FYi
ISSUE 15

DIGITAL DOCTORS

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Welcome to your FYi

FOR the first time, statistics show there are now more over-65s in the UK than there are under-16s. As life expectancy rates rise, it is clear that whatever specialty we choose trainee doctors will increasingly be called upon to undertake clinical rotations caring for older people. In his article on **page 6**, MDDUS medical adviser Dr Greg Dollman looks at some of the key elements of caring for this patient group – focusing on the need for compassion, respect and dignity.

We all know what it's like to work a busy shift with a never ending to-do list. But no matter how much we want to get out the door at the end of the day, it is crucial to leave time to handover relevant, accurate information to ensure patient safety. MDDUS medical adviser Dr Naeem Nazem offers advice on **page 10**. With so many medical apps on the market, it is more important than ever to carefully consider which ones we use. Our article on **page 12** provides some tips on choosing and using them wisely.

Can pursuing interests outside medicine make us better doctors? Dr Allan Gaw investigates on **page 4**.

All doctors must demonstrate competence in 15 core procedures by the end of their first foundation training year. On **page 5**, F1 doctor Priya Mistry shares her experiences of carrying out intramuscular injections, ECGs and peak flow.

It's one of the most competitive specialties - our career article on **page 8** looks at cardiology.

Finally, on **page 14** we follow the case of a man whose suspected heartburn turns out to be far more serious.

- **Dr Anne Parfitt-Rogers**
  Editor

PHOTOS: RON CATHRO

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GMC PUSHES FORWARD WITH SINGLE MEDICAL LICENCE EXAM

PLANS for a single exam to assess all doctors seeking to practise in the UK have been given the green light by the General Medical Council.

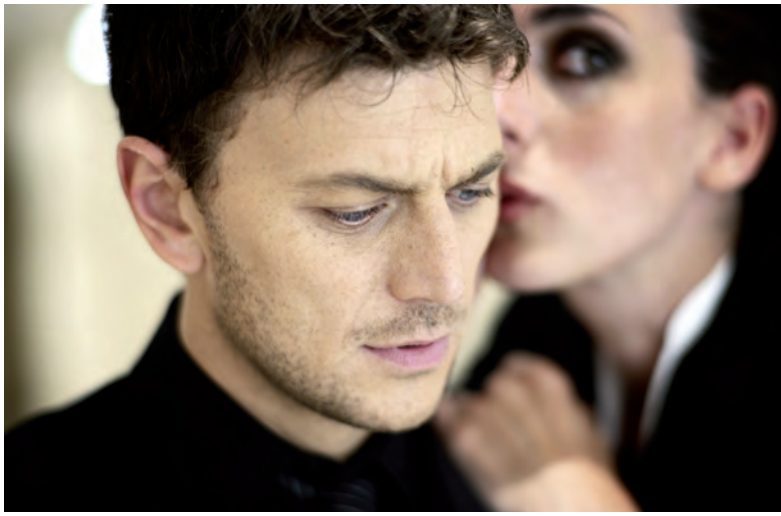
All UK and international medical graduates (IMGs) would have to sit the test before being granted a licence to practise medicine. It is hoped EU graduates would also take the exam, but it is not yet clear how this would be enforced due to European rules on freedom of movement.

The GMC has approved a plan to work with partners to develop the new test, provisionally titled the UK Medical Licensing Assessment (UKMLA). It would replace the Professional and Linguistic Assessments Board test (PLAB) which is currently only taken by IMGs.

GMC Chair Professor Terence Stephenson said: "We believe it would be fairer and more reassuring for the public for there to be a standard for entry to the register that everyone can rely on. Over time we are confident that the UKMLA will help to drive up standards and that it could become an international benchmark test for entry to medicine.

"Our aspiration is that this assessment should apply to any doctor joining the medical register."

Chair of the BMA's council Mark Porter said he looked forward to seeing how the GMC's proposals would work in practice, adding: "Patient safety should be a priority, [but] it is also important that the process of examination is not overly burdensome for those who have just graduated from UK medical school training."



NEW MEASURES TO SUPPORT SCOTTISH WHISTLEBLOWERS

WHISTLEBLOWING cases in Scotland are to be scrutinised by a new independent national officer.

The officer will be responsible for reviewing the way cases are handled by NHS Scotland as part of a package of measures to protect whistleblowers unveiled by the Scottish Government.

