this week

CARE.DATA IS SCRAPPED $p\,86$ CHILCOT ON INJURED SOLDIERS $p\,88$



NICE: treat signs of sepsis urgently

Doctors should treat patients with suspected sepsis with the same urgency as those who present with chest pains, says new guidance from the National Institute for Health and Care Excellence.

Health professionals need to think about the possibility of sepsis in far more patients, said NICE in its evidence based guideline for identifying and treatment sepsis.

Saul Faust from the University of Southampton, who chaired the guideline group, said, "Sepsis can be difficult to diagnose with certainty. We want clinicians to start asking, 'Could this be sepsis?' much earlier on so that they can rule it out or get people the treatment they need."

He added, "Just like most people with chest pain are not having a heart attack, the majority of people with an infection will not have sepsis. But if it isn't considered then the diagnosis can be missed."

The guideline says that in hospitals patients with suspected sepsis who meet at least one high risk criterion should have a venous blood test. If suspected sepsis is not excluded in one hour, they should then be given a broad spectrum antibiotic at the maximum recommended dose.

Outside hospital, patients who meet any high risk criterion should be transferred

to hospital immediately, usually by ambulance, and secondary care should be alerted. If transfer times are more than an hour, GPs and ambulance services should give antibiotics, the guideline says.

The guideline sets out detailed criteria for high risk signs, which fall into the domains of altered mental state; raised respiratory rate or new need for oxygen to maintain oxygen saturation; raised heart rate; low blood pressure; urinary retention for 18 hours; and mottled or ashen appearance.

Patients with two or more moderate to high risk criteria and lactate concentrations over 2 mmol/L or evidence of acute kidney injury should be treated as being at high risk. "Moderate to high risk" criteria include deterioration of functional ability; impaired immune system; trauma, surgery, or invasive procedure in the past six weeks; tympanic temperature less than 36°C; and signs of potential infection.

Ron Daniels, chief executive of the UK Sepsis Trust, said, "We must act decisively to save many of the thousands of lives claimed every year." The trust said that each year the UK has around 150 000 cases of sepsis and 44 000 deaths.

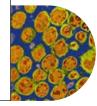
Ingrid Torjesen, London

Cite this as: BMJ 2016;354:i3906

"Sepsis is a condition whose time has come"—Ron Daniels, chief executive of the UK Sepsis Trust

LATEST ONLINE

- Staff shortages are impeding efforts to improve cancer outcomes in England
- UK social care faces "bleak" future without urgent funding injection
- US regulator stops leukaemia treatment trial after three patients die



the **bmj** | 16 July 2016

SEVEN DAYS IN



Controversial database of medical records is scrapped

The UK government has scrapped the controversial data sharing programme care.data after expert reviews called for better security provisions and new patient opt-outs for the use of personal information. The reviews were published on 6 July by the national data guardian, Fiona Caldicott (left), and the Care Quality Commission (CQC).

Caldicott recommended a new consent model to build public trust around sharing of confidential data and for all health and care organisations to enact 10 new data security standards. She also recommended stronger sanctions to protect anonymised data, including criminal penalties for "deliberate and negligent re-identification of individuals."

Caldicott highlighted concerns over data security breaches and said that she had been frustrated that there had been "little positive change" in the use of data across health and care since her review in 2013. She said that the latest report was designed to improve patient choice, make organisation leaders more accountable for data, reduce system vulnerabilities, and support healthcare staff. "We owe it to citizens to enable them to understand data usage as fully as they wish and to ensure that information about how data is accessed, by whom, and for what purpose is available," she said.

ANALYSIS, p 95; EDITORIAL, p 93

Matthew Limb, London Cite this as: BMI 2016;354;i3804

Regulation

Health and care staff could have single register

The body that oversees the major regulators of UK health professionals is considering a single register to stop people who have been struck off from practising under a different title. The lead officers of the Professional Standards Authority appeared before the parliamentary health committee for a one-off evidence session, last week to answer questions about the authority's performance, as well as that of the professionals' regulators. (Full story doi:10.1136/bmj. i3775)

GPs can play key role in child protection

The regulator the Care Quality Commission said that healthcare staff and leaders need to do more to identify and listen to children at risk of harm. The regulator reviewed child protection cases and found variable involvement, particularly of staff in primary care, with no GP contribution at all in many cases.

News from the US

Sexual misconduct among doctors often overlooked

Sexual misconduct by doctors is common in the US but its extent is hard to determine because of a lack of transparency by state medical boards, an investigation found. The Atlanta Journal-Constitution newspaper found that, in the state of Georgia, two thirds of doctors disciplined for sexual misconduct were permitted to practise again. US state medical boards often keep penalties secret, use vague language in public documents, and allow doctors to avoid disciplinary actions, it found. (10.1136/bmj.i3845)

Research

Nursery policies may encourage antibiotics

Nursery policies excluding children with acute infective conjunctivitis until they recover or have been treated can mean that GPs are pressured into prescribing unnecessary antibiotics, a UK audit found. Public Health England recommends that these children need not be excluded, but the audit of 164 childcare providers'

sickness policies found that 86.7% said they should be kept at home, and almost half required them to be treated with antibiotics before returning to nursery. (10.1136/bmj.i3754)

New genetic testing pathway for ovarian cancer

A new gene testing pathway for women with ovarian cancer, which offers genetic testing at a routine cancer clinic appointment, could save the NHS £2.6m a year because it reduces appointments at genetics clinics

from 13 000 a year to
1000. Of the 207
women with ovarian
cancer who had
gene testing in a
pilot study 33 (16%)
were found to have

a BRCA mutation. For each patient identified, on average three family members also decided to see a geneticist to discuss the implications for them. (10.1136/bmj.i3900).

Most pregnant women do not need supplements

Multivitamin and mineral supplements are not needed by most pregnant women and are an unnecessary expense, a review by the *Drug and Therapeutics*



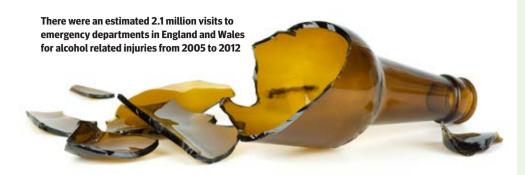
Bulletin concluded. It found that marketing claims did not translate to better outcomes for mother or baby. It recommended that women focus on improving their overall diet and taking folic acid, which had strong evidence for reducing neural tube defects, and vitamin D supplements, although the evidence for these was less clear cut. (10.1136/bmj.i3821)

NHS services

Congenital heart units set to close

Specialist heart services at the Central Manchester, Leicester, and Royal Brompton hospitals are due to be closed under new proposals, and care will focus instead on centres of excellence that meet tough new standards. NHS England said that the changes were necessary to ensure consistently high quality services across England for patients with congenital heart disease. (10.1136/bmj.i3807)

