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TACKLING UNSAFE ROTAS

AN **MDDUS**
PUBLICATION





Welcome to your FYi

WORKING long tiring shifts seems to be the accepted norm for trainee doctors, especially as the NHS contends with increasingly limited resources. But what if you are so exhausted you fear you can no longer provide safe patient care? I offer some words of advice on when to speak up in my article on [page 10](#).

If you are struggling to cope with work pressures, then help is at hand. Our article on [page 5](#) offers practical tips on managing stress and avoiding burnout as part of an RMBF campaign.

A new MDDUS-sponsored book of poetry offers reflections on life as a junior doctor. Find out more, including how to get your free copy, on [page 7](#).

What are your professional obligations to help a stranger in need of emergency medical care? MDDUS medical adviser Dr Greg Dollman advises on acting as a 'Good Samaritan' on [page 6](#).

Manned missions to Mars are a real possibility in the coming decades - but what are the ethical considerations of sending humans into space? Dr Allan Gaw investigates on [page 12](#).

A recent GMC study gauging the preparedness for practice of medical graduates found more than half were against proposals to move full registration to the point of graduation. Our article on [page 4](#) considers both sides of the argument.

If you like the idea of using the latest technology to diagnose, treat and monitor a variety of illnesses, then radiology could be the speciality for you. Find out more in our career article on [page 8](#).

Our case study on [page 14](#) follows a seemingly simple case of persistent dyspepsia that has a grave outcome.

- **Dr Naeem Nazem**
Editor

NEW CAPACITY AND CONSENT TOOL FROM GMC

DOCTORS struggling with issues around consent and capacity can consult a new online tool launched by the General Medical Council.

The interactive mental capacity decision support tool draws on the principles of the regulator's guidance *Consent: patients and doctors making decisions together* and *Treatment and care towards the end of life*.

It can be used across the UK and includes a case study at each stage of the decision-making process to show how the guidance applies to the clinical situations doctors may face.

Access the tool on the GMC website: www.gmc-uk.org/Mental_Capacity_flowchart/

MDDUS members can also watch video modules on consent and download checklists on our website in the Risk Management eLearning centre.

CONCERNS OVER HOSPITAL DISCHARGE PROCESS

MOST hospital inpatients "always" have confidence and trust in doctors but only two-thirds feel their family or home situation is taken into account when planning their discharge.

These are key findings from the recently published *NHS Adult Inpatient Survey 2015* involving over 83,000 hospital inpatients.

In the survey, 84 per cent (up from 81 per cent in 2014) reported that they were "always" treated with respect and dignity in hospital and 71 per cent (up from 69 per cent in 2014) said that when they had important questions for doctors or nurses they "always" got answers that they could understand.

A growing majority also said that they "always" had confidence and trust in doctors (82 per cent) and nurses (79 per cent), and 60 per cent said that they were "definitely" involved as much as they wanted to be in decisions about their care and treatment -

an improvement on the 57 per cent in 2014.

But figures around post-treatment discharge planning were less encouraging, with 41 per cent of discharged patients reporting not being told about medication side effects, and only 62 per cent feeling that hospital staff completely took their family or home situation into account when planning the discharge process. Only 56 per cent agreed they had received enough support from health and social care professionals to help them manage their condition after leaving hospital.

Commenting on the results, Dr Andrew McCulloch, who developed and coordinated the survey for the CQC, said: "Patients need to leave hospital with clear information and understanding about their ongoing care and medicines. Too often this is not happening, and improvement is needed to benefit patients and the NHS alike."



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BULLYING MORE COMMON AMONG NHS BLACK AND MINORITY ETHNIC STAFF

BLACK and minority ethnic (BME) NHS staff in England are more likely to be bullied than their white colleagues, new research has shown.

Higher percentages of BME staff said they experienced bullying, harassment or abuse from staff, regardless of the type of Trust or geographical region in which they worked.

They were also more likely to face discrimination from management than white staff, and less likely to agree that their trust provides equal opportunities for career progression or promotion.

The findings were revealed in the first report on the NHS Workforce Race Equality Standard (WRES) from the NHS Equality and Diversity Council.

The WRES, introduced in 2015, aims to prompt discussions about the reasons why BME staff often receive poorer treatment and to identify ways of tackling the problem.

Of the 153 acute trusts who submitted data, 75 per cent showed a higher percentage of BME staff being bullied by fellow workers compared to their white colleagues. In the trust with the greatest disparity, 42 per cent of BME staff said they had been bullied compared to 18 per cent of white employees.

Other findings reveal that in 86 per cent of acute trusts, a higher percentage of BME staff do not believe their organisation offers equal opportunities for career progression or promotion compared to white staff. Similarly, 81 per cent of trusts reported a higher proportion of BME staff facing discrimination from a manager, team leader or colleague. In one trust 57 per cent of BME but only 12 per cent of white staff experienced this discrimination.

NHS England chief executive Simon Stevens said the report provides "unvarnished feedback" to every hospital trust across the country.

"It confirms that while some employers have got it right, for many others these staff survey results are both deeply concerning and a clear call to action," he said. "As this is the first year of the WRES, it provides a transparent baseline from which each employer will now be seeking to improve."

Read the full report at tinyurl.com/zoz59oh

GMC REINFORCES STANDARDS FOR MEDICAL STUDENTS

MEDICAL students must understand the importance of patient confidentiality and behaving appropriately on social media among other professional values set out in new guidance from the GMC.

The GMC and the Medical Schools Council (MSC) have published *Achieving good medical practice* (tinyurl.com/zv24c3d) - a document for medical students outlining the standards and professional behaviour required before becoming a doctor after graduation.

The new guidance - based on GMC core standards in *Good medical practice* - comes with practical tips to help medical students apply the professional values to their studies, placements and time outside of medical school.

Medical students are required to recognise the limits of their competence and be honest when they don't know something and ask for help when needed. They are also asked to raise concerns about the safety, dignity and comfort of patients and always protect patient identifiable information.

The document also provides guidance on the use of social media where students are free to express their views but must not behave in a derogatory manner to

other users.

The guidance will come into effect in September and an e-book version will follow in 2017.

An additional piece of guidance has been published by the GMC and MSC to help medical school and university staff to manage and support students whose professional behaviour or health becomes a cause for concern. *Professional behaviour and fitness to practise* is aimed at supporting medical school staff in delivering student fitness to practise processes.

GMC chair Professor Terence Stephenson said: "[Medical students'] studies and placements will bring them into contact with patients and members of the public who may be physically and emotionally vulnerable. Because of this, and to maintain the public's high level of trust in doctors, they have to display higher standards of professional behaviour - both inside and outside of medical school."