"Whistleblowing champions" will also be appointed to each health board as an "oversight and assurance mechanism", extra training will be provided for NHS staff, and legislation will be introduced to create a statutory duty of candour.

It follows the recommendations made by Sir Robert Francis QC in his *Freedom to Speak Up* review which looked at the treatment and experiences of whistleblowers across the UK.

Similar measures are being introduced in England and Wales with recently announced plans for a national 'whistleblowing' lead to be located in the Care Quality Commission, *'Freedom to Speak Up* Guardians' to be appointed in all local NHS organisations and whistleblowing training for healthcare workers.

SLEEP-DEPRIVED CONSULTANTS POSE RISK

SEVEN in 10 consultants never have rest time after a busy night on call, according to BMA figures.

A survey of 847 consultants in England and Wales found that 71 per cent never have access to rest time following a night spent on call when their sleep had been disturbed, and a further 10 per cent said that such rest was rare.

Almost nine in 10 consultants (88 per cent) reported being on an on-call rota, with just under half called to attend hospital mid-week, rising to two-thirds at weekends. Anaesthetists and surgeons were most likely to be called to attend hospital, with average call-out times being three hours during the week and six hours at weekends. Dr Paul Flynn, chair of the BMA Consultant Committee said: "Sleep deprivation can impair judgement and decision making, skills that are vital for doctors. With workloads rising and moves to deliver more services out of hours, the government must make safe working a priority."

HIGHER FEES FOR RCGP TRAINEES

TRAINEE GPs will pay almost £600 more in membership fees, the Royal College of GPs has announced.

This will be partly offset by a reduction in examination fees and new tax breaks in a package of measures designed to "rebalance" costs and ensure "fairness and greater transparency".

The new pricing structure will have particular benefits for those studying part-time and those who have to sit the exam more than once as they had previously been unable to take advantage of some discounted rates.

However, those who pass first time will pay more. From July 2015, trainees completing the programme in three years will pay £595.43 more for associate in training (AiT) membership with the RCGP, while the costs of sitting the clinical skills assessment and applied knowledge test will drop by £409.

The College also hopes trainees will take advantage of arrangements that allow all tax paid on exam fees (around 40 per cent) to be reclaimed from HMRC via normal tax returns. For the majority of trainees, this could be worth around £500 to £600.

EMOTIONAL RESILIENCE TO BE PART OF MEDICAL TRAINING

DOCTORS will be expected to show they have developed "emotional resilience" before completing specialty training.

It is one of a number of "core professional values" identified by the General Medical Council as being "essential to delivering safe and effective patient care."

The regulator has published a draft framework for consultation, setting out the knowledge, skills and behaviour it thinks all doctors should know about, and which should be made part of specialty training.

A number of new "generic professional capabilities" will be integrated into learning programmes with the aim of developing a doctor's "professional identity and preparing them for practice".

"The generic outcomes require the holistic development of the doctor as a professional and are not simply achieved by ticking boxes for individual tasks or competences," the report added.

Royal colleges and faculties will be required to report to the GMC on trainee doctors' performances for each outcome to ensure they meet the required standards.

The move to include emotional resilience in specialty training was first touted last year after research showed 28 doctors had committed suicide while under GMC investigation between 2005 and 2013.

Responding to the draft framework, former RCGP chair and medical director of the Practitioner Health Programme Professor Clare Gerada told *Pulse*: "Resilience is a difficult area to study, there's no single definition, there is no systematic trial and there are no outcome measures."

She added: "[S]omething else needs to change and I would say it's the environment that they are working in."

The core values set out in the draft framework fall largely in line with the GMC's *Good Medical Practice* guidance. They include ensuring patient confidentiality, showing respect for others, and being able to learn and reflect on their professional practice. Others relate to practical and clinical abilities, as well as communication skills and basic principles of public health.

The consultation runs until September 22 on the GMC website.

NEW GUIDANCE ON DUTY OF CANDOUR

DOCTORS should admit mistakes and apologise to patients, according to new duty of candour guidance from the General Medical Council.

Patients should also expect a face-to-face explanation when things go wrong.

