept trimmed makes walking a more attractive option, which will lead to healthier lives."



Dentists at risk of pulmonary fibrosis

MEPs tackle public's vaccine hesitancy

The European parliament urged health authorities to step up efforts to boost public confidence in vaccination, amid signs of what MEPs have called "the worrying phenomenon of vaccine hesitancy." Data showed 14 451 cases of measles last year in the EU, Iceland, and Norway, up from 4600 in 2016. Since January 2016 the disease has led to 50 deaths. The statement condemned "the spread of unreliable, misleading and unscientific information" and urged governments and the European Commission to develop awareness to increase uptake.

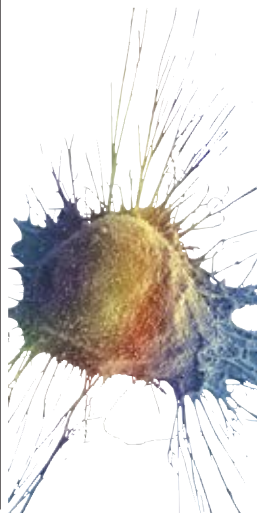
Restrictive practices do not cut abortion rates

Abortion rates have declined globally over the past 25 years, although most of the change has occurred in developed regions (down from 46 per 1000 women of reproductive age in 1990-94 to 27 per 1000 in 2010-14) rather than in developing regions, said a report from the Guttmacher Institute. It found an abortion rate of 37 per 1000 in countries where abortion is banned or permitted only to save the woman's life, compared with 34 per 1000 in countries where abortion is not restricted as to reason.

Cite this as: *BMJ* 2018;360:k1393

CANCER

Some **37.7%** of all cancers diagnosed each year in the UK, and **41.5%** in Scotland, could be prevented through lifestyle changes—more than 135 500 cases [*Cancer Research UK*]



SIXTY SECONDS ON... PROSTATE CANCER



OPERATE OR WATCHFUL WAIT?

As reluctant as surgeons are to do nothing, an important trial published last year put a crimp in their confidence. PIVOT followed 731 men with early prostate cancer who were randomised to prostatectomy or observation and followed up for almost 20 years. It found that surgery didn't lead to lower mortality from all causes or from prostate cancer.

SO, LOTS OF MEN RISKED IMPOTENCE OR INCONTINENCE FOR NOTHING?

That's it, in a nutshell. But wait...

WHAT FOR?

The counter-attack, of course. PIVOT has been criticised since it was published in the *New England Journal of Medicine*. Critics said it was underpowered and that during the trial some men changed sides: more than a fifth allocated to prostatectomy didn't have the operation, while a similar proportion of the observation group did.

CHIPPING AWAY

Spreading doubt, certainly. Then last week at the European Association of Urology Congress a presentation, also published in *European Urology*, claimed that the PIVOT participants were up to eight times as likely to die in the time period covered by the trial as real world patients would have been.

WHAT WOULD THAT MEAN?

Firas Abdollah, lead author of the critique, said that the patients in PIVOT were older and sicker than the typical US patient with early stage prostate cancer. He couldn't say for certain what the result would have been in a like for like comparison, but added, "I think everyone would be surprised if this didn't tip the survival data more towards surgical intervention."

SO, ARE GUIDELINES BASED ON PIVOT NOW WASTEPAPER?

Not so fast. It's unlikely that this argument has run its course. And quite unlikely that another randomised controlled trial would gain approval, given the entrenched views of so many urologists that denying men surgery would be unethical.

ARE THE CRITICS ALL SURGEONS, BY ANY CHANCE?

The majority are not unacquainted with the scalpel.

Nigel Hawkes London

Cite this as: *BMJ* 2018;360:k1385

Doctors can take blood from Skripals for chemical weapons tests, rules judge

The Russian double agent and his daughter who were targeted by an assassination attempt in Salisbury in early March may have permanent brain damage and may never fully recover, a High Court judge has said.

The first details to be made public about the condition of Sergei and Yulia Skripal came in a Court of Protection judgment authorising Salisbury NHS Foundation Trust to take blood samples from them for testing by the independent Organisation for the Prevention of Chemical Weapons (OPCW). The trust may also show the organisation the Skripals' medical records since 4 March, when the attack took place, Mr Justice Williams ruled.

Blood tests carried out by the government's Porton Down laboratory after the attack identified the poison as a rare Russian made nerve agent, part of a family called novichoks.

The government blames the Russian state for the attack, but Russia denies responsibility. The OPCW wants to carry out its own tests to try to identify the toxin, conduct DNA analysis to confirm that the samples tested by Porton Down were from the Skripals, and retest the samples already analysed by Porton Down.