The launch of the new guidance follows a large-scale review of the existing guidance from 2009 (*Medical students: professional values and fitness to practise*) and involved a formal consultation with a survey of 2,500 medical student and others.

HUNDREDS OF NEW FGM CASES RECORDED EVERY MONTH

MORE than 400 new cases of female genital mutilation (FGM) are reported each month in England, with over half occurring in London.

New figures revealed there were 1,242 newly recorded cases of FGM reported between January and March 2016, and a total of 2,223 attendances where FGM was identified or a related procedure carried out.

The Health and Social Care Information Centre (HSCIC) report showed 81 NHS trusts and 12 GP practices had one or more attendance for FGM during that period. Almost all information was submitted by trusts, however, with GP practices accounting for just one per cent of total attendances.

Most FGM was self-reported (75 per cent) with London accounting for 52 per cent of new cases.

The vast majority of women and girls with a known country of birth were from an eastern, northern or western African country, with Somalia accounting for a third of new cases. Other countries with a large volume of cases included Eritrea, Sudan and Nigeria.

Eleven new FGM cases involved women and girls who were born in the UK, and at least seven procedures were carried out illegally in the UK. Twenty-nine affected girls were under 18, comprising two per cent of all new cases.

The NHS has been required to collect data on FGM since April 2014. Doctors in England and Wales also have a mandatory duty to report to the police FGM cases in girls under the age of 18.

Read the full report on the HSCIC website.



NOW YOU'RE A DOCTOR...

ALMOST A review of medical training questions the need for provisional GMC registration

IT'S been a long hard slog - five or more years of intensive study and work, gathering knowledge and experience in lecture halls, laboratories, hospitals, GP practices and other healthcare settings, dealing with patients hands-on. Now you graduate and can call yourself a doctor but here the General Medical Council demands another probationary year before you can officially be let loose to practise your profession.

Is provisional registration really necessary?

In October 2013 the final report of a review into the future of medical training in the UK was published addressing this very question among others. The *Shape of Training* review - led by Professor David Greenaway - concluded that: "Full registration should move to the point of graduation from medical school, provided there are measures in place to demonstrate graduates meet the GMC's standards at the end of medical school".

The report states that currently the support and management of F1 doctors is fragmented, with medical schools responsible for considering fitness to practise and making recommendations to the GMC about full registration. This despite the fact that F1 training can take place anywhere in the UK and F1 doctors have little or no supervisory relationship with their medical school.

It adds: "Postgraduate organisations face challenges in managing F1 doctors who have fitness to practise concerns due to complex governance arrangements. By moving full registration to the point of graduation, responsibility for F1 doctors will clearly be with postgraduate institutions."

Supervised practice

GMC provisional registration was first introduced in the Medical Act of 1950 which was based on a recommendation from the 1944 Goodenough report that no doctor should be able to become an independent practitioner without a year of supervised practice. The GMC states that the purpose of the Foundation programme year 1 is to enable doctors to put into practice key learned skills and apply knowledge gained during undergraduate

medical education. On completing F1 training, doctors must demonstrate the outcomes set by the GMC and show a readiness to accept with confidence the duties and responsibilities of a "fully registered and licensed doctor".

But the Medical Schools Council (MSC) has long been in favour of scrapping provisional registration. The MSC has continued to argue that, with subsequent developments in postgraduate medical education, graduates now undergo five or more years of comprehensive training before entering independent practice and the need for provisional registration as originally conceived is questionable in terms of protecting patients. It believes that medical schools are now confident their graduates are ready for supervised practice and further training. It argues that the reasons for introducing a provisional year of GMC registration for F1s are no longer relevant in light of current advances, such as the introduction of revalidation and shadowing.

A GMC-funded study recently published on

"This change removes the opportunity to monitor the clinical work of the newly qualified"

BMJ Open addressed the preparedness for practice of medical graduates. It involved 185 individuals recruited from four study sites in each UK country, including F1 and F2 doctors, clinical educators, undergraduate and postgraduate deans, foundation programme directors and patient groups. The study was not designed as an opinion poll but it found that 57 per cent of comments were against abolishing provisional registration compared to 32 in favour, the remainder being neutral.

Typical of responses in the study was that of one F2 doctor who replied: "No! You need that year to get the experience."

Safety net

Patient safety was by far the most commonly mentioned reason in the study. Participants felt that F1s needed to be closely supervised, adequately supported and provided with incremental responsibility. "Many described the F1 year as a safe learning space, buffer zone or safety net, enabling F1 doctors to develop as professionals and consolidate undergraduate learning".

Medical academics have also expressed strong opposition to plans to move the point of registration, warning at a British Medical Association conference that such a change "removes the opportunity to monitor the clinical work of the newly qualified; it will remove the pressure to provide a foundation post for every graduate and may lead to UK medical graduate unemployment."

The BMA reports on its website that it has engaged with the four governments of the UK to express its views on *The Shape of Training* proposals ahead of publication of the various plans for implementation. It states that while it supports the "broad thrust of the report" there is still concern over the proposed point of registration with the GMC.

"Unless the length of medical school programmes were extended this would result in the cramming of training and clinical experience currently provided by the F1 year into the undergraduate curriculum. The BMA is not convinced it is possible to produce doctors who are fit to practise under these conditions."

Jim Killgore is an associate editor of FYi



WHAT'S UP DOC?

As junior doctors face increasing work pressures, a new campaign aims to reduce stress levels

DOCTORS make the worst patients, or so the saying goes. Whether they're too embarrassed to admit they need support, worried about stigma, or just plain in denial, seeking help does not seem to come easy.

But as work pressures and stress levels continue to rise, it has never been more important for doctors who are struggling to cope to ask for the assistance they need.

One new initiative hoping to raise awareness of this issue is the *What's Up Doc?* campaign from the Royal Medical Benevolent Fund (RMBF), a registered charity set up to help doctors, medical students and their dependents. They offer financial aid and debt advice, and also provide a befriending service.

Staying silent

A recent survey carried out by the RMBF as part of *What's Up Doc?* highlighted the overwhelming concern over the state of mental health and wellbeing amongst doctors, largely as a result of working under increasing pressure and scrutiny. It found a massive 82 per cent of doctors knew of other doctors experiencing mental health issues such as depression and anxiety. Despite this, they were unlikely to reach out for fear of discrimination or stigma from colleagues (84 per cent), or were inhibited by their 'high achieving' personality traits (66 per cent).

The survey of hospital doctors, consultants, GPs and charity supporters also revealed 78 per cent of doctors believed medics are so busy looking after others that they neglect to look after themselves, while over 90 per cent believe their working hours put personal relationships under pressure.

Of the key factors contributing to pressure on doctors, 80 per cent blamed patient caseloads and a similar number cited increased scrutiny (such as CQC inspections or the pressure of revalidation), while 76 per cent highlighted working hours.