MEDICINE



Public health

Alcohol duty rise may help cut violence

A small increase of just 1% above inflation in the duty imposed on alcohol sold in retail outlets, pubs, and restaurants could reduce violence related emergency department attendances by 6000 a year across England and Wales, a modelling study estimated. This approach may be more effective at reducing injuries sustained through violence than minimum unit pricing for alcohol, the researchers said. (10.1136/bmj. i3829)

Rsiperdal lawsuit

J&J is ordered to pay \$70m in gynaecomastia case

Johnson & Johnson's Janssen Pharmaceuticals division was been ordered by a Pennsylvania court to pay \$70m (£54m) in damages to a young man who developed size 46DD breasts after taking the company's antipsychotic drug risperidone (which it markets as Risperdal). Andrew Yount, 18, of Tennessee, began taking the drug when he was 5 years old, though it was not approved for use in children. The jury found that Johnson & Johnson knew that the drug carried a risk of gynaecomastia in men and boys but had "intentionally falsified, destroyed, or concealed

records" to hide the link. (10.1136/bmj.i3846)

Politics

All areas of government must tackle causes of ill health

Politicians and health experts called for cross government action to tackle the causes of poor health and warned of the impact of myopic funding cuts. Their report said that the link between a difficult childhood (as a result of deprivation or abuse, for example) and psychosis in later life was about as strong as the link between smoking and some types of lung cancer. (10.1136/bmj.i3793)

National Health Action chair resigns

Clive Peedell (below), the consultant oncologist and cofounder of the National Health Action Party, resigned from his position as party leader.
Peedell helped establish the party in 2012 to campaign

in support of the NHS
and against the
government's
stewardship of the
health service.
Peedell said,
"I can no longer
take things forward
due to irreconcilable
differences of
opinion within the
[party] executive."

Cite this as: *BMJ* 2016;354:i3874

SCHOOL SEX SURVEY

of 900 16 to 24 year olds) who responded to a survey 27% (243) said they did not receive any information on HIV during sex and relationship classes at school

SIXTY SECONDS ON...ROAD TRAFFIC CRASHES

THAT'S A CHEERY TOPIC

A report from the US Centers for Disease Control and Prevention has compared the incidence of vehicle crashes in 19 high income countries and has found—wait for it—that the UK is good at something.

GOOD AT CRASHES—HARDLY SOMETHING TO CHEER ABOUT

What I meant was that the UK is good at preventing crashes. The UK has the world's second lowest death rate from vehicle crashes (2.8 per 100 000 population), after Sweden (2.7). The US has the highest death rate of the 19 countries, at 10.3. Each year the US has more than 32 000 deaths and two million non-fatal injuries on its roads.

AT LEAST THE UK IS STILL CLASSED AS A HIGH INCOME COUNTRY

I don't think you're taking this seriously. The UK has a good record on crash prevention in comparison with other countries. Some 16% of road deaths in the UK have alcohol as a contributory factor, half the 31% in the US, the highest rate of all the 19 countries. This compares with 29% in France.

GIVEN THE UK COUNTRIES' PERFORMANCE IN THE EUROS IT'S GOOD TO KNOW WE'RE A WORLD LEADER IN SOMETHING

We're a bit slow, but that's a good thing in this context. The UK (and Ireland) has the lowest rate of road deaths caused by speeding, at just 15%. Finland has the highest, at 42%, followed by Denmark at 40%. The UK also has good seatbelt use: 95% of passengers in the front wear a seat belt and 88% in the back. In the US only 87% of passengers wear a seat belt in the front and 78% in the back.



OH WELL, ACCIDENTS WILL HAPPEN, I SUPPOSE

The report says that the Swedish approach to road safety decrees that there is no such thing as an "accident." No loss of life on the road is

acceptable, all humans make mistakes, and traffic injuries are preventable. Responsibility for crashes is shared among road users and "system providers"—car manufacturers, road builders, and the police.

Anne Gulland Cite this as: BMJ 2016;354:i3833

the**bmj** 16 July 2016

More doctors are engaged in commissioning under CCGs

Clinical commissioning groups have secured better clinical engagement than previous forms of commissioning in England but need greater support from politicians to make "tough prioritisation decisions," a new report has found.

The study by the healthcare think tanks the King's Fund and the Nuffield Trust looked at how six CCGs had developed GP led commissioning since 2013 and surveyed GP leaders and members in these groups over four years.

Increased engagement

Some 70% of the CCG members polled said they felt at least "somewhat" engaged with the work of their local group between 2013 and 2016. This compared favourably with the results of similar surveys conducted in the past under practice based commissioning, including a 2009 poll where more than half of clinicians said that they were "not at all" or "not very" engaged.

Four fifths (83%) of GPs and practice managers surveyed for the latest report said that they viewed CCGs as an influential part of their local health economy.

Political support lacking

The report's authors said that the introduction of CCGs had improved relationships between practices and increased the review of comparative data. But the report said that financial pressures meant that CCGs "are frequently required to take tough prioritisation decisions, and many do not feel they have the support from politicians and NHS England to keep the public on board as they do this."

Gareth lacobucci, *The BMJ*Cite this as: *BMJ* 2016;354:i3875



Soldiers injured in Iraq war were let down by lack of dedicated health facilities

The Iraq war was the first major military operation by Britain after the closure of military hospitals, and it showed up failings in the system devised to replace them, the Chilcot inquiry has found.

Injured soldiers repatriated from Iraq were treated alongside NHS patients at Selly Oak Hospital in Birmingham, part of the University Hospital Birmingham Trust where the Ministry of Defence had established the Royal Centre for Defence Medicine.

The inquiry found nothing to criticise in the care soldiers received but said that they were unhappy at being separated from other soldiers and lacked peer

GMC says it can't force doctors to disclose payments

The General Medical
Council has admitted that
it does not have the legal
power to force doctors
to disclose details of
payments and benefits
they receive from the
pharmaceutical industry—
either on the new database
of the Association of the

British Pharmaceutical Industry (ABPI) or the GMC's own register.

Last week the ABPI published the Disclosure UK database (www. disclosureuk.org.uk) listing details of the fees and benefits in kind paid by the pharmaceutical

industry to doctors, pharmacists, nurses, and healthcare organisations. However, only healthcare professionals and organisations consenting to being identified were named, and the remainder of the data was published in aggregate form.

The ABPI admitted that health professionals overall were willing to declare just 48% of the money paid to them for consultancy work,

DECLARED PAYMENTS Number of doctors declaring payments (% of total):

us = 618931 (66%), uk = 23053 (8.4%)



If casualties in the first phase of the conflict had been more than expected rather than fewer, the system might have been overwhelmed

soldiers could be treated in dedicated wards. The policy had the strong backing of Des Browne, the defence secretary at the time. Progress was being made, Dannatt told Jock Stirrup, chief of the defence staff, but the whole system for dealing with people wounded on operations once they were back in the UK "has been allowed to sink to such a woefully inadequate level that the task to rebuild it . . . is huge."