Cannot communicate

Both Skripals remain in hospital under heavy sedation, Williams said. "The precise effect of their exposure on their long term health remains unclear, albeit medical tests indicate that their mental capacity might be compromised to an unknown and so far unascertained degree," he said. Sergei Skripal is unable to communicate in any way, and his daughter, 33, cannot communicate "in any meaningful way," he added.



The Salisbury attack has left father and daughter unable to give consent for further tests

The original blood samples sent to Porton Down did not need a court order as they were carried out as a matter of necessity as part of their treatment. But the trust told the home secretary, Amber Rudd, that because the Skripals lacked capacity to consent, a court order would be needed for further blood to be sent to OPCW. The judge had then to decide whether taking the blood would be in the Skripals' best interests. He said that the evidence



Ali Parsa, Babylon chief executive



Sarah Williams, Hackney GP



Steve Field, GP chief inspector

Doctor contests claim that online GP at Hand service passed inspection "with flying colours"

A London GP who is leading a campaign against the online service GP at Hand has complained to the Care Quality Commission (CQC) after Ali Parsa, the chief executive of Babylon, the service's digital provider, claimed in an interview that it had passed its inspection "with flying colours."

Sarah Williams, GP partner at the Nightingale Practice in Hackney, said Parsa's comments on BBC Radio 4's *Today* programme on 23 March were "untenable."

The latest CQC inspection of Babylon, carried out in July 2017 and published in December, found "in some areas, this service was not providing safe care in accordance with the relevant

regulations." It added that prescribing decisions were not always made appropriately.

Requires improvement

The inspection report for the GP at Hand practice (formerly Dr Jeffries and Partners) in west London published in March, rated its safety as "requires improvement." The practice launched the new model of care last year, offering a mix of consultations via smartphone and face to face.

Williams said, "Parsa's claim on national radio that GP at Hand had passed its CQC inspection with flying

colours is untenable. This inaccurate statement went unchallenged by Steve Field, CQC's chief inspector of general practice, who was part of the same interview."

A spokesperson for GP at Hand told *The BMJ*, "The CQC are on record that their inspection report puts Babylon in 'the top quartile of most favourable reports carried out by the CQC' and that 'in general... services were safe, effective, caring, responsive and well led.'"

Williams, whose practice recently wrote to patients to warn them that signing up to GP at Hand would deregister them from their local surgery,

said she had written to the CQC asking it to correct the misinformation. "I'm sure a great many more people will have been misled by this interview than will be accessing your website to discover the truth," she said.

A CQC spokesperson said, "Inspection reports for all of the providers of online primary care in England are available on the website."

The report found that half of independent online primary care services it had inspected were not meeting patient safety criteria.

Susan Mayor, London

Cite this as: *BMJ* 2018;360:k1404

● ANALYSIS, p 528

"I'm sure a great many more people will have been misled by this interview than will be accessing [the CQC] website to discover the truth"



was that samples from living people were of more scientific value than postmortem samples. At present both Skripals were “critical but stable,” but it was “not inconceivable that their condition could rapidly deteriorate.”

Williams said that an OPCW analysis could add to the knowledge base against which the two were being treated. But the main consideration in determining best interests is the beliefs and values held by the individuals that would

be likely to influence their decision if they had capacity. He added that he had no evidence as to the Skripals’ beliefs and values. But “an individual subjected to such an attack with personally catastrophic consequences would want to see it fully and properly investigated and that all appropriate steps to identify the perpetrators (individual and state) have been taken so that they can be held to account,” he added. And the detriment to them in having their blood taken was negligible.

Best interests

He concluded, “The overall balance in the evaluation of the best interests of Mr Skripal and Ms Skripal, assessed on a broad spectrum and taking account of the pros and cons of taking and testing the samples and disclosing the notes, in my judgment falls very clearly in favour of the taking of the samples. In so far as it is necessary it is also lawful and in their best interests that the existing samples are provided to OPCW for further testing.”

Clare Dyer, *The BMJ*

Cite this as: *BMJ* 2018;360:k1383

Newborn’s low blood sugar death prompts safety upgrade at Barts

A coroner has instructed the chief medical officer for Barts Health NHS Trust to respond after a newborn baby boy died from undiagnosed low blood sugar levels.

Caliel Smith-Kwami was born in July 2017 and had a hypoglycaemic attack 28 hours later. He was admitted to the Royal London Hospital in east London, part of Barts Health, and tests were taken. But he was discharged before the results came back.

He was discharged on 2 August and died 15 days later from persistent neonatal hyperinsulinaemic hypoglycaemia.

At his inquest, senior coroner Nadia Persaud said the baby would probably have survived if his condition had been diagnosed. In January she sent Barts’ chief medical officer a regulation 28 report, which coroners send if an inquest reveals information that could prevent future deaths.