Junior doctors in particular are increasingly in need of help. The RMBF's annual review showed that in 2014-15, 68 per cent of new applicants were under 40 - up from 54 per cent the previous year. In 2011-12 the biggest single group of people applying to the Fund for assistance were junior doctors aged 25 to 35.

Elsewhere, the annual NHS staff survey in 2015 showed that 31 per cent of juniors

experienced work-related stress in the last 12 months. That's compared with less than 20 per cent in 2010. Less than half (43.5 per cent) of trainees felt their job was good for their health, down from 55 per cent in 2011.

Getting help

In a bid to reverse this trend, the RMBF has undertaken a number of initiatives, including hosting a roundtable debate - sponsored by MDDUS - to explore effective means of support. They have also published a free downloadable guide, *The Vital Signs*, written by Dr Richard Stevens, a coach with the Thames Valley Professional Support Unit.

The guide acknowledges there is "very little support on offer" in the caring professions, adding that doctors "are expected to carry on, and there is even a sense that needing support is a sign of weakness". Many cope, it says, by developing a so-called "survival personality", where they shut off parts of themselves that would otherwise find some aspects of the work unbearable. Other strategies include "medical narcissism", a term used by ethics professor John Banja to describe the attitude adopted by some doctors, especially when things go wrong.

Key advice points from the guide include the following:

Self-awareness

The booklet encourages doctors first to be aware of the signs of stress and to do something to improve the situation. Admittedly this is not always easy. It states: "It is ironic that when we need to do the things that will help deal with a difficult time, it is the most difficult time to do those things."

The guide likens ignoring feelings of stress and burnout to cutting down a tree with an increasingly blunt saw. "Often we continue sawing because we haven't time to stop and sharpen the saw." Developing a good degree of self-awareness is crucial so that help can be sought before any harm is done "clinically, professionally or socially."

Trigger points

Common factors to keep in mind include:

- Emotional toll of the large number of interactions with staff or colleagues

- Long hours/sleep deprivation
- Financial worries
- Lack of support at work
- Understaffing
- Burnout (emotional exhaustion; doubts about personal/professional effectiveness)
- Instability in working arrangements.

Key signs

The guide outlines a number of key early warning signs to help identify trainees in difficulty. These include:

- Doctors who are often late/absent or not answering beeps
- A low work rate - slow at carrying out procedures; arriving early and leaving late yet struggling to achieve a reasonable workload
- Bursts of temper/over-reaction
- Colleagues find ways to avoid seeking the doctor's opinion or help
- Defensive, unable to accept constructive criticism
- Behaviour changes, such as excess drinking or withdrawal.

Seeking help

Just because you're a doctor, doesn't mean you are expected to accurately self-diagnose. It is crucial to let yourself just be a patient - seek help early and don't focus on concerns about being judged or stigmatised. If you are keen to avoid the usual healthcare structures, there are a number of options, such as the RMBF, the Sick Doctors Trust and the NHS Practitioner Health Programme in London. More detailed information can be found in *The Vital Signs*.

Joanne Curran is an associate editor of FYi

Links:

- *The Vital Signs*: www.rmbf.org/pages/the-vital-signs.html
- What's Up Doc? campaign page: www.rmbf.org/pages/whats-up-doc.html



What are your obligations as a doctor to help a stranger in need of medical help?
Dr Greg Dollman advises

THE GOOD SAMARITAN

PICTURE the scene: you are walking down a city centre street when you see a small gathering of people up ahead. A shopper has collapsed and one of the people around him is calling out for medical help. As a trainee doctor – what should you do?

This type of dilemma prompts frequent calls to the MDDUS advice line with doctors asking about their obligations to act as a so-called “Good Samaritan”, and the risks this involves.

Any concerned member of the public, medically qualified or not, may act as a Good Samaritan. For a doctor, Good Samaritan acts encompass the provision of medical services in emergency situations which are outside the scope of an individual’s normal contractual obligations or clinical practice. Simply, a passing-by, off-duty doctor who assists a stranger in need would be a Good Samaritan.

The law

By law, doctors across the UK have no obligation to assist in an emergency outside the terms of their employment contract.

While doctors may wish to assist an individual in difficulty, they may be concerned about the risk of a potential claim arising out of their actions. *The Social Action, Responsibility and Heroism Act 2015 (SARAH)* may provide reassurance to Good Samaritans in England and Wales: it advises a court that, were a claim to arise from such an action, it should consider whether that action was a reasonably responsible intervention in an emergency for the benefit of an individual or society.

In all areas of the UK, it is unlikely that a doctor would be criticised if acting in line with SARAH, guided by common sense and the overriding principle to do no harm. MDDUS believes that a doctor’s risk in assisting a stranger in distress is very low, and indeed has

never encountered a case arising from a Good Samaritan act performed by one of its members.

Professional duties

While under no legal requirement to assist in an emergency, doctors have an ethical obligation to do so. The GMC sets out the professional standards expected of doctors. It states in *Good medical practice* that doctors “must offer help if emergencies arise in clinical settings or in the community, taking account of your own safety, your competence and the availability of other options for care.”

In the case of the collapsed shopper, the doctor must first consider whether it is safe to attend, and ascertain whether anyone else is better placed to assist, especially if the doctor believes that their judgement may be impaired for any reason.

Doctors must abide by the same ethical duties that apply in conventional patient care when they assume a duty of care to assist someone as a Good Samaritan. Doctors must make the care of a patient their first concern. They are obliged to act within the scope of their competence and, in the case of a Good Samaritan act, to make any limitations clear to the person in need and those attending. Doctors must consider the issue of consent in all patients and act in the best interests of those who lack capacity. In addition, doctors must ensure that continuity of care is maintained.

The doctor must work collaboratively with any other medical professionals who attend the collapsed shopper, gauging who is best placed to assist and lead the care. As with any other clinical interaction, the doctor should obtain as comprehensive a history as possible and undertake an appropriate examination in

the circumstances. If further support is required from emergency services, the doctor must provide relevant information to those in attendance. The GMC reminds doctors acting in a professional role to provide their name and GMC number to anyone who requests it.

The Good Samaritan doctor may wish to document their involvement in the care provided, guided by the significance of the incident. This doctor is bound by the same duty of confidentiality to the stranger as with any other patient.

The GMC states that being unregistered, or registered without a licence to practise, does not stop a doctor helping in emergencies. It is against the law, however, for doctors to present themselves as a registered doctor if they are not.