John Chilcot did not elaborate on these concerns in his report, concluding merely that improvements were made during the course of the conflict. The military managed ward at Selly Oak was established and operational by July 2007. Unlike others involved in the conflict who were subject to strong criticism in Chilcot's 2.6 million word report, he acquits the military medical teams of any failings affecting the care given to injured soldiers. But evidence given to the inquiry showed that it was at times a close run thing and that, if casualties in the first phase of the conflict had been more than expected rather than fewer, the system might have been overwhelmed.

Plans envisaged 157-241 hospital admissions of battle casualties during the initial stages of the conflict; there were in fact 81. A further 152-212 victims of chemical warfare were expected, together with 15% of those exposed to biological weapons, but there were none. Iraq did not possess either type of weapon despite the conflict being launched in the belief among intelligence services that it did.

Nigel Hawkes, London

Cite this as: BMJ 2016;354:i3801

support. By 2006, senior military officers believed that this had become a threat to soldiers' wellbeing: they wanted to be treated in a military environment "within which they can be with their mates, be looked after by named military nurses, and be treated like soldiers," Freddie Viggers, then adjutant general, said in August 2006, three years into the war.

Richard Dannatt, chief of the general staff, visited Selly Oak in December 2006, after policy had been changed so that

travel, and conferences, with some not disclosing everything received and around 30% not consenting to disclose anything. This has prompted renewed calls for publication of such details to be mandatory, as it is in countries such as the United States.

However, the GMC has told The BMJ that it does not have the power to insist that doctors disclose payments. A spokesman said, "We very much hope that every

TOTAL VALUE Total value of records published in 2015:

us = £7.52bn uk = £340m

doctor with a connection to the pharmaceutical industry will take part in the ABPI's new database, and we will be watching to see how it develops. But we do not have the legal power to make participation in the ABPI's database, or any similar scheme, mandatory," he said. "Pharmaceutical

companies, on the other hand, do have the option to decide not to work with any doctor who refuses to consent to disclosure."

GlaxoSmithKline has stated that it will no longer work with healthcare professionals who refuse to declare their payments. Ingrid Torjesen, London

Cite this as: BMJ 2016;354:i3806

FIVE MINUTES WITH...

Chris Harrison

England's new cancer tsar outlines why a new public campaign is targeting lung cancer alongside heart disease and respiratory disease

he campaign is aimed at raising awareness of respiratory symptoms such as unusual cough lasting for three weeks or more or breathlessness that might leave someone unable to do their normal activities.

"The reason for launching is so that people with those symptoms are aware of the need to consult a doctor and get medical advice, because it might be due to heart disease, respiratory disease, or lung cancer. The earlier those symptoms are assessed and possible treatment is given, the more treatable those conditions are. It is a new approach to focus on multiple conditions. It recognises that from a patient or member of the public's point of view, they have symptoms rather than diseases, and those symptoms can be due to a whole range of conditions."

Improving diagnosis

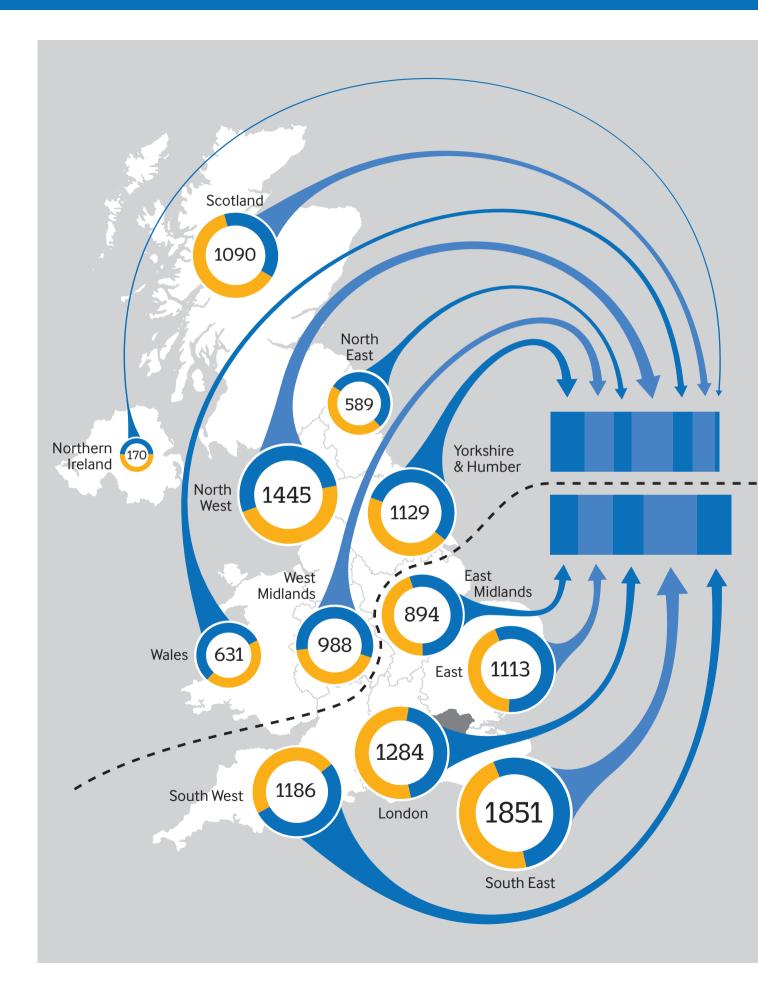
"We still have something like 37 000 new cases of lung cancer each year in the country, and one year survival for lung cancer remains very low at about 30%. A large proportion of people with lung cancer still have their diagnosis made after an emergency admission, so it remains a condition where there is a lot to do to improve survival. We also know that heart disease and obstructive respiratory disease continue to cause many admissions to hospital, so not only is there an opportunity to improve survival for cancer, but there's an opportunity to treat people earlier, improve their quality of life, and perhaps avoid unnecessary admissions to hospital in the future."

Better survival rates

"This campaign is one of the crucial aspects of the implementation of the national cancer plan because we know the differences between England and other countries in terms of survival from cancer. A lot of that difference relates to

the time at which people seek medical attention—in the UK it is later, and so raising awareness and allowing ease of access to diagnostic tests and GPs is a crucial part of bringing survival rates in the UK up to world class standards."

Interview by Gareth Iacobucci Cite this as: *BMJ* 2016;354:i3831

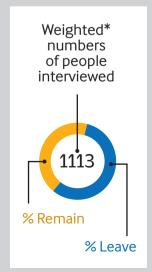


The outcome has been unfairly blamed on the working class in the north of England. However, most people who voted Leave lived in the south of England

Total interviewees voting to leave the FU:

The north 3097

The south 3319



*Data from Lord Ashcroft polls—who surveyed 12 369 people on referendum day after they had voted, and weighted for sample bias: http://bmj.co/lap

Brexit: the decision of a divided country

Blame austerity not immigration for the inequality underlying the referendum decision

Brandishing the slogan "Vote leave, take control," the Leave campaign secured 51.9% of the European Union referendum vote.