Further investigation

“Had the laboratory result been received it is likely that Caliell would have undergone further investigation, monitoring, and treatment,” Persaud said.

Evidence given at the inquest also revealed that the results of his

amino acid profile, which raised the possibility of hyperinsulinism, were sent to the electronic record system, but it did not appear any clinician had seen them. The consultant in charge of his care told the inquest there was no system in place for highlighting that results were ready.

A Barts spokesperson said it had responded to the coroner, adding, “We apologise unreservedly for the distress caused. Our laboratory systems have been fully upgraded and reporting systems updated to make all safe and reliable.”

Clare Dyer, *The BMJ*

Cite this as: *BMJ* 2018;360:k1370

FIVE MINUTES WITH . . .

Peter Gordon

The psychiatrist discusses his campaign to make disclosing fees from drug companies mandatory

“People often laugh when they see my sign calling for a sunshine act in Scotland, they think I want more sunshine. The idea is actually about letting in the daylight and making things clear and transparent.

“Sunshine legislation makes it mandatory for doctors, academics, and scientists to declare any competing financial interests. At the moment we don’t have anything like this. What we do have is a number of separate, overlapping, and largely inefficient registers that the public struggle to find. The only one that has been introduced in recent years is the Association of British Pharmaceutical Industries’ Disclosure UK database.

“I have concerns about this database as it is voluntary. Roughly £42m each year is paid to British healthcare workers by the pharmaceutical industry and we still don’t know where most of that goes.

“In my experience, it is very difficult to find out about a doctor’s financial competing interests and the scale of those interests. Therefore, we

need to make financial declarations mandatory so the public can find out what is happening for themselves.

“What I wouldn’t want is a bureaucratic system; I would favour a central, independent register that is somehow linked to the appraisal process so most doctors can just tick a box once a year to say, ‘I don’t have anything to declare.’ If

it is mandatory then the information about those people who do have something to declare will go straight to that central independent register.

“While it’s likely that most doctors and academics don’t have any financial competing interests, there are small groups of people, who are heavily involved in educating other doctors, who may have significant involvement with the pharmaceutical industry. And we have no idea of the scale of the payments they might be receiving.”

Peter Gordon is psychiatrist for older adults at NHS Lothian

Abi Rimmer, *The BMJ*

Cite this as: *BMJ* 2018;360:k1380



DECLARATIONS NEED TO BE MANDATORY SO THE PUBLIC CAN FIND OUT WHAT IS HAPPENING

NEWS ANALYSIS

MPs call for fresh talks to end deadlock over cystic fibrosis drug

Several new precision medicines are in the pipeline. But will they ever reach patients? **Jacqui Wise** reports



Stuart Elborn:
“The concern is, will the UK ever fund these new treatments?”



Ian Austin MP:
“Every day the drug is delayed is another day in which lungs are damaged”

MPs attending a packed parliamentary debate on access to the cystic fibrosis (CF) drug Orkambi have criticised NICE’s current appraisal system as not fit for purpose in assessing the value of precision medicines.

Orkambi, which was licensed by the European Medicines Agency three years ago and is available in a number of European countries, costs £104 000 per person per year. MPs speaking at the debate on 19 March called on health ministers to get around the table with NHS England, NICE, and the drug’s manufacturer, Vertex, to break the deadlock in negotiations.

The debate was held after an online petition gathered more than 100 000 signatures in just 10 days. Sixty MPs attended the debate, many of whom spoke passionately about constituents desperate to access the treatment.

Ian Austin, MP for Dudley, said, “Every day that access to this drug is delayed is another day in which the lungs of people with cystic fibrosis are damaged. Drugs are being developed and technological changes are happening so rapidly that I want to ask whether the way in which drugs are assessed, licensed, and approved still works.”

“Moral and ethical position”

Mike Penning, MP for Hemel Hempstead, said, “If we do not give people these drugs—not just this one, but the others coming down the pipeline—the cost to the NHS is greater.

“If we take away the moral and ethical position that we have something that will improve and extend someone’s life and look just at what NICE looks at—the cost implication—it is plainly obvious that we need to have



A protest in London last June after NICE rejected Orkambi as not being cost effective

a better system to assess the costs.”

Orkambi is a double combination therapy (ivacaftor/lumacaftor) that is licensed for patients aged 6 years and over who have two copies of the F508del mutation—around 50% of people with CF in the UK. Both NICE and the Scottish Medicines Consortium have said that they are unable to recommend it for general use on cost effectiveness grounds.

More than 10 000 people in the UK have CF, the second highest rate in the world. Around 3000 patients would be eligible to access Orkambi, which is the second precision medicine to be licensed for use in patients with CF. The first, Kalydeco, is available on the NHS but is suitable only for patients with one of nine rare genetic mutations.