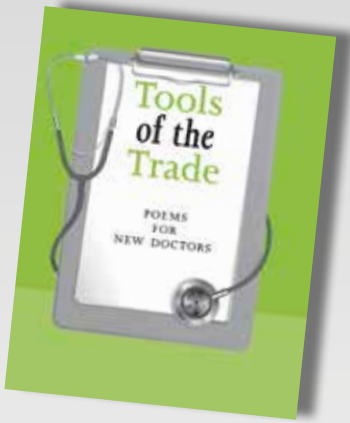
Indemnity

Doctors are reminded that the benefits of MDDUS membership include access to worldwide indemnity for Good Samaritan acts.

It is vital to note the difference between offering assistance in an emergency situation and volunteering in advance to provide medical care, such as at a sporting or charity event. A well-intentioned undertaking to assist as a healthcare provider in a setting outside a doctor’s usual area of practice would not be considered to be a Good Samaritan act, and members wishing to undertake volunteer work should contact the MDDUS to discuss this in advance of the event.

The MDDUS provides emergency advice 24 hours a day, and doctors should contact an adviser if they wish to discuss any urgent concerns related to a Good Samaritan act.

Dr Greg Dollman is a medical adviser at MDDUS



COAT-POCKET POETRY

"REFLECTING on poetry, and indeed on all the Arts, can produce a different sort of doctor: one who is richer and deeper as an individual."

So writes Dr Brendan Sweeney – MDDUS Chairman – in the foreword to a unique resource being distributed to all doctors graduating in Scotland in 2016, 2017 and 2018.

Tools of the Trade: Poems for New Doctors is a short collection of verse that "speaks to the experience of being a junior doctor". Many of the poems are written by doctors themselves, including Dannie Abse, Iain Bamforth, Glenn Colquhoun, Gael Turnbull and Martin MacIntyre (who wrote the title poem below).

The volume is published by the Scottish Poetry Library with additional support from the Royal College of General Practitioners (Scotland) and MDDUS.

Copies can be purchased from the online shop at the Scottish Poetry Library – but for a limited time final year students and foundation doctors across the UK can request a **free** copy from MDDUS. Email us with a note of your address to FYi@mddus.com

A new pocket-sized poetry book speaks to the experience of being a junior doctor

Tools of the Trade

New doctors will be empowered by poems in the pockets of their metaphorical white coats.

There at the ready;

on early, sweaty, scratchy, ward rounds to deploy while waiting patiently for the consultant's

late appraisal;

give filing, phlebotomy and form-filling an edge and depth;

sweeten tea-breaks as if with juxtaposed Jaffa Cakes to answer that persistent bleep—while sneaking a pee, to travel the manic crash and flat-lined emptiness of cardiac arrest

thole the inevitability of the inevitable;

to pace with careful cadence;

stop and breathe usefully

arrive ready not to recite by rote;

to be alone with on the boisterous bus home

to txt anxious Mums and Dads—Are

you remembering

to feed yourself?

'YES. LOL. Smiley-face—perhaps a frog?'

to place strategically on the cup-ringed cabinet—first night on-call,

thrust under the sun-torn pillow on the morning following the first night on-call find undisturbed, but at a different verse, following the jumpy party, following the first night on-call to steal insights into the science of nurses' smiles to prepare for change.

To take a full history, examine closely and reach a working diagnosis: 'You are a human being.'

'The stars sing as whitely as the mountains.'

To investigate with prudence.

To reconsider the prognosis in the light of better-quality information.

To appreciate; pass on; ponder

challenge, relinquish,

allow, accept

be accosted by dignity.

To forgive and free.

Martin MacIntyre (b 1965) is a Scottish poet, novelist, storyteller and doctor who writes in English and Gaelic



THEY'RE often the first to make a diagnosis and use some of the most advanced healthcare technology around. The job of a radiologist is varied but essentially involves the use of imaging to diagnose, treat and monitor various disease processes.

The Royal College of Radiologists (RCR) has reported a "massive growth" in applications of radiological imaging and image-guided treatments, fuelling what they call a "worldwide shortage" of trained specialists. As they push for additional training places to meet this demand, now could be the ideal time to take an interest in this field.

Entry and training

Doctors can move straight into specialty training from foundation year two, although some choose to train in another field before applying. Radiology specialty training lasts five years (ST1 to ST5) with no competitive application process at ST3. Core radiology training generally lasts three years (ST1 to ST3) followed by advanced (special interest) radiology training for a further two. An additional year is added for those who choose to subspecialise in interventional radiology.

Doctors must enrol with the RCR before beginning training and maintain membership throughout (currently £151 per year). They must also pass the three-part fellowship (FRCR) examination. Part one is normally taken halfway through ST1, with successful completion a requirement to advance into ST2. Part 2A is about to change to a single multiple choice exam covering all areas of the curriculum while Part 2B is based on practical image viewing. These are expected to be completed by the end of ST4 before progression to ST5.

The RCR's *Specialty training curriculum for clinical radiology* details the competences required to be awarded a certificate of completion of training (CCT). These will be achieved through a variety of learning methods, from formal teaching programmes to experiential learning on the job. Achievements can be documented in the trainee's ePortfolio. The many special interest areas of radiology offer something to suit most personality types, whether you are looking for patient interaction and quick procedures (breast radiology), or enjoy handling more complex specialist cases (neuroradiology). Trainees usually start thinking about special interests around ST3 and most focus on two areas in ST4 and ST5, with options including cardiac, emergency, gastrointestinal, paediatric, thoracic and more. Trainees can also be appointed to the subspecialty of interventional radiology at ST4.

The job

Radiologists have a vital role to play at both ends of the clinical spectrum - in both diagnosis and interventional treatment - and deal with a wide range of cases. For diagnosis, there are a variety of imaging techniques at their disposal. Standard examinations can involve plain radiographs, ultrasound, and computed tomography (CT), while more complex techniques include magnetic resonance imaging (MRI) and positron emission tomography coupled with CT or MRI (PET-CT and PET-MRI).

The RCR describes how rapid advances in technology, along with advances in identifying diseases on diagnostic images, means imaging can be used at increasingly early stages of the diagnostic process.

Radiologists can also play a direct part in patient management, from performing urgent minimally invasive procedures and stopping life threatening haemorrhages to undertaking day case procedures such as oesophageal stenting or angioplasty. One treatment they do not perform is radiotherapy for tumours which is the responsibility of the clinical oncologist.

The RCR says: "Masses identified by radiology can be biopsied with guidance of the needle path by imaging techniques and without recourse to a surgical procedure in most cases. Interventional radiologists use image guidance for a rapidly increasing array of minimally invasive procedures, from arterial to colonic stenting, from vascular embolisation for uncontrollable bleeding to image guided ablation of tumours."

As the government continues to push for a so-called "seven-day NHS", it is likely that access to out-of-hours imaging will have to increase. While this may mean greater demand for radiology services, it could also mean more shift and weekend work for specialists. Whatever the future holds, this stimulating and satisfying field has much to offer.