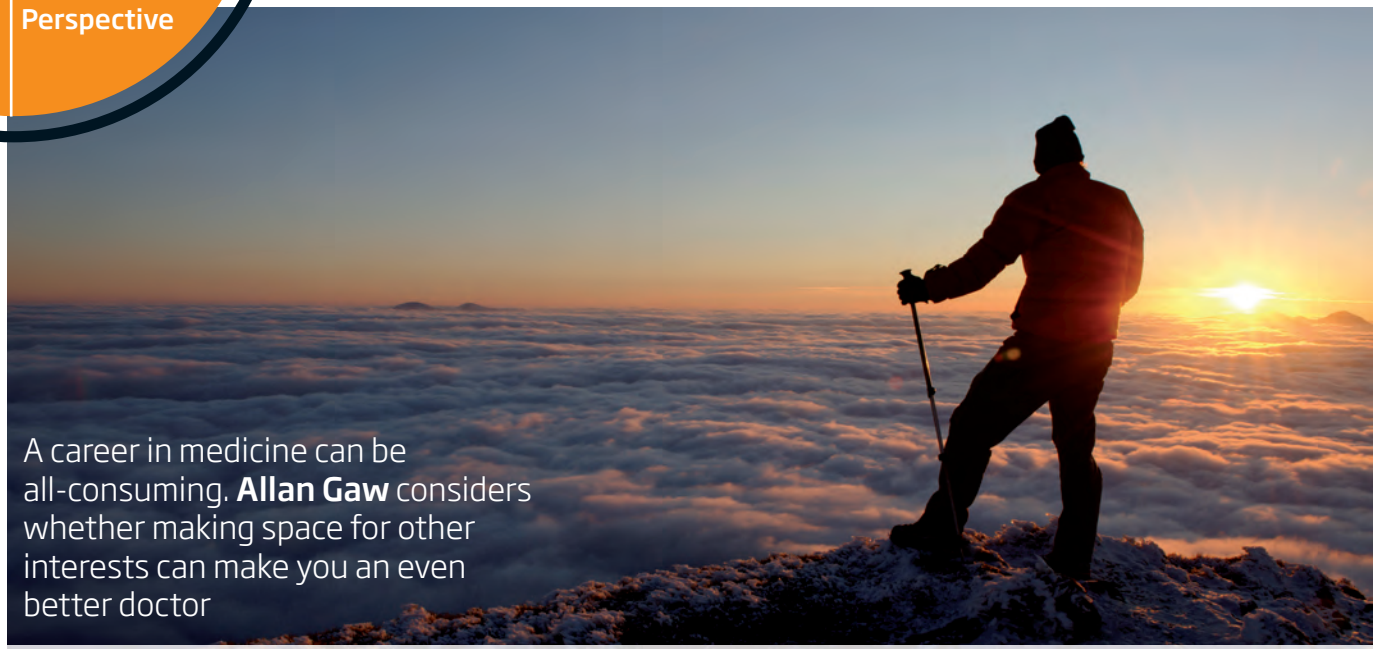
But the regulator made it clear that clinicians must have the support of an "open and honest working environment where they are able to learn from mistakes and feel comfortable reporting incidents that have led to harm."

Rules came into force in England at the end of last year placing a legal duty on hospital, community and mental health trusts to inform and apologise to patients where mistakes have led to significant harm. Now these new guidelines from the GMC place a professional obligation on individual doctors.

GMC Chief Executive Niall Dickson said: "We recognise that things can and do go wrong sometimes. It is what doctors, nurses and midwives do afterwards that matters.

"If they act in good faith, are open about what has happened and offer an apology this can make a huge difference to the patient and those close to them."

Read the new guidance in full on the GMC website.



A career in medicine can be all-consuming. **Allan Gaw** considers whether making space for other interests can make you an even better doctor

AN ENLIGHTENED BALANCE

IN the headlong rush towards achieving our professional goals, there are many hurdles we must negotiate. Success, when it comes, is sweet: the examination passed, the job secured, the award bestowed.

But, modern medicine can be an all-consuming affair that leaves little time or energy for anything else—or at least so it seems. In fact, many doctors, including the most successful in their fields, have nurtured other complementary interests while they pursued memorable medical careers. And, perhaps it was the balance they struck that allowed them to achieve so much.

Two notable examples were contemporaries in the 18th century – an Age of Enlightenment from which we can still learn much today.