Data from the phase III TRAFFIC and TRANSPORT studies showed that, after 24 weeks of treatment with Orkambi, patients had an average improvement in lung function (FEV1) of 2.41%-2.65%. Treatment also led to a 39% reduction in the number of exacerbations requiring hospital admission or antibiotic treatment when compared with placebo.

Stuart Elborn, consultant in respiratory medicine at the Royal Brompton Hospital in London, told *The BMJ*, “Orkambi is not a cure for CF, but it is an effective treatment. More effective treatments are coming along, but they will not be available for a few years yet.

“Orkambi has a relatively small effect on lung function, but I am more impressed by its effect on reducing exacerbations. These are like heart attacks to the lungs, which cause significant damage. I suspect that when we get more long term data it will be even more promising.”

Promising triple combinations

Vertex has another precision medicine called Symdeko, a combination of tezacaftor and ivacaftor, which was approved by the US Food and Drug Administration in February and is expected to be approved in Europe this year. The manufacturer also has a number of promising triple combination treatments in the pipeline, with phase III trials starting this year. The drug companies Galapagos and Proteostasis Therapeutics are also developing triple combination treatments.

Elborn said, “The concern is, will the UK ever fund these new treatments?” He emphasised the need for a much wider public debate about funding such innovative but expensive drugs.

Last June Vertex reached a deal with the Health Service Executive in the Republic of Ireland for a portfolio approach to CF drugs, meaning that all current and future CF medicines would be made available to eligible patients through a fixed budget cap. It proposed this portfolio approach to NHS England and the Scottish health authorities last month, but NHS England rejected the proposal just before the parliamentary debate.

“Not fit for purpose”

Speaking at the debate, Paul Scully, MP for Sutton and Cheam, said, “Basically, it is easier, under the NICE appraisal system, for medicines for acute conditions to attain a more favourable cost effectiveness outcome than for innovative medications for chronic conditions, like Orkambi. It is basically a one size system.”

Elborn agreed, saying, “I think NICE is not fit for purpose.” He argued that the current system does not work for rare diseases such as CF, as it is harder for a drug company to recoup research costs.

“It is very difficult to put a value on a drug like Orkambi,” he said. “As well as considering all of the NHS costs and keeping someone with CF well and out of hospital, it is important to remember that this is a young active population that could make an active contribution to work and to society.”

Responding to the parliamentary debate, Steve Brine, health minister, said, “The government wholeheartedly support efforts to ensure that the precision medicines we have heard about are made widely available to CF patients and other patients.

“It is true that high cost precision medicines represent a challenge to the NHS, but they are also a tremendous opportunity to deliver high quality outcomes through highly specialised treatment.”

Jacqui Wise has a sister with cystic fibrosis

Cite this as: *BMJ* 2018;360:k1337

Five new medical schools to increase home grown doctors

Five new medical schools have been created under government plans to increase medical student numbers in England.

In 2016 England’s health and social care secretary, Jeremy Hunt, announced a 25% expansion in medical student places to lessen reliance on overseas recruitment. He said that as many as 1500 more doctors would be trained in England every year from September 2018.

Health Education England (HEE) has announced the new undergraduate places will be at Edge Hill University in Lancashire, Anglia Ruskin

University in East Anglia, and the universities of Sunderland Nottingham, Lincoln, Kent and Canterbury Christ Church.

In 2017, 500 new places were given to existing medical schools. The remaining 1000 places have now been allocated after a bidding process run by HEE and the Higher Education Funding Council for England.

Ian Cumming, HEE’s chief executive, said the allocation of places was prioritised in areas “with a relative shortage of doctors overall, or in certain specialties, and also to widen the social

profile of new medical students.”