The outcome has been unfairly blamed on the working class in the north of England, and even on obesity. However, because of differential turnout and the size of the denominator population, most people who voted Leave lived in the south of England.

On the day of the EU referendum, data released from the Office for National Statistics show there had been 52 400 more deaths in the year to June 2015 compared with the year to June 2014. Death rates in England and Wales rose overall by 9%. The biggest increases were among older adults and were unprecedented. They were attributed to dementia and Alzheimer's disease, with influenza being suggested as a contributory factor. Austerity had a major role, with people who had long term care needs dying earlier. The health and social services crises will deepen as national finances deteriorate and as it becomes harder to recruit and retain staff from the European mainland.

Most migrants to the UK have good health and settle in poorer areas. The only adult age group to see improvements in death rates in the year to mid-2015 were those aged 25-29. The mid-year estimates released on 23 June 2016 showed that this was the age group of highest net immigration to the UK. The UK has benefited greatly from the immigration of healthier than average young adults, educated at someone else's expense; many of them work in our health, educational, social, and care services. Their arrival reduced heath inequalities and improved our overall health.

The underlying reason for worsening health and declining living standards was not immigration but ever growing economic inequality and the public spending cuts that accompanied austerity. Almost all other European countries tax more effectively, spend more on health, and do not tolerate our degree of economic inequality. To distract us from these national failings, we have been encouraged to blame immigration and the EU. That lie will now be exposed.

Danny Dorling, Halford Mackinder professor of geography, School of Geography and the Environment, University of Oxford

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thebmj.com

• Read this Editorial in full (*BMJ* 2016;354:i3697)

Almost all other European countries tax more effectively, spend more on health, and do not tolerate our degree of economic inequality.

To distract us from these national failings, we have been encouraged to blame immigration and the EU

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Chilcot: physical and mental legacy of Iraq war

Long term consequences for UK service personnel remain unknown particularly for "unexpected survivors"

he Chilcot report focused on the legitimacy of the UK going to war in Iraq.¹ But the UK citizens most directly affected by the war were members of the armed forces and their families. A total of 179 British service personnel were killed in the conflict, and many more received life changing physical and mental injuries. TheUK Ministry Of Defence reports a total of 5970 casualties, including deaths up to July 2009.²

In April 2003 the ministry commissioned an independent study of the health and wellbeing of Iraq war veterans. This study, now completing its third wave of data collection, compared military personnel who had or had not been to Iraq, and found no new "Iraq war syndrome"3; no significant increase in probable post-traumatic stress disorder (PTSD) or common mental health disorders: and only a modest increase in alcohol misuse. There were, however, increases in mental health problems, including PTSD and alcohol misuse, among men who had been in combat roles.4

Reports of probable PTSD were more common among reservists who served in Iraq (6%) than those who did not (3%). This was associated more with difficulties experienced on returning home than the deployment itself, and remained evident five years later. As the Ministry of Defence intends to increase the use of reservists in future, this is a concerning finding.

Although there were many reasons for the apparent resilience of UK forces, ⁷ Chilcot highlights some "major developments in mental health care" as possible contributors: psychological decompression when personnel returned home, a specific reservists mental health programme, NHS community mental health programmes for veterans, and the rolling out of the trauma risk management (TRIM) programme (Chilcot 16.4, 45).¹



87% of casualties sustained extremity injuries, including traumatic amputations and loss of multiple limbs

Behavioural consequences

Despite these improvements in care, deployment had behavioural consequences for returning veterans and their families. More than 20% of recent returnees exhibit risky driving, ⁸ linked to higher death rates from motor vehicle crashes; and increases in both self reported violence⁹ and official convictions for violent offences¹⁰ are strongly linked to probable PTSD and alcohol misuse. Chilcot notes that mental health remains an important future concern and will require vigilance in future deployments (Chilcot 16.4, 43).¹

Turning to physical care, the extensive use of improvised explosive

Neil Greenberg, professor, King's Centre for Military Health Research, King's College London Anthony Bull, professor, Royal **British Legion Centre** for Blast Injury Studies, Imperial College London Simon Wessely, chair of psychological medicine, King's College London simon.wessely@ kcl.ac.uk

devices in the Iraq and Afghanistan conflicts led to a different pattern of injury from that seen in previous wars. Explosions accounted for 79% of troops killed or wounded in action from 2003 to 2008; 87%¹¹ of casualties sustained extremity injuries, including traumatic amputations and loss of multiple limbs.¹² Chilcot accepts that many survived because of advances in care made during the conflicts, noting an increase in the number of "unexpected survivors" who might have died from their severe injuries only a few years earlier.

Progress was made in many areas, including improved personal protective equipment for troops, innovations in prehospital care, expedited casualty evacuation, and new in-hospital resuscitation protocols optimised for battlefield trauma. ¹³ But long term outcomes for these unexpected survivors remain unknown.

The Royal British Legion Centre for Blast Injury Studies at Imperial College London and the King's Centre for Military Health Research, together with military colleagues at Headley Court, are now collaborating on the Armed Services Trauma Rehabilitation Outcome Study (ADVANCE) study, 14 which will assess the physical, social, and psychological challenges faced by survivors of the most serious injuries over 20 years.

Chilcot concluded that the "Ministry of Defence planned and prepared effectively to provide medical care in support of Operation Telic" and substantially improved the provision of medical, mental health, and rehabilitative care during the course of the conflict. But nothing will remove the enduring effects of the deaths and the physical and psychological injuries. The true legacy of the conflict for individuals and wider society in both the UK and Iraq may not be evident for many years to come.

Find this at: http://dx.doi.org/10.1136/bmj.i3842

EDITORIAL

Using NHS data to improve health

Data guardian demands much more extensive dialogue with public

he information in health records has great potential to improve the delivery of healthcare and to advance medical research. But the public and healthcare professionals must have confidence that access to patient data is appropriately managed. Two reports published last week take an important step towards this goal.¹²

Last September, the health secretary commissioned the Care Quality Commission (CQC) to review current approaches to data security across the NHS and, in parallel, asked the national data guardian, Fiona Caldicott, to develop data security standards and a method of ensuring compliance. Caldicott was also asked to recommend a new consent model for data sharing in the NHS and social care. Both reports were published on 6 July and led to the immediate closure of the NHS England's controversial data sharing programme care. data.23

Data security

Both new reviews found widespread commitment to keeping data secure across the NHS but also found instances of poor practice.12 They highlight the importance of removing outdated computer systems, but the key priority is strong leadership (see box 1 on thebmj. com). Caldicott sets out 10 standards to be applied in every health and care organisation to address three causes of data A national cradle-tograve dataset, including information from 55 million people, opens important opportunities breaches: people, processes, and technology.

She also calls for tougher sanctions for malicious breaches of data security. The government plans to introduce criminal penalties for people who intentionally use anonymised data to re-identify individuals, a welcome move to help demonstrate trustworthiness.