IMA

is

EVERY

The specialty of radiology is varied and
for both diagnostic and



Q&A

Dr Hefina Whiteley-Jones,
specialty trainee in radiology
based in Brighton

What first attracted you to radiology?

Radiology experience at medical school was non-existent for me, and I found it a rather mysterious entity. But during foundation and core surgical training I realised that radiologists often provide the answer when others have failed and major management decisions were being made based on the radiologist's opinion. Radiologists also make big calls in MDTs, as well as getting involved in high-pressure major interventional procedures. The other attractive aspects include a great work/life balance, varied sub-specialties, flexibility for part-time working and training, and potential for private practice. And of course, radiology is at the cutting edge of technology, so we have the best toys in the hospital!

What do you enjoy most about the job?

My added value in a patient's journey is huge. You are always working to ensure they get the right imaging and the right treatment at the right time. You can perform life-saving major interventions if you're after some adrenaline, or smaller procedures if that's not your thing. There are a range of new skills to learn, which is really rewarding. The research opportunities are vast and teaching and learning is made much easier as the patients are always available for review. I am truly excited to imagine where the specialty will be in 10 years' time - scanners are continually improving, imaging sequences are continually in development, and the radiologist's role will be more central than ever, especially in cancer care.

What do you find most challenging?

The exams are tough and probably the biggest hurdle for trainees. The Royal College of Radiologists has recently cut these from 11 to seven in an attempt to improve things. There is an ever increasing workload: the UK has half the number of radiologists it should have, with more and more scans being performed. This does mean of course that the future for radiology as a specialty is very bright and employment prospects are excellent. Trying to follow that loop of bowel on cross-sectional imaging is always a challenge, although this does get easier with time.

Has anything surprised you about the specialty?

I have found the reduced patient contact quite positive and I enjoy the balance. It gives me more time for other activities, e.g. research, and when I do see patients I value it. I also found that radiologists are generally a happy bunch who truly enjoy their job, and are not (usually) grumpily locked away in a dark room.

What do you consider the most important attributes of a good radiologist?

Attention to detail, excellent clinical knowledge, and good negotiating skills. An interest in anatomy is vital, as this is the universal language of radiology that you continue to hone throughout your career. IT skills are useful, and good hand-to-eye co-ordination is crucial for procedures. Radiologists need to be inquisitive and ask questions, and often suggest diagnoses that the clinicians have not yet considered. There is nothing more satisfying than clinching the diagnosis in a difficult case.

Is there any advice you could give to a final year or FY trainee considering radiology?

Do a taster week to get a real idea of what radiology entails and talk to radiologists about their job. I would recommend a good foundation in clinical medicine and surgery, e.g. completing CMT or CST, and postgraduate exams are a good idea too. They set you in good stead for the clinical requirements of the job and help you perform better at interview. I love my job - it is incredibly satisfying, interesting, and there is always time for a cup of tea. So if you think it is the job for you, go for it! You absolutely won't regret it.

Sources

- The Royal College of Radiologists - www.rcr.ac.uk
- "A career in radiology", *BMJ* - tinyurl.com/zwo7ceo

AGE

THING

challenging, using the latest technology
and interventional work

THE average person changes jobs between 10 and 15 times during their career, staying at each one for around five years. Junior doctors, however, are far from average. Most will rotate to a new post every four to six months which inevitably means working with new people, new patients and frequently in new locations.

The process of continuously adapting to new working environments provides trainees with many of the skills that make them good doctors. It develops team working and communication skills, as well as the ability to adapt to new and differing situations. Perhaps most significantly, it allows junior doctors to develop their training and expertise much more rapidly than any single environment could provide.

Unfortunately, with the good inevitably comes the bad. When they are not busy caring for patients, juniors are usually found studying for postgraduate exams, teaching medical students, or engaged in other educational activities such as clinical audits or research. In addition, many need to search for their next post every few months.

The perfect post?

In looking for their next job, most junior doctors will prioritise location, specialty, and training opportunities. Few will investigate staffing levels or the systems and policies in place to maintain a safe working environment. As a consequence, concerns often only come to light once they are already established in their new post.

Consider the scenario. A month into your FY2 post you notice that a chronic lack of relevant supplies often forces you to improvise during

states: "If doctors feel under pressure to cover a gap, they should carefully consider their own health and welfare and the impact on their practice if they are exhausted. They need also to consider the risks to patients from any refusal to cover a shift, and wherever possible work collaboratively with colleagues to find a solution." If you believe your rota is placing an excessive burden on you, such that your ability to work could affect patient safety, then you have an obligation to raise concerns.

Similarly, employers are obliged to design rotas that are safe for both doctors and patients. The GMC describes how its new *Standards for medical education and training* "require organisations to design rotas that make sure doctors in training have appropriate clinical supervision and minimise the adverse effects of fatigue and workload."

However, a rota that is just inconvenient or antisocial is unlikely to justify raising patient safety concerns. Remember that you are subject to a contract of employment with your hospital and this may allow them to impose new working arrangements. If you have contractual or employment concerns you should consult the BMA or similar independent advisory services.

A big ask

All doctors want the best possible training experience but they also care deeply about the quality of patient care. With this in mind, some juniors feel pressured to "help out" at any expense.

Consider the scenario. You are coming to the end of an exhausting 12-hour night shift but as you prepare to head home, a frustrated-looking consultant approaches. The FY2 due to take over from you has

A SAFE SHIFT

Raising concerns about unsafe working conditions can be daunting for trainee doctors. **Dr Naeem Nazem** offers some advice

your clinical management. So what do you do? You could refuse to "make do" with what resources are available, but could that put patients at risk? And what about your colleagues? They could raise concerns if they wanted to, so do you really need to be the one to speak out?

It may be tempting to say nothing and maintain a low profile, but you must consider your patients' best interests. You should also think about your own position. For example, if one of your patients came to harm due to inadequate resources, how would you defend your lack of action?

Whether or not you raise concerns depends on many factors. It is best to consider the situation objectively. If you believe patients are genuinely at risk you should do what you can to resolve the issues. However, if you believe the problems are beyond your control, you should raise concerns in line with the GMC's guidance *Raising and acting on concerns about patient safety*. It states: "You do not need to wait for proof – you will be able to justify raising a concern if you do so honestly, on the basis of reasonable belief and through appropriate channels, even if you are mistaken." By adopting this approach, you will also be protected against recrimination under the Public Interest Disclosure Act 2013.

A nightmare rota

Consider the scenario. You are handed a "revised rota" that takes into account chronic staff shortages and notice you are now working even more anti-social hours than before. What can you do? Can you refuse to work, or should you accept whatever is imposed for fear of jeopardising patient safety?