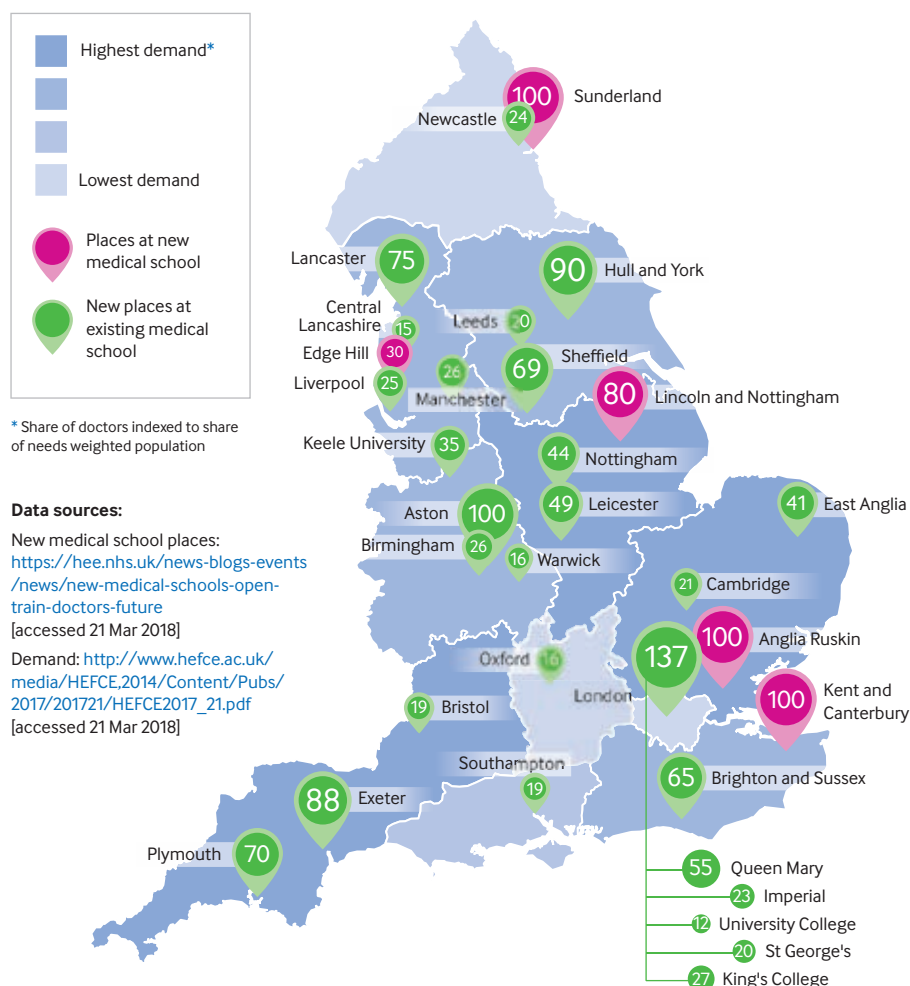
Overall, the south and south east of England are receiving the largest rise in student numbers, with 200 places, 100 of which went to a joint bid by the Universities of Kent and Canterbury Christ Church.

Excluding London, which received 137 extra places, the north east (including Leeds) received the smallest allocation of 144. HEE figures in 2017 showed that the north east had a sufficient number of doctors per weighted population.

Abi Rimmer, *The BMJ*

Cite this as: *BMJ* 2018;360:k1328

Allocation of new medical school places







THE BIG PICTURE

Hard truths

This image of a malnourished patient at a state run psychiatric hospital in Barquisimeto, Venezuela, has featured in an exhibition of work by five *New York Times* photojournalists, held at Sotheby's in London.

The image is one of several taken by Meridith Kohut illustrating the impact of Venezuela's severe economic crisis on psychiatric patients. At the invitation of doctors she visited six psychiatric hospitals to report on shortages of medicine, equipment, and even food.

The Hard Truths exhibition, which was displayed at Sotheby's St George Street gallery on 17-18 March at the start of a global tour, includes 60 photographs from five journalists, who often risked their lives to bring back vivid eyewitness accounts and images to highlight social and political upheaval around the world.

Ivor Prickett spent more than a year photographing the military campaign to reclaim Iraq's second largest city, Mosul, from Islamic State; Daniel Berehulak photographed the repercussions of President Rodrigo Duterte's drug crackdown in the Philippines; Newsha Tavakolian showed the uncertainty and desperation faced by Iranians under pressure from their own government and western powers; and Tomas Munita captured the transition and change faced by a nation as years of Cuban isolation end.

The exhibition is a collaboration between the *New York Times* and the Foundation for the Exhibition of Photography and is curated by the photographer Arthur Ollman and the newspaper's international picture editor, David Furst. It is also expected to visit Spain, France, Japan, and Australia on a two year tour before returning to London.

Ingrid Torjesen

Cite this as: *BMJ* 2018;360:k1405

The mental health responses to major incidents

Events such as the Grenfell Tower fire are particularly challenging for local services

The psychological effect of major incidents on those involved, witnesses, and communities is often substantial.¹ Many people develop post-traumatic stress disorder (PTSD) and other trauma spectrum disorders, and the prevalence of common mental health problems rises.¹ PTSD and other mental health sequelae impair social and occupational functioning,² affecting not only individuals but potentially the wider community.