New model of consent

Caldicott also considers how to help people make informed choices about data sharing. This is essential. A study commissioned by the research funding body Wellcome Trust this year found low awareness of how data are used within the NHS, let alone by academics or commercial organisations.7 There was much confusion about terms such as anonymisation and identifiable data. The research showed that the more informed people were, the more likely they were to approve of health data being used for other purposes, provided there was clear public benefit. Most people were

extremely wary of insurance and marketing companies using

any kind of health data. Caldicott therefore rightly calls for

a much more
extensive
dialogue with
the public about
how health
information is
used. This will
be taken forward
by the National
Information

Board and a new independent taskforce, to be hosted

at Wellcome.⁸
Caldicott also proposes a
new opt-out model to give people
a clear choice about how their
personal confidential information

is used (see box 2 on thebmj.com). A public consultation is now open to consider how to implement the opt-out.

This is a welcome step in the right direction. However, we are still a long way from realising the benefits of better data sharing.

We cannot risk further mistakes like care.data. The decision to abandon it is understandable-the launch of the programme in 2014 met with considerable criticism as a result of poor communications, weak governance processes, and an unclear opt-out mechanism.4 But the NHS cannot afford to wait any longer for better data to inform commissioning and provide the best care. Population level registries in Scandinavia and Scotland have proved highly beneficial both for healthcare and for research, showing what can be achieved. The NHS offers even greater potential. A national cradle-to-grave dataset, including information from 55 million people, opens important opportunities for research that could improve health—for example, to investigate rare diseases or monitor the safety of drugs during pregnancy.

The Caldicott report is about building trust. There is still a long way to go before everyone can have confidence that data are stored and used appropriately across and beyond the NHS. Clinicians have a crucial role, explaining why information must be shared to improve care and research, achieving a balance between protecting privacy while sharing information to improve the health of patients and society, and, above all, championing better uses of data.

Competing interests: NP sat on the advisory board for care.data.

Cite this as: BMJ 2016;354:i3852

Find this at: http://dx.doi.org/10.1136/bmj.i3852

ANALYSIS, p 95



N M R Perrin, head of policy, Wellcome Trust, London n.perrin@wellcome.ac.uk

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THE DEBATE ONLINE AT THEBMJ.COM

Tweeting and rule breaking at conferences

You're at a conference and you hear something that will interest and inform people in the wider world. But then you find that the organisers have banned Twitter. Even those organisers who do want to harness social media can make it easier and more rewarding for delegates, said Trish Groves in an article published last month.

Here are some online responses to Groves's article, including tweets, of course.
Find out more at bmj.co/conferencetweeting



"'Banning' twitter is an incongruous phrase in itself. You aren't banning twitter per se; you are banning the use of twitter to distribute what is perceived to be sensitive information. The problem lies in outdated claims to copyright rather than the social medium itself."

Damian Roland @damian roland



"A ban would be akin to forbidding me to take notes during a talk and the presenter checking my notebook before I leave the room. Science and medicine can be conservative and resistant to change. It's about time we caught up."

Dermot McGuckin @dermotmcguckin



"A ban is a policy on the wrong side of history, almost impossible to regulate effectively and likely to be viewed as a historical argument made by those who failed to recognise the appetite for global communication and the importance of social media for medical professionals."

Stephen J Chapman @SJ_Chapman



Big health data: the need to earn public trust after past management

In the wake of NHS England's decision to close down its care.data programme, **Tjeerd-Pieter van Staa and colleagues** examine how data sharing projects can get better at gaining public support

etter use of large scale health data has the potential to benefit patient care, public health, and research.

The handling of such data, however, raises concerns about patient privacy, even when the risks of disclosure are extremely small.

The problems are illustrated by recent English initiatives trying to aggregate and improve the accessibility of routinely collected healthcare and related records, sometimes loosely referred to as "big data." One such initiative, care. data, was set to link and provide access to health and social care information from different settings, including primary care, to facilitate the planning and provision of healthcare and to advance health science. Data were to be extracted from all primary care practices in England. A related initiative, the Clinical Practice Research Datalink (CPRD), evolved from the General Practice Research Database (GPRD). CPRD was intended to build on GPRD by linking patients' primary care records to hospital data, around 50 disease registries and clinical audits, genetic information from UK Biobank, and even the loyalty cards of a large supermarket chain, creating an integrated data repository and linked services for all of England that could be sold to universities, drug companies, and non-healthcare industries. Care. data has now been abandoned and CPRD has stalled. The flawed implementation of care.data plus earlier examples of data mismanagement have made privacy issues a mainstream public concern. We look at what went wrong and how future initiatives might gain public support.



Why have English big data initiatives not worked?

Key elements for success of big health data projects include public confidence that records are held securely and anonymised appropriately²; public awareness of and engagement with how their personal data have been, or might be, used²; and data being used for high quality science.

Care.data failed to earn the trust and confidence of patients, citizens, and healthcare professionals.² An analysis of opinions reported on Twitter showed that people had concerns about informed consent and the default "opt-in"; trust; privacy and data security; the involvement of private companies; and legality.³ The information campaign about care.data was not clear about how the system

would work, including the opt-out arrangements and the sharing of personal information with commercial organisations, 45 and at times downplayed the potential benefits.

KEY MESSAGES

- Success of big health data projects requires public confidence that records are held securely and anonymised appropriately
- Public support requires that data use is transparent and produces credible science
- The public need to be able to see and share the benefits of big data projects
- Dynamic consent, enabling people to opt out of specific uses could increase support

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This highlights a broader problem about public perception of how data are used and managed. A recent literature review found that many people do not know how patient information is currently used or who can use it. But focus groups found that participants become more accepting of big health data uses after being given more information.

Researchers currently get access to large scale healthcare data (such as CPRD) in England through copies sent to their local computers. This makes it difficult to monitor or control how the data are used, leading to stories of data mismanagement and newspaper headlines such as "Millions of patient records were sold to insurance firms who used it to set their critical illness premiums in a series of unacceptable lapses."8 Concerns have also been expressed by patient groups and in UK parliament about data protection being compromised by data being uploaded to the Google cloud to access more powerful analytic tools.9

Basic anonymisation of information (such as removing names, addresses, and other identifiable information) has been widely used to allay public concerns about use of personal data for research data. However, the challenge with linking different sources of information (such as with care.data or CPRD) is the increasing level of detail in the data and possibility of deductive disclosure. For example, this could occur if a person discloses on social media that they visited their practice on some dates and were admitted to hospital with flu.

Clearly, we need to get public support by including them in developing ways to make better use of health data. Unfortunately, so far, efforts here have been piecemeal. There are research led activities

What has worked elsewhere?

- Large databases in other countries have managed to obtain public support. Unlike the English examples above, the Welsh Secure Anonymous Information Linkage (SAIL) system allows researchers go to the data rather than have the data sent to them. SAIL contains a large number of datasets and a platform for sharing knowledge about using the data. It operates a remote access system providing secure data access for users and data analysis tools.¹⁶
- The Scottish Health Informatics Programme (SHIP) also developed ways for researchers to manage and analyse electronic patient records and associated linked data. SHIP ran a substantial public engagement programme to understand the public's preferences, interests, and concerns about use of health data for research and their acceptance and attitudes towards the aims of the programme. This enabled SHIP to define a transparent and publicly acceptable approach to governance of research with health data.