Remember that patient safety can be affected by your presence as well as absence. If you are too tired to function properly, you are more likely to make errors that could lead to patient harm. The GMC's statement in April 2016 on refusing unsafe rotas (tinyurl.com/zeyksfj)

called in sick and she needs to go down to clinic. Although she doesn't say anything more, you both know the implication is that you are expected to "volunteer" to cover until other arrangements can be made.

So what do you do? You could of course say it is not your problem and wish her luck in finding cover – but what about the patients? And what about your own reputation? No one wants to be the doctor who fails to help out when things get tough.

You may think the obvious answer is that it is in the best interests of the patients for you to remain at work as long as possible. However, doctors are notoriously bad at recognising their own fatigue.

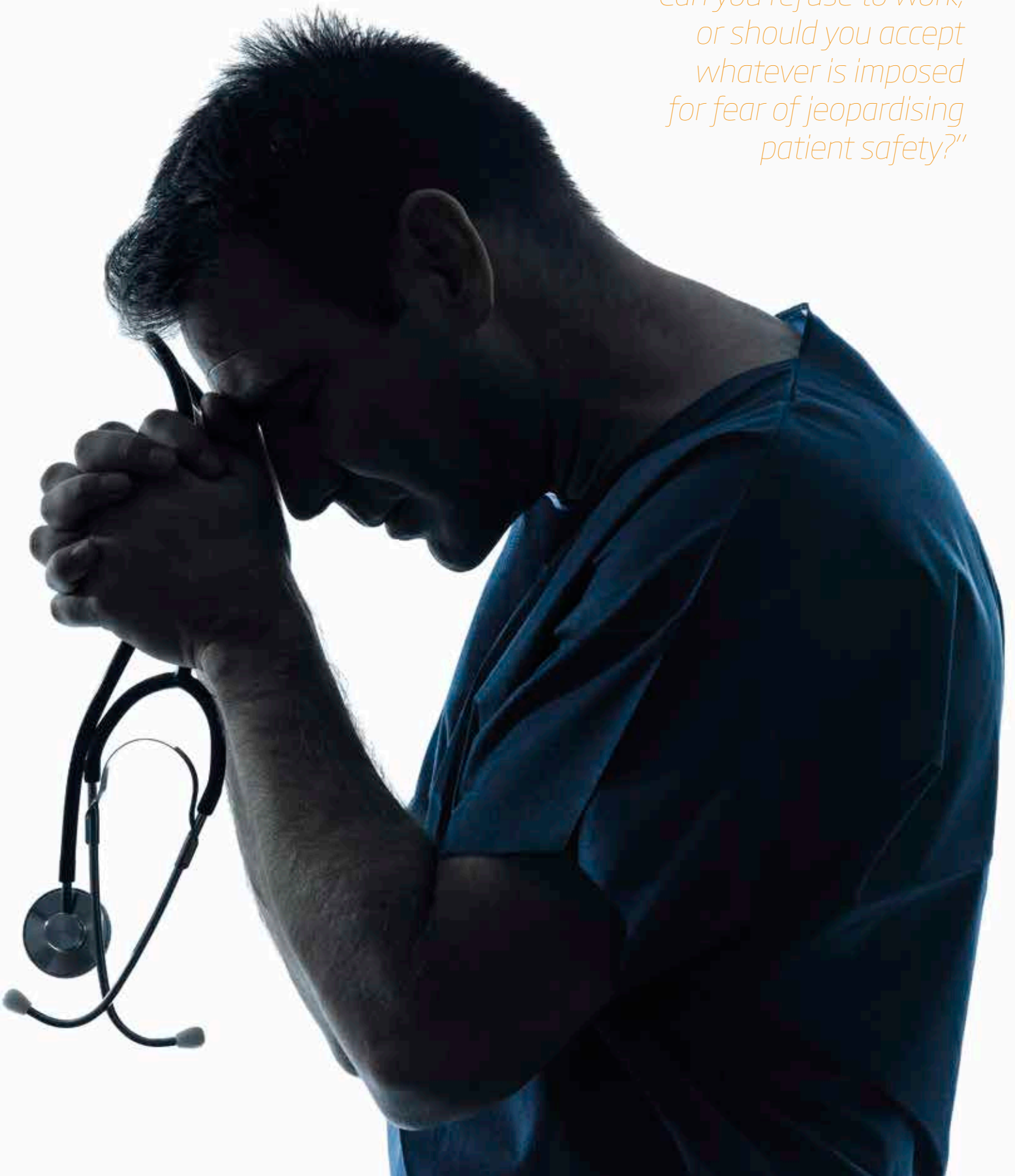
It is this desire to do good which maintains the public high regard for junior doctors – even during periods of strike action. But doctors need to remember that it is during times of fatigue that mistakes are more likely to happen. No patient will thank you if they come to harm as a result of your failure to recognise your own limitations.

No right answer

Working within inadequate systems can leave you feeling isolated and vulnerable to criticism. It is important to remember that you're not alone and help is available. First, take a step back to look at your situation. If you have genuine concerns that patient safety may be at risk, you should raise these with your consultant or other relevant persons within your hospital. Colleagues may also share your concerns and it is often easier to raise issues as a group. In addition, you can also discuss concerns with an MDDUS medical adviser. Provided you act in the best interests of patients, and keep a record of your actions, you should not be criticised for your actions.

Dr Naeem Nazem is a medical adviser at MDDUS

*"Can you refuse to work,
or should you accept
whatever is imposed
for fear of jeopardising
patient safety?"*



WE HAVE always been concerned about the hazards associated with innovation. Space travel, especially deep space flight, is no different. There have been calls recently to reassess the medical risks posed by planned long-term missions, such as those that are envisioned to take the first humans to asteroids and to the surface of Mars in the next two decades.

Travelling beyond the protective shell of the Earth's atmosphere and gravity has never been easy, but we have now been doing it for over 50 years and are getting much better at it. From Gagarin's first manned space flight in 1961, to Leonov's first space walk in 1965, to Armstrong's first footsteps on the Moon in 1969, to the launch of Columbia the first space shuttle in 1981 and the International Space Station (ISS) in 1998, the prospect of an earthbound humanity is becoming ever less likely.

Health hazards

In March of this year, the US astronaut Scott Kelly and the Russian cosmonaut Mikhail Kornienko returned to Earth after almost a year-long mission on the ISS, and the health of these men is now the focus of intensive studies. Interestingly, Commander Kelly's identical twin brother, former astronaut Mark Kelly, has been participating in a set of parallel clinical studies on Earth, acting as his brother's control. The brother in space arrived home two inches taller than his earthbound twin as a result of his year of weightlessness, but regained his former stature soon after being back on Earth.