NICE recommends consideration of a screen and treat approach to major incidents,³ such as took place after the 2005 London bombings.⁴ This requires identification of those affected and assessment for PTSD and other psychological sequelae. Evidence based interventions, such as trauma therapies,⁵ are then provided for those in need. Individuals are often reluctant to seek help for mental health problems after a disaster,^{4,6} and screen and treat programmes reach those who would not otherwise receive care.⁴

Such programmes are underway after the four London terrorist attacks (Westminster, London Bridge, Finsbury Park, and Parsons Green), the Grenfell Tower fire, and the Manchester Arena bombing in 2017. However, the programmes have substantial differences, highlighting the two broad types of major incident. Of the six incidents, five were disseminated events. Victims and witnesses lived well beyond the location of the incident. Coordinating an outreach programme for people who are widely scattered and ensuring

Screen and treat programmes reach those who would not otherwise receive care

they have access to assessment and treatment is challenging, and can only be done centrally.

By contrast, the Grenfell Tower fire was a centred event. Most of those affected lived relatively close to the tower, although the bereaved and some witnesses are more widely scattered, including emergency workers and volunteers. In contrast to the other five incidents, strong social connections exist between many of those affected. The ongoing and considerable disturbance to the community has implications for planning for community recovery. Here, the challenge is mounting an adequate local response. The fire required a large scale evacuation of the tower and nearby residential blocks.

Burden on local resources

The treatment element of screen and treat strategies also differs for disseminated and centred events. After disseminated events, those affected will be treated mainly by their local mental health service, which will usually have few affected individuals. So the treatment load can be dealt with through a modest enhancement of business as usual. That is not the case in a centred event such as Grenfell Tower, where the local services and voluntary

sector providers have had to expand rapidly to meet demand.

Ensuring those resources are available when needed and can be rapidly deployed is a challenge for national planning. It is wasteful to keep valuable human resources waiting for an unforeseeable event, but it is difficult to free up existing resources at short notice. We have major concerns about whether a smaller service provider than ours, or several smaller providers in areas where provision is fragmented, would be able to meet the demand associated with a major centred incident.

Most centred events in the UK are related to flooding, which when severe is accompanied by considerable community disruption.^{7,8} The mental health implications of flooding have, until recently, attracted less attention than terrorist events, perhaps because death rates tend to be low.⁹ Nevertheless, those affected by flooding are at increased risk of PTSD and other common mental health problems.⁷ With housing development pressures and climate change, the risk of flooding is predicted to increase.¹⁰

In planning for mental health responses to major incidents, at central and local level, it is vital planners take into account the differing demands of centred versus disseminated events. Central government has given guidance to the NHS and other agencies on how to plan for flooding in terms of mental health, and those plans would, of course, apply in large part to other centred events.¹¹ It is important for local and regional health providers and planners to ensure they have robust plans in place to respond to a centred event and that those plans include an effective, potentially large scale, mental health response.

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Bereaved families console each other after the Grenfell Tower fire



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Destruction of healthcare in Eastern Ghouta

The international community needs to act urgently to protect civilians

Systematic attacks on hospitals, patients, doctors, and civilians in Eastern Ghouta, Syria, have killed nearly 1600 civilians and resulted in the internal displacement of more than 50 000 people since the military offensive launched on 18 February.^{1,2} This is just the latest episode in a campaign adopted by the Syrian government and its allies to use healthcare as a weapon of war, in total disregard of international humanitarian law.³ The apathy of world leaders and failure of the international system to halt attacks further deepens this humanitarian crisis. Healthcare continues to deteriorate dramatically, and those who are internally displaced have little or no access to shelter, safe water, or waste management.²

The 400 000 inhabitants of the Damascus enclave have been under siege since a nerve agent, sarin, was used in a chemical attack in 2013.⁴ Residents have since faced a severe shortage of food and medical supplies, wartime inflation, and scarce access to healthcare. Despite the UN Security Council Resolution 2401, passed on 24 February, calling for a 30 day cessation of hostilities to allow aid deliveries, civilians continue to be targeted and humanitarian aid is still blocked. A WHO official reported that 70% of the supplies of an aid convoy were removed on inspection by Syrian officials, including trauma, surgical and dialysis kits, and insulin.³ Health partners on the ground advise that more than a thousand people are in urgent need of medical evacuation in Eastern Ghouta as of March 2018.⁵

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Health system near collapse

Doctors and health professionals warn that the healthcare system is “near collapse” and will cease to exist under the current circumstances. In February, there were 43 incidents in which the Syrian healthcare system was targeted, 28 in Eastern Ghouta.⁸ These led to the destruction of 22 hospitals in just one week,⁹ with 19 out of a total of 20 facilities supported by Médecins Sans Frontières evacuated or destroyed from the start of the escalation to 21 March 2018.^{1,10} The humanitarian blockade exacerbates the already precarious situation of access to medical assistance for critically ill patients. The few facilities that remain in operation are overwhelmed by the number of war casualties, in addition to treating existing patients with chronic diseases or previous injuries.