 The search are search and publicly acceptable approach to governance of research with health data.
- The Canadian Network for Observational Drug Effect Studies (CNODES) uses a system of sending analysis queries to local data repositories across the country with the results combined centrally in a meta-analysis.¹⁸
- A large US data source, Mini-Sentinel, collates healthcare

data from around 100 million people and also uses distributed queries, ¹⁹ and PCORnet (www.pcornet. org) marks a ramping up of US investment in this area.



• The Nordic

countries routinely extend their health data linkage to income and educational attainment records.²⁰

informing the public through social media such as the #datasaveslives campaign (www.datasaveslives. eu) and ad hoc media briefings by academics. Another example is the citizens' jury in which members of the public are provided with different perspectives to discuss. A recent jury found that when informed of both the risks and opportunities associated with health data sharing, the public believe an individual's right to privacy should not prevent research that can benefit patients

Public involvement is key to successful use of large scale health data overall. It concluded that patients should be notified of information sharing schemes and have the right to opt out if they so choose. ¹⁰ In her recent review on data security, consent, and opt outs, the UK national data guardian, Fiona Caldicott, found that the case for data sharing still needs to be made to the public. ¹¹

Another key factor in gaining public support is showing that science from such projects is credible. The need to replicate findings across heterogeneous populations and settings is well recognised.12 However, the medical literature is plagued with specious findings, often made from observational studies using routine healthcare data. 13 Some studies have even reached conflicting results from the same data sources-for example, a study that found an increased risk of cancer with glucose lowering drugs using the GPRD was contradicted a few years later by another that found no effect on cancer risk. 14 15 A particular barrier to replication is that algorithms and lists of clinical codes are not published alongside research papers.

What should we do now?

Public involvement is key to successful use of large scale health data. The public need to be able to access clear, high quality, up-to-date summaries of the scientific discoveries and healthcare improvements made using data from healthcare records. This would improve patient trust, reduce optouts, and let patients share the value of data sharing. Such summaries should be produced by the academic community in collaboration with patients and staff with skills in engaging and involving the public.



Producing this resource will be a full time job and requires funders to recognise its ethical importance and practical value.

Public trust is more likely if researchers are seen to meet high scientific standards through transparency in their methods and reproducibility of findings. The scientific community is showing increasing interest in improving reproducibility.²³ 24 One proposal is the e-laboratory, a shared digital laboratory supporting consistent recording, description, and sharing of data and statistical algorithms. facilitating rapid replication of findings.²⁵ Registration of protocols and publications in registers may further strengthen the reliability and credibility of studies using big data.26

Transparency and visible uses of data are also important for public trust.2 One approach could be to document where and how each person's data have been used. Administering this is likely to be challenging from a communications perspective—for example, explaining to non-affected people why they were included (as a control) in a study of schizophrenia. A more complex approach is dynamic consent, where people can see which organisations have accessed their data, get information on data analyses, and change their consent preferences for specific uses over time.²⁷ Prototypes for this are being developed.28 Individuals' views on different types of data use may vary and thus imposing "all or nothing" choices on opt-out risks losing data from people who are happy with most uses but sufficiently concerned about specific uses to opt out of all data sharing.

Public confidence in information security is pivotal. A workshop organised by the Academy of Medical Sciences (among others) proposed that sensitive data should be stored and analysed in centralised "safe havens," arguing that data security risks can then be managed better by segregating sensitive data, controlling data access, and monitoring data uses.²⁹



Safe havens

In order for safe havens to operate efficiently (at low cost and rapid responsiveness) they will need to facilitate different uses of the same data. But they also need to engage with the communities and clinical teams providing the data in order to get people to know what is happening with their data.³⁰

Many researchers prefer to download data rather than access them through safe havens. To ne way to improve data security and transparency for this approach is to use distributed analysis in which individual level data are analysed locally and only summary results or intermediate statistics are downloaded to and shared with researchers. A federation of local safe havens, known as Arks, is being developed, linked to the Connected Health Cities pilots in northern England.

The ultimate solution, however, must combine new technologies with clear accountability, transparent operations, and public trust. In addition, data stewardship is not just about physical and digital security; staff training, standard

The ulitimate solution must combine new technologies with clear accountability, transparent operations, and public trust

operating procedures, and staff are also important.³³ This combination of data protection (safe havens) and a culture of best practice underpins a trustworthy research environment.³⁴ ³⁵

Most people would expect a health service to monitor clinical outcomes so that quality of care and the effects of interventions can be assessed. Such activities, by definition, need people's healthcare data. If the UK is to make use of its globally important health data key stakeholders in health systems must act together to properly resource meaningful, enduring public involvement.

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HEAD TO HEAD



The potential savings from abandoning the internal market are considerable

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The NHS internal market was created after a contentious general election in 1987 focused attention on the NHS's inadequate funding, long waiting lists for elective surgery, and large unwarranted variations in clinical care. ¹² Economists (me among them) attributed these problems to a lack of incentives for efficiency, and the remedies offered included increasing competition in the NHS. ³ The US economist Alain Enthoven recommended an "internal market."

Creation of an internal market

Against this background the prime minister, Margaret Thatcher, announced an "in-house" confidential inquiry into the NHS in 1988. As a market ideologue, her initial preference was to increase the role of private insurance. Ultimately this led to supply-side reform and the creation of an internal market of purchasers and providers of care. ⁵ Hospitals became "trusts." Government gave health authorities block grants to fund the commissioning of care from providers. As an afterthought, groups of general practitioners were permitted to become fundholding purchasers, initially with limited budgets. In general, health economists regarded the 1991 reforms as an interesting experiment.

Since then there has been a "continuous revolution" of reforms, rarely informed by evidence or accompanied by evaluation. Hospital trusts were transformed into foundation trusts. Health authorities evolved into primary care trusts, then clinical commissioning groups (CCGs). These have not demonstrably improved performance (see for example Bojke and Goddard's review⁶).

General practice fundholding was extended during the 1990s but was abolished by Tony Blair's government in 1997. Subsequently, research indicated that it had reduced elective referral rates.⁷ Reform of provision and commissioning has imposed high regulatory costs on the NHS.

Has this been worthwhile? Lack of rigorous evaluations precludes a definitive answer, but it seems unlikely, for several reasons.

Lack of good information

Commissioning is a complex task, with considerable transactions costs; and government

requires commissioners to manage the performance of providers much more than do payers in insurance systems. The bundle of services available in any locality is large, heterogeneous, and affected by the increasing comorbidity of patients. Purchasers, even with GPs and other local clinicians involved, are confronted by a lack of good information about population needs, poor evidence to inform commissioning, and opaque process and outcome data. Furthermore, primary care, secondary care, and social care are fragmented and remain insular and protected by provider power and perverse incentives. Purchasing bundles of integrated care has been advocated for decades but remains as elusive as the holy grail. Creating an internal market has meant regulating its operation with increasing expense.