William Withering was born in Shropshire in 1741 and studied medicine at Edinburgh. A successful physician, he was reputed to have had the largest practice outside London. Despite this, he adopted the philosophy of the Enlightenment that an educated man should endeavour to learn all that it was possible to know. Correspondingly, his interests and his work crossed a range of disciplines.

He was a celebrated botanist and published an important book on the subject in 1776, which in various editions would be in print for the next century. He was also a geologist and indeed his election as a Fellow of the Royal Society was on the basis of this pursuit. Although Withering had both a plant and a mineral named in his honour during his lifetime, it is not the cream coloured crystal of barium carbonate that was named Witherite nor the small Costa Rican shrub, Witheringia, that earned him a place in the medical history books. Instead, it is for his work on the foxglove and his description of the pharmacological effects of digitalis that he will be remembered.

Edward Jenner, another 18th century physician, was also a man of the Enlightenment and pursued equally diverse interests. He was a musician, a poet, a balloonist, a geologist and it was his interest in ornithology that earned him his Fellowship of the Royal Society.

He worked out that it was the cuckoo hatchling that evicted the eggs and chicks from its foster parents' nest and not the adult bird, as many had thought. This observation was for many years disputed, but Jenner was vindicated almost a century after his death when, in 1921, the first photographic evidence supporting his conclusions was filmed.

"Between one world and another, there is a greater chance of cross-fertilisation... with more diverse results"

But, it is not for the study of the cuckoo that we best remember Jenner today – it is his contribution to the field of vaccination.

For both Withering and Jenner these alternatives to their medical careers were not mere past-times, but scientific passions pursued with vigour. And of course it is not hard to see how one interest may have affected the other. Withering's literally encyclopaedic knowledge of botany would have informed his work on the foxglove, and Jenner's detailed observational skills, honed while bird-watching, doubtless helped him evaluate the effects of cow pox inoculation.

A diversity of interests can certainly keep one from becoming stale, but it does more than that - a range of interests can also offer the potential for synergy.

Rosamund Harding wrote in her 1942 book, *An Anatomy of Inspiration*: "It is a fact that has not yet been sufficiently stressed that those people who have risen to eminence in arts, letters or sciences have frequently possessed considerable knowledge of subjects outside their own sphere of activity."

It is said that the most beautiful flowers grow at the edge of our gardens where one plot abuts on to the next. At these edges, between one world and another, there is a greater chance of cross-fertilisation with richer and more diverse results as a consequence. Perhaps that's what Harding was alluding to when she talked of the value of diversity?

In 1996, the late Steve Jobs reiterated this notion, emphasising the importance of building a broad personal portfolio of experiences and ideas to connect: "Creativity is just connecting things... A lot of people... haven't had very diverse experiences. So they don't have enough dots to connect, and they end up with very linear solutions... The broader one's understanding of the human experience, the better design we will have."

A career in medicine offers one set of dots to connect, but the pursuit of other subjects gives a richer, more sophisticated and diverse collection with which to work.

In short, the more we do, the more we experience and the more diverse those experiences are, the better equipped we are to face any problem. As doctors we should, of course, work to be the best we can, but along the way we should not discard our other interests. Whether it be music, or art, or even crystals and cuckoos, it is about finding balance.

Dr Allan Gaw is a clinical researcher and writer in Glasgow

MASTERING CORE SKILLS

Dr Priya Mistry gets to grips with three more core skills that all trainees must perform

F1 DOCTORS must demonstrate competence in 15 procedures to become eligible for full GMC registration. Here are some helpful tips on performing intramuscular injections, performing and interpreting ECGs, and performing and interpreting peak flow.

Performing intramuscular injections

I first performed this skill on my complex care placement, administering naloxone to a patient with an opiate overdose. IM injections are typically given by nurses (politely ask to be shown how), so once I prescribed it, I asked the nurse to allow me to administer it.

I set up the equipment using good aseptic non-touch technique (ANTT), starting with washing my hands and drawing up the medication.

There are two common sites for IM injections to be administered. The middle-third of the deltoid is generally used for small injections in patients who are not cachectic. Alternatively, the upper outer quadrant of the gluteal region may be used. To visualise this, I imagined the midpoint of a line drawn from the greater trochanter of the femur to the posterior superior iliac spine. The injection site should be slightly superior and lateral to this point to minimise the risk of damaging the sciatic nerve.