The events unfolding in Syria, and particularly Eastern Ghouta, are setting a dangerous precedent in terms of attacks on healthcare and accountability for such attacks. The UN has failed to protect civilians and aid has been politicised, with the Syrian government restricting the entry of life saving treatments, and the Russian government vetoing resolutions that could facilitate an end to the attacks.⁵

Disruption to healthcare services, including a pattern of attacks on

Health professionals globally have a responsibility to advocate strongly for the cessation of attacks, the delivery of aid, and safe evacuation

facilities and the detainment of healthcare providers, has been common throughout the Syrian conflict. Physicians for Human Rights has confirmed a total of 492 attacks on facilities and 847 deaths among medical personnel from the beginning of the conflict to 2017.¹¹ The conflict has led to an exodus of healthcare professionals; a UN official reported in 2016 that nearly 70% of Syria's medical personnel had left.¹² The “weaponisation of healthcare,” as termed by the Lancet Commission on Syria, describes these tactics.³

Repeated failure

The health catastrophe further highlights the repeated failure of the international community to protect civilians, and of the UN to enforce resolutions to prevent further targeting of civilians. In the face of the acute humanitarian crisis and war crimes being committed in Eastern Ghouta, and elsewhere in Syria,¹⁵ health professionals globally have a responsibility to advocate strongly for, first, the cessation of attacks on healthcare facilities, personnel, and civilians; second, the unobstructed delivery of medical and humanitarian aid to civilians; and third, the evacuation of the most critically unwell patients, and granting safe passage to those civilians wishing to flee.

The plight of civilians in Eastern Ghouta is a clarion call to all parties involved in the conflict to uphold international humanitarian law. It is also a call for a restructuring of the UN Security Council, to enable it to intervene effectively for peace and hold those responsible for war crimes accountable. Otherwise, the tragedy we are witnessing may become the norm rather than the exception in conflicts worldwide.

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Genomics can only be an aid to diagnosis, not a replacement

Doctors will need to develop their skills to make the most of genetic information for diagnosis and treatment—and sooner than we might think, finds **Ingrid Torjesen**

General practitioners' diagnostic skills are going to be needed for less than 18 years, if you believe Jeremy Hunt.

The Health and Social Care Secretary suggested to a fringe meeting at the Conservative party conference in 2015 that the ability to look at genes to diagnose disease and then to select the best possible treatment would render conventional skills obsolete within 20 years. "What this will mean is we can identify problems before they're symptomatic and therefore have a much better chance of tackling them," he said.

It's a nice idea, say experts, but genomics is not that straightforward. It will become a useful tool for clinicians to speed up diagnosis and guide treatment, but doctors are likely to need new skills to make best use of the information—and soon.

From October a large number of genetic tests in the NHS will move to whole genome sequencing, says Mark Caulfield, chief scientist at Genomics England, the not-for-profit company established to deliver the

Genomics based care should be standard for cancer and rare disease patients, says England's chief medical officer Sally Davies

100 000 Genomes Project. The shift will capitalise on the project he told a meeting at the Royal Society of Medicine in London on 2 February.

Non-coding DNA

The 100 000 Genomes Project was set up in 2012 to sequence 100 000 whole genomes from NHS patients with rare diseases and cancer, to identify genes implicated in their conditions. Initially patients were drawn only from England, but the project is now UK-wide.

Every cancer patient recruited contributes two genomes (one from a healthy cell, one from a tumour cell), and the genomes of patients with rare diseases are, where possible, compared with those of their parents (trio genome comparison).

Unfortunately, genomics is rarely as simple as a single gene determining whether a person is susceptible to a particular disease. Genes tend to work together, and their activity is influenced by a variety of environmental and other factors.

Furthermore, whole genome sequencing has shown that the 20 000 genes coding for proteins represent less than 5% of the genetic information in the human genome. About half of the remaining DNA is unique sequence and the other half is repeated sequence, and all this information has an important role in influencing, regulating, and controlling the expression of the genes.

The 100 000 Genomes Project has focused almost exclusively on interpreting the protein coding sequences, says Dominic McMullan, head of the germline programme at Birmingham Women's and Children's

NHS Foundation Trust. "It is incredibly challenging to look at non-coding sequences, and we are going to need hundreds of thousands of trio genomes for different conditions before we really start to delve into what could be going on in non-coding sequences," he told the meeting.

Rare diseases and cancer

The project has so far sequenced 50 000 genomes, the majority from patients with rare diseases and their relatives. Most of these patients have had genetic testing but not a diagnosis. Patients with a rare disease currently face five doctors, three misdiagnoses, and four years before diagnosis, which is distressing for them and a waste of NHS resources.