The history of the evolution of the internal market since 1989 is characterised by politicians' promises of an elusive utopia. All reforms are experiments. NHS reorganisations since 1989 have been characterised by unevidenced structural change and high and escalating regulatory costs that might better have been spent on patient care. They have shown that competition in healthcare is "mission impossible." The internal market is neither effective nor cost effective.

Evolution not revolution

Scotland, Wales, and New Zealand have abandoned the purchaser-provider split. In the cash strapped English NHS the potential savings from abandoning the internal market are considerable. The expenditure of the Care Quality Commission and Monitor for 2014-15 was £221m and £72m, respectively. Rather than revolution we now need evolution with careful evaluation. Change should focus on investment in integrated care funded by the demise of CCGs.

The internal market was an interesting experiment. My conclusion after 25 years and with my experience as chair of both a provider trust and a clinical commissioning group is that it has not worked. The former secretary of state Kenneth Clarke commented in 2008 that "if one day future generations find you cannot make commissioning work, then we have been barking up the wrong tree for 20 years." That day has come.

Competing interests: See thebmj.com.





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If the split was abolished the NHS would return to being a nationalised monolith

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Historically, healthcare providers in the NHS answered to senior management and ultimately to the Department of Health and secretary of state. The purchaser-provider split offered refreshingly new accountability—to local commissioners who represented the views of frontline clinicians and patients to give them an unprecedented voice in how their local health service might look. But clinical commissioning has had its growth stunted by too many rules and regulations and a system that continues to favour powerful provider interests over the commissioner.

Effective and save money

In the early 1990s some primary care clinicians (including me) showed that local commissioning groups could be effective¹¹ and save money.¹² A new Labour government recognised their worth and created primary care groups, many of which made improvements, especially at the interface between primary and secondary care,¹³ but the government then insisted that the groups should also provide community services (as primary care trusts) only to reverse this decision a few years later (the transforming community services programme). Nevertheless, amid several substantial re-disorganisations, many primary care trusts had successes.¹⁴¹⁵

The incoming Conservative government promised a new dawn, with clinically led clinical commissioning groups (CCGs), but these junior commissioning partners to NHS England were severely restrained by having to use the payment by results system, draconian procurement rules, and an oppressive performance management regime. Legal requirements as well as a need to deal with potential conflicts of interests (as opposed to interests) limit the ability of commissioning clinicians to talk to provider clinicians, who might be bidders in a competitive process, thus reducing the effectiveness of commissioning and procurement.

Born as the money ran out

CCGs were born just as the money ran out, and their effectiveness was further restricted, until very recently, because NHS England was commissioning primary care and many specialist services, with some public health functions transferred to local authorities. This left them powerless to move much needed money and resources from secondary care to primary care. Nevertheless, many CCGs have been effective, ¹⁶¹⁷ though most need to do more to engage their local clinicians and population. ¹⁷

An internal market could be devised to encourage conversations between frontline clinicians, as commissioners; to challenge primary and secondary care clinicians, as providers; and to improve and redesign current services—looking elsewhere only if providers are unwilling or unable to deliver. However, policy makers have consistently confused commissioning with procurement. It should never have been about lengthy, expensive, and clumsy tenders or creating provider markets simply for the sake of it.

The provider-purchaser split is also about engaging clinicians and patients day to day in how we can collectively conserve resources so that we can commission more. If the split was abolished the NHS would return to being a nationalised monolith—less accountable, historically dominated by secondary care, run by senior managers, and excluding the views of most clinicians and patients. Conversely, allowing commissioners to be sovereign rather than subservient would be far more likely to create the long awaited "primary care led NHS" accountable to frontline clinicians and local people.

Set it free

Its full potential has yet to be realised, but the provider-purchaser split has had successes. As clinicians we have matured from regarding ourselves solely as individual patient advocates (which is not sustainable in a health system that is free at the point of delivery) to balancing this role with a duty to the greatest good for the greatest number. That has brought us the uncomfortable but necessary reality of having to match clinical decisions with financial limits; but surely clinicians are best placed to fulfil this role, albeit within the financial limitations set by others.

We should not abolish the provider-purchaser split. We should set it free. That means cutting the rules and red tape and restoring the original commissioning ideals and passion. Then we can properly liberate the voice of frontline clinicians—primary and secondary—and our local people so as to make a real difference.

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Senior doctors need to do more to boost juniors' morale

After the announcement that a new contract for junior doctors in England will be introduced despite their opposition, many believe that the support of senior doctors will be crucial to help improve morale. **Abi Rimmer** reports

ngland's health secretary, Jeremy Hunt, announced last week that there would be a phased introduction of the new contract for junior doctors in England, starting in October. The news came after the BMA announced that 58% of junior doctors had voted to reject the proposed contract. After the announcement that the contract would be introduced, doctors called on senior clinicians to do more to support their colleagues in training.

Seniors "not there" for juniors

Partha Kar, a diabetes and endocrinology consultant, said that beyond the issue of the new contract there had arisen a belief among many junior doctors of "seniors not necessarily being there for themwhether it be in an educational context, rotas, or simple day to day working." He said, "We all lead busy lives. But as a senior, in my opinion, beyond being a specialist to our patients a big part of our role sits in the pastoral side and in the ability to inspire and to simply have an arm around the shoulder on tough days. As the saying goes, a smile sometimes can go a long way."



Jane Dacre, president of the Royal College of Physicians, said that NHS trusts and senior doctors could do several things to make the working environment more supportive of junior doctors. "For individual consultants those simple things include saying, 'Well done, you managed that patient really well in spite of it being in difficult circumstances," she said. "It's about saying thank you and finding time for the team to get together either to have a cup of coffee or the good old fashioned thing of the consultant inviting the team round to their house one evening to get together outside the hospital environment."

"It's about saying thank you and finding time for the team to get together" Dacre said that the contract dispute had highlighted the pressure that junior doctors were under. "I think that will go a large part of the way to making their consultants recognise that juniors need to be given a bit more time, a bit more support, and a bit more nurturing throughout their training careers."

Bevond the contract

Alice Garth, a second year foundation trainee, also outlined things senior doctors could do to help improve junior doctors' morale. "The thing that a lot of us [juniors] struggle with is that every four to six months we change jobs, we change city, we're trying to work out a new computer system and a new ward," she said. "It's about senior doctors having an understanding of that—and in doing so having a bit more patience with us and maybe working a bit harder to create that team atmosphere that doesn't really exist in the same way [as it used to]."

Garth said that it was important not to forget that issues of morale among junior doctors extended beyond the matters dealt with in the new contract. "We need to be careful not to just say that the morale issues are down to the new contract," she said. "They are down to bigger things in the NHS, whether it be because we are constantly understaffed and feeling overstretched, which means that more of our colleagues are off on sick leave. Which means that we are even more overstretched and medicine has become more legalistic and defensive."