I stretched the skin taut and inserted the needle at a 90 degree angle, holding it like a pen and warning the patient of a sharp scratch. I drew back before injecting to ensure that I hadn't hit a vessel by checking no blood was aspirated. I then injected slowly and made sure the patient was comfortable. Once I completed the procedure, I signed and documented it in the drug card.

Performing and interpreting ECGs

My first attempt at performing an ECG came during an on-call shift on a patient with tachycardia who turned out to be in fast AF. ECGs can be difficult to interpret so it is useful to discuss them with a senior if you are unsure. As with any investigation, I ensure I compare it against previous ECG traces for that patient – this lets me know if the LBBB or T-wave inversion I'm seeing is new or not.

When performing ECGs the patient's chest must be exposed so I would always draw the curtains to maintain the patient's privacy and dignity. The ECG leads are comprised of six chest leads and four limb leads. Correct lead positioning is extremely important in producing a good quality ECG. In females, I have learned it is preferable to place the electrodes under the breasts rather than overlying them.

Before carrying out the procedure, I entered the patient details into the ECG machine, and inspected the screen to see whether all traces are clearly visible. I have found common artefacts which may be encountered include patient movement leading to a 'wandering baseline' and chest lead reversal causing abnormal progression in the R-wave size from V1 to V6.

I was taught a simple systematic approach to interpret ECGs: rate; rhythm and the presence of P-waves before every QRS complex; axis; QRS morphology including BBB; ST elevation/depression; and T-wave morphology. Use a systematic approach with which you are familiar. A structured approach can help your ECG interpretation and facilitates good documentation. I have learned that ECG traces should be interpreted in the context of a given patient's clinical status to minimise the risk of missing anything pertinent.

Performing and interpreting peak flow

Peak flow assessments are a simple non-invasive test that can be performed quickly at the bedside. You can get this signed off early in your FY1 year. They are most commonly performed on respiratory wards and in pre-op clinics.

I have found that abnormal readings are often due to poor technique rather than pathology but explaining correct technique in a clear and concise manner can help to avoid this. I found that it was best to explain the procedure to the patient and then perform a demonstration with the peak flow meter. The demonstration can also help prevent patients feeling embarrassed when performing the test.

I find it is useful to repeat the test three times and select the best peak expiratory flow rate (PEFR) reading for interpretation. I would then ideally compare these results to the patient's own PEFR values from within the last two years, but these may be based on predicted values estimated using the patient's sex and age. You can often access these charts online. I've learned that a value less than 50 per cent of previous or predicted values indicates a severe airway obstruction. As before, I would always interpret PEFR alongside my other investigation findings and clinical assessment of the patient.

Completing the 15 procedures is a vital part of completing the FY1 year, so try to be organised and get them signed off as early as possible. Before starting FY1, have a think about which placements would give you the best opportunities to practise each skill. For example, you can often administer local anaesthetic on your surgical placements but rarely in psychiatry.

FY1 is a huge learning curve but with a bit of forward planning and proactivity you can become more confident in your clinical practice and use of skills.

Dr Priya Mistry is a foundation year one doctor based in Bolton

An aging UK population means that trainee doctors will increasingly face older patients with multiple morbidities. MDDUS adviser **Dr Greg Dollman** offers advice

CARE WITH COMPASSION

THE number of people in the UK aged over 65 now outnumbers those under 16 for the first time, with life expectancy rates predicted to hit almost 86 years for men and 88 for women by 2030.

While falling mortality rates are to be welcomed, this raises important issues for trainees. The growing elderly population has significant (and often complex) medical needs and doctors are increasingly required during their training to undertake clinical rotations caring for older patients.

These challenging jobs provide doctors with the opportunity not only to increase their professional and clinical skills but also to offer holistic care, working with patients and those close to them as well as the broader healthcare team.

In recent years concerns have been raised in the media regarding the care of older patients. These revelations have resulted in far-reaching inquiries and investigations, with subsequent changes to law and greater professional education and guidance. For example, The Care Act 2014 places a duty on doctors to take necessary steps to protect adults at risk of abuse or neglect, and the General Medical Council (GMC) regularly updates its guidance *Better care for older people*.

Clearly older patients will often have increased physical and mental health needs compared with other patients, but individual care should be structured around the key elements of compassion, respect and the preservation of dignity.

"Learn to adapt your usual frenetic pace, taking time to consult with older patients"

Do not discriminate, do not rush

The GMC's *