Whole genome sequencing typically shows that around 400 of the 20 000 coding variants in their genome are rare and functional. Applying a gene panel of variants seen previously in patients with similar conditions highlights any likely relevant variants (usually 10-20) and, finally, a comparison with the genotypes of unaffected parents allows rare inherited variants to be excluded to pinpoint any genes of likely diagnostic importance.

Caulfield says that in 23% of cases the analyses highlight actionable variants—for example, indicating that a certain treatment will or will not be effective. He adds that evidence suggests "that revisiting your data annually could raise diagnostic yield by a further 20%" as more is learnt about the role of specific genetic sequences.

Whole genome sequencing has proved more challenging in





100 000 GENOMES PROJECT IN NUMBERS

50 000 genomes have been sequenced

Each genome contains around 3.2 billion letters of coding

Each genome encodes about 20 000 genes

The raw data of a genome take up 200 GB of memory

13 genomic medicine centres have been established across England

Fast tracked samples can be sequenced in 11.8 days

Cost of whole genome sequencing is less than £1000 and falling

cancer. A sample of tumour tissue is taken either when the tumour is excised or by biopsy but needs to contain sufficient cancer cells and be preserved appropriately. Traditionally, samples have been fixed in formalin and embedded in paraffin (FFPE) to preserve cellular architecture for pathology, but this damages the DNA, so protocols now require part of the tumour sample to be “fresh frozen.”

It is important to do this in all suspected cases, emphasises Nirupa Murugaesu, consultant medical oncologist at St George's University Hospitals NHS Foundation Trust and clinical lead for molecular oncology at Genomics England, so that the tissue can be sent for sequencing if cancer is confirmed.

So far around 132 “potentially actionable genes” have been identified in cancer. This means that they contain small coding variants for which there is a reported or potential therapeutic or prognostic association and that could make a patient eligible for a particular treatment on the NHS or to enter a clinical trial.

Reducing overtreatment

Sequencing a genome now costs less than £1000, and this will continue to fall as the process is automated further, Caulfield says.

Sequencing used to take months, but fast track samples are now being returned in an average of 12 days, and the aim is to achieve a median turnaround of six weeks for all samples. The target is six weeks because that is how long a patient usually waits between surgery and starting adjuvant chemotherapy, and

From October, a large number of NHS genetic tests will move to whole genome sequencing

the genomic results might influence the choice of treatment.

“We know that we are massively overtreating our patients,” Murugaesu told the meeting. “In the common tumour types such as breast or lung cancer sometimes you may treat 100 patients for five patients to have benefit. The hope is that in due course we will have better predictive and prognostic identifiers,” so that patients will not need to be exposed to the adverse effects of chemotherapy if they are unlikely to benefit.

Routine NHS data from hospital records are also being aligned with the patient's genomic data “to get greater value” from them, Caulfield says. For example, analysis may show that someone with a neuromuscular disorder who received intensive physiotherapy lived years longer than a patient who received none.

The UK is the first country to implement whole genome sequencing technology for routine diagnosis, antibiotic resistance profiling, and surveillance for tuberculosis. More than 3000 multidrug resistant *Mycobacterium tuberculosis* isolates have been sequenced, and clinicians are now receiving a drug resistance profile within 24 hours of submission, far faster than conventional cultures, Caulfield says.

Generation genome

Last year's annual report from the chief medical officer for England, Sally Davies, *Generation Genome*, focused on how genomics will be rolled out in the NHS. “Patients with cancer or a rare disease should have access to genomics based care, and health and care professionals should consider this

as a standard part of their approach,” Davies said. Her report says genomics should be embedded in all elements of the NHS, from screening to treatment, and achieving this will require genomics training to be provided to the next generation of doctors and offered to existing ones.

“There are large numbers of people to educate and train, but there aren't huge numbers of people with the requisite skills and knowledge to impart that to their mainstream colleagues,” says Katrina Tatton-Brown, consultant in clinical genetics and reader in clinical genetics and genomic education at St George's University Hospitals NHS Foundation Trust, so online courses will be important.

She outlines three short courses for continuing professional development available on the FutureLearn platform: an introductory course, “The genomics era: the future of genetics in medicine,” which explains the basics of genetics and how it is involved in disease; and two higher level courses on genomic technologies in clinical diagnostics: molecular techniques and next generation sequencing. Clinicians, allied health workers, and managers can also access Health Education England funded postgraduate programmes (MSc, PGDip, PGCert) in genomic medicine.

A lot of clinicians are not requesting or receiving any genomic data yet, Tatton-Brown says, “so they don't realise they need to have the knowledge to interpret it robustly for their patients.”

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