Abi Rimmer, BMJ Careers

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FIVE FACTS ABOUT THE GENDER PAY GAP

Jeremy Hunt is commissioning a report on how to reduce and eliminate the gap in pay between the sexes in the medical profession. Here are five facts about the current gender pay gap

1 ONS FIGURES

In 2004 male doctors earned 21% more than their female colleagues, and by 2013 they earned 40% more, according to the Office for National Statistics.

2 BMA SURVEY

A BMA survey from 2009 found that, in general, female doctors earned 18% less than male doctors, equating to a raw pay gap of £15 245. By controlling for factors such as part time working, the BMA found a "true" gender pay gap among consultants of 5.6%, equating to £5500 a year, and among trainees of 4.1%, equating to £2000 a year.

3 CEAs

In 2014 a fifth (270) of the 1404 doctors who applied for a clinical excellence award were women. Of 300 awards given out, 15% (46) went to women, giving a rate of success among women of 17%. The 85% that went to men represented a 22% success rate.

4 ALL WORKERS

In April 2015 the gender pay gap among all workers in the UK, based on median earnings of full-time employees, was 9.4%. The Office for National Statistics said that this was the lowest gap since the survey began in 1997.

National work on morale

In February Jeremy Hunt announced that Sue Bailey, chair of the Academy of Medical Royal Colleges, would undertake a review of morale among junior doctors in England. But after renewed negotiations and an agreement being reached between the government and the BMA on a new contract in May, it was decided that the review of would not go ahead.

When Hunt announced this month that the new contract would be introduced in England, despite BMA members voting to reject it, he said that the Department of Health was continuing "to look at how we can improve the working lives of junior doctors more broadly."

The decision to impose the contract was not a rejection of the concerns of foundation doctors, Hunt said. These doctors "often felt most disconnected in that period of their training," he said. "We will continue to make progress in addressing these concerns under the leadership of Sheona Macleod at Health Education England (HEE), and we will continue to invite the BMA to attend those meetings."

HEE will look at how to improve information about rotations, how to widen access to flexible training, and how to make study leave provision fairer.

Bailey said that the academy's trainee doctors' group was also working on a project looking at how junior doctors can be supported through training. "An update on the group's progress is due to be published very soon, and I know the group is considering the best way to carry this forward in future," she said.

5 EQUAL PAY DAY

The Fawcett Society, a women's rights campaigning organisation, said that the current gender pay gap meant that women effectively stopped earning relative to men on a day in November. This year this Equal Pay Day falls on 10 November.

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The junior doctor contract: we now need strong leadership at all levels



The EU referendum result has set a mandate to split the UK from the EU. An uneasy feeling followed, with those who voted to remain bemoaning the far right and older people for dictating their future. Yet it was partly the disenfranchised working classes hedging their bets on uncertainty by voting to leave that influenced the outcome. In their eyes, anything was better than preserving the status quo.

I see parallels in this group when I consider my junior doctor colleagues. Years of discontent, rising workloads, reduced training opportunities, and a worsening worklife balance are why their morale is at rock bottom. The dispute over the proposed new contract is simply the latest in a long series of changes that have worsened junior doctors' working lives. It's no wonder the contract was rejected, though the government is pressing ahead with it despite the outcome of the vote.

Lost chance to take control

I voted to accept the new contract. I believed it offered a chance for the medical profession to take back control. Exception reporting should act as a means of informing employers of hours of work and rest, patterns of work, and educational opportunities. Through exception reporting, barriers between frontline junior doctors, guardians of safe working, directors of medical education, and educational supervisors would be broken down. Exception reporting could be a powerful workforce planning tool to quantify gaps in rotas, forcing employers to act. Our supervisors would be performance managed by new and pre-existing junior doctor forums bolstered with contractual remits and powers.

I believe that the proposed payment structure, though complex, is fairer than what

we have now and that the proposed contract goes as far as it can on whistle blowing, with the ultimate endgame being legislative change. I'm reconciled to the fact that the removal of automatic pay progression would adversely affect some trainees who work less than full time (LTFTs).

Leap of faith

I may be overly optimistic. Many of my colleagues cannot fathom a world where exception reporting works, where employers act to fill rota gaps, or where we get paid for all the work we do. They view me as deluded or as an apologist.

Such divisiveness could be the downfall of junior doctors. We are not each other's enemy, but we risk becoming exactly that. No one comes to work to do harm. There are good senior colleagues out there, and employers rarely, if ever, set out to do the wrong thing.

A leap of faith is required now, along with strong leadership, from the BMA and nationally but also from the very junior doctors who were on the picket lines.

I see a world where our leaders are those on the junior doctor forums who hold employers to account, who show their colleagues that it is fine to exception report, who flatten the hierarchies of junior and senior colleagues, and who fight for equality in the workplace. We must approach the unknown with a plan. Grassroots activists, shop floor junior doctors, and national BMA leaders must all roll up their sleeves.

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Richard Lilford

Hates non sequiturs

What was your earliest ambition?

To be a doctor, from age 10. I liked the idea of being able to make a diagnosis and then cure someone.

Who has been your biggest inspiration?

My mother, who told me that it's better to be bullied than to be ignored.

What was the worst mistake in your career?

Joining the civil service. I wasn't cut out to be "part of the machine."

What was your best career move?

Becoming a doctor. I miss not seeing patients in my current role, but improving patient care is the motivation behind all of my work.

Bevan or Lansley? Who has been the best and the worst health secretary?

I got to know William Waldegrave at the time of Margaret Thatcher's reforms, which I supported, and he was thoughtful, sincere, and intelligent. Lansley over-reached himself: the patient wouldn't take the medicine!

Who is the person you would most like to thank, and why?

Mr Forbes, my prep school biology teacher, who encouraged me when my classmates ridiculed my aspiration to study medicine, saying I was too stupid.

To whom would you most like to apologise?

To my late father: he loved to eat fat, and I nagged him remorselessly as he tucked in. Now I learn that it wasn't doing him any harm.

Where are or were you happiest?

Losing myself in play, first with my children and now with my grandchildren.

What unheralded change has made the most difference in your field?

Randomised trials were hardly ever conducted when I was a medical student, but they've become the main source of clinical evidence during my lifetime. However, I'm still waiting for people to adopt the Bayesian way of interpreting results.

Do you support doctor assisted suicide?

Passionately—it's what I want for myself when my time comes.

What book should every doctor read?

Clinical Decision Analysis by Milton Weinstein and Harvey Fineberg. The intellectual framework whereby probabilities and preferences can be reconciled was a revelation to me. Also, *Cancer Ward* by Aleksandr Solzhenitsyn.

What is your guiltiest pleasure?

Drinking with my friends until late.

What, if anything, are you doing to reduce your carbon footprint? Oh dear.

What personal ambition do you still have?

To bring Bayesian philosophy into the mainstream in medical and health service delivery evaluation. It's about time.

What is your pet hate?

Non sequiturs at dinner parties.

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