Space is far from the weightless playground it might appear as we watch astronauts cavorting in near zero-gravity - tumbling, juggling with water droplets, even playing the guitar. The reality is an alien environment for which our bodies and our minds were never designed. Our muscles will atrophy and our bones thin as a result of weightlessness, while visual impairment, sometimes even for years after a mission, may result from pressure changes in the brain and spinal fluid.

One of the most concerning health hazards is increased radiation exposure, particularly with lengthy deep space missions to Mars, and the associated increased life-time cancer risk this would pose. According to recent results from NASA's Mars Rover Curiosity, a six-month flight to the Red Planet followed by a two-year stay and then a

six-month return flight would expose astronauts to a radiation dose of about 1010 mSv. To put that into perspective, each leg of the journey would be equivalent to the radiation dose from 24 CT scans, or more than 15 times the annual radiation allowance for a worker in the nuclear power industry. Some researchers consider that level of radiation manageable and acceptable, but it would violate NASA's current standard that caps the excess cancer risk for a given astronaut at three per cent.

But it's not just physical risks that are of concern. What about the psychological impact? Commander Kelly, himself, said shortly before he returned home: "Physically I feel pretty good...but the hardest part is being isolated in the physical sense from people on the ground who are important to you. There's a loss of connection." How much more disconnected might astronauts feel who, instead of seeing 'home' pass by several times a day out of their space station window, will be hurtling for months through the darkness of space on their way to Mars? Perhaps no more so than those who set off from the quayside to sail across uncharted seas for the first time heading beyond the horizon. As our ancestors first left sight of land, surely they would have experienced exactly the same sense of isolation, fear and disconnectedness. But, they would also experience the exhilaration of discovery and the thrill of adventure. Perhaps that is the price we need to be willing to pay for the sacrifice of ignorance?

Ethical principles

A report from the US National Academy of Science's Institute of Medicine released in April 2014 suggested that while NASA should not necessarily relax its current health standards for long-duration space travel, the agency should consider developing ethical guidelines on when exceptions to those standards should be made for deep-space voyages.

The Institute proposed a set of six ethical principles for space exploration, as follows:

- Avoid harm by preventing harm, exercising caution, and

"Manned" missions to Mars are a real possibility in the coming decades



RISKY



removing or mitigating harms that occur

- Provide benefits to society
- Seek a favourable and acceptable balance of risk of harm and potential for benefit
- Respect autonomy by allowing individual astronauts to make voluntary decisions regarding participation in proposed missions
- Ensure fair processes and provide equality of opportunity for mission participation and crew selection
- Recognise fidelity and the individual sacrifices made for the benefit of society, as well as honour societal obligations in return, by offering healthcare and protection for astronauts during missions and over the course of their lifetimes.

The chairman of the committee who produced this report, Jeffrey Kahn, said: "Astronauts put their lives and health at great risk for their country and humankind. Our report builds on NASA's work and confirms the ethical imperative to protect astronauts' health, while fulfilling the agency's mission of exploration."

Understanding risks

Space travel, of course, is not the first mode of transportation which has raised health concerns. Doctors at one time warned that another form of rapid transit, if constructed, "would cause the greatest deterioration in the health of the public, because such rapid movement would cause brain trouble among travellers, and vertigo among those who looked at [those] moving". No, not space rockets but trains – this according to the Bavarian Royal College of Doctors in the 19th century. Similarly, the Professor of

Natural Philosophy and Astronomy from UCL dismissed the prospect of the railway, arguing that "travel at high speed is not possible because passengers, unable to breathe, would die of asphyxia." The coming of the railways, and the reckless speeds that could be attained, frightened people and allowed so-called experts to make fools of themselves with equal ease. Space travel has been no different and continues to excite health and safety concerns to this day.

No one is arguing that space travel is completely safe and nor should they, but perhaps that is not the point. Surely, human endeavour and all that it entails is not about the avoidance of hazards but rather about understanding the risks involved so that adventurers, explorers and those who have blazed every trail that has ever been marked out – in this case astronauts – can make informed choices about whether to accept them.

"NASA," one commentator has noted, "has to decide whether it's really OK to ask someone to take those risks." However, the question is not whether NASA should ask; but how prospective astronauts should answer. Astronauts are autonomous adults, competent to make meaningful decisions on their own behalf, which they will be able to do when furnished with all the information available. Because we are operating at the edges of what is known, that information will always be incomplete. But this is the nature of adventure and it is that very sense of stepping into the unknown that is the incentive for many would-be astronauts to don a space-suit in the first place.

Sources

- www.nasa.gov
- *Health Standards for Long-Duration and Exploration Spaceflight: Ethics Principles, Responsibilities and Decision Framework* www.nap.edu/catalog.php?record_id=18576
- www.space.com

Dr Allan Gaw is a writer and educator from Glasgow

- but what are the ethical considerations in sending humans out into space?

ADVENTURE

PERSISTENT DYSPEPSIA

Day 1

Mr K is a 73-year-old retired taxi driver and presents at his local GP surgery complaining of stomach pain. He sees Dr L who records "epigastric pain, some relief from OTC (over the counter) antacids, feels lethargic, check FBC (full blood count)". The GP prescribes omeprazole for the patient and asks him to return in two weeks.

Day 23

A health check at his pharmacy finds Mr K's blood pressure is raised so he attends the surgery and is treated by Dr B. He finds the patient's BP is slightly elevated and discusses adjusting his hypertension medication dosage. He asks Mr K again about the stomach pain but is told it's been "no real bother". Dr B informs him his latest blood test was normal.

Month 3

Mr K attends the surgery for a lingering chest infection. He is seen by Dr L who prescribes amoxicillin. Again there is no further mention of stomach pains or indigestion.

Month 6

Mr K returns again complaining of recurring indigestion and stomach pain. He sees Dr B who notes the patient is now also reporting early satiety at meal times, loss of appetite, and weight loss. He has vomited a few times but with no haematemesis. Dr B finds epigastric tenderness on examination but no abdominal masses. Mr K is referred for "rapid access" endoscopy.

Month 4

Mr K returns a month later to Dr L, concerned about an elevated reading from his home BP monitor. The only note made for this visit states "BP 150/82" but the practice system shows that ranitidine, 150mg tablets, twice daily, was also prescribed. This suggests a return of the epigastric pain Mr K complained of a few months ago.

Month 6

A week later a hospital endoscopy on Mr K reveals two ulcers and nodular mucosa at the gastro-oesophageal junction with biopsies showing "no evidence of dysplasia or malignancy". A CLO test is positive for *H. pylori* and Mr K then attends the GP surgery and is prescribed "triple" eradication therapy (lansoprazole, amoxicillin, clarithromycin).

Month 19

The consultant requests a review endoscopy for three months later but an admin error causes a 10-month delay. Afterwards the nurse endoscopist reports moderate atrophic gastritis and a deformed pylorus which is difficult to enter. A gastric biopsy finds poorly differentiated adenocarcinoma. A CT scan and laparoscopy confirm a gastric antral tumour.

SIX MONTHS later solicitors representing Mr K's widow lodge a clinical negligence claim against Dr L for failure to timeously refer the patient for suspected stomach cancer.

MDDUS instructs two experts to provide opinions - a primary care physician and a consultant histopathologist. The primary care expert is critical of aspects of the first consultation with Mr K in regard to the patient records. Dr L did note the reported epigastric discomfort but did not record whether he had asked how long the pain had been present, precipitating factors, any loss of appetite or weight, eating or swallowing problems. There is also no record of an abdominal examination.

NICE guidelines call for urgent referral of patients over 55 years of age with unexplained or persistent recent-onset dyspepsia and particularly with dysphagia, vomiting, abdominal pain and weight loss. But the expert does not feel that this description strictly applied to Mr K in the first consultation with Dr L.

In regard to the later consultation that resulted in a ranitidine prescription - the expert feels this is clear evidence of persistent dyspepsia but there is nothing in the records to indicate how this was assessed via history and examination. In his opinion this consultation and the failure to refer the patient for an urgent endoscopy fell below an expected standard.

The expert histopathologist re-examines the tissue samples provided from the gastric and oesophageal biopsies taken in the first and follow-up endoscopies. In his opinion the first biopsy showed severe helicobacter-associated gastritis but also contained several groups of "rather bland cells suggestive of adenocarcinoma" which appear to have been missed by the reporting histopathologist, though he acknowledges identification can be difficult. The subsequent administrative scheduling error in the follow-up endoscopy led to an even further delay in diagnosis.

In the end the case against the GP - Dr L - was discontinued but a separate claim against the hospital was settled out of court.

KEY POINTS

- Record all key findings in history and examination to justify clinical decisions.
- Ensure consideration of best practice guidelines in clinical decision-making.
- Have a low index of suspicion in elderly patients with persistent and unexplained dyspepsia.

Month 31

Mr K dies in hospital of metastatic gastric carcinoma.

OUT THERE

TOP TACHE Facial hair could be the secret to securing a top job in medicine, according to a study by University of California San Francisco researchers. They found there are more senior doctors with moustaches (19 per cent) than there are senior female doctors (13 per cent).

TEETH TUMOUR Brain surgeons operating on a four-month-old boy diagnosed with a benign craniopharyngioma found a number of teeth growing inside it. The slow-growing tumour develops near the pituitary gland from nests of tooth-forming epithelium which contain deposits of calcium. Teratoma tumours have also been found to contain teeth.
Source: medicaldaily.com

ANCIENT NOSE JOB The first surgical rhinoplasty dates back to ancient Egypt and ancient India around 3000-2500BC. The Edwin Smith Papyrus, the oldest known surgical text, describes using a leaf to gauge the size of living cheek skin that would be dissected and attached to the nose.



WHAT ARE WE LOOKING AT?
Stumped? The answer is at the bottom of the page

PHOTO: DAVID M. PHILLIPS/SCIENCE PHOTO LIBRARY

Pick: DVD - The Knick (season 1)



Created by Jack Amiel and Michael Begler. Directed by Steven Soderbergh. Starring Clive Owen, Andre Holland, Jeremy Bobb, Eve Hewson.

WITH so many medical dramas around, audiences can often feel there is nothing new to see. Not so with this thrillingly gory, beautifully-shot drama that delves into the world of the Knickerbocker Hospital in 1900 New York. Clive Owen (pictured), stands out as pioneering, arrogant chief surgeon John "Thack" Thackeray: an unpredictable genius struggling to control a cocaine addiction while

pushing the boundaries of medical practice. There are few "routine" procedures at a time when so many basic life-saving innovations have not yet been invented. Social issues are skilfully observed, including the racism faced by talented black surgeon Algernon (Holland), the impact of illegal abortion, and the bleak healthcare options for the poor. Add to that an excellent turn by corrupt, prostitute-loving hospital manager Barrow (Bobb), and wide-eyed country nurse Lucy (Hewson) whose innocence rapidly disappears once she walks through the Knick's doors.

Book Review: The Gene: An Intimate History

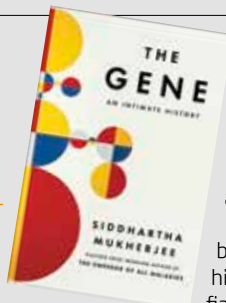
By Siddhartha Mukherjee **Bodley Head, £25 hardcover**

Review by Jim Killgore, associate editor

"IT has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material."

This example of "supreme understatement" can be found in the 1953 *Nature* article by James Watson and Francis Crick detailing the molecular structure of DNA and it is just one towering milestone celebrated in Siddhartha Mukherjee's artful new "intimate history" of the science of genetics. Mukherjee is an assistant professor of medicine at Columbia University and a stem cell biologist and cancer geneticist. He is also a talented science writer and his *The Emperor of All Maladies: A Biography of Cancer* won a Pulitzer Prize in 2011.

This new book is "intimate" first in its focus on key personalities involved in the epic discovery and elucidation of the gene, from the early observations of inborn "likeness" by Greek scholars to the meticulous work of the Augustinian monk Gregor Mendel demonstrating inheritance in pea plants, carried out at the same time as Darwin postulated his



theories of evolution through natural selection, to further work on genetic traits in the fruit fly by cell biologist Thomas Morgan and the subsequent search for the "missing" biochemical mechanism that makes it all possible, in which Watson and Crick were so instrumental.

"Message; movement; information; form; Darwin; Mendel; Morgan: all was writ into that precarious assemblage of molecules."

Mukherjee's history is also intimate not just in his research interest but through the interplay of genetics in his own family where there is a history of schizophrenia, such that he felt compelled to inform his fiancée: "It was only fair... that I should come with a letter of warning."

The structure of the book is chronological, sidestepping through the major developments in genetics by scientists working in partnership or competition or sometimes - as with Mendel - in painful isolation. Mendel's seminal paper was not "rediscovered" until 1900, after his death, by the English biologist William Bateson who later wrote: "When power is discovered, man will always turn to it... The science of heredity will soon provide power on a stupendous scale."

It is a prescient observation that Mukherjee explores in the latter half of the book, looking at the growth of biotechnology, the vast and even "dangerous" potential of recombinant DNA, cloning, gene therapy and the sequencing of the entire human genome, recording our evolutionary history in the carcasses of inactivated genes "littered throughout its length, like fossils decaying on a beach".

This is a profound and engrossing book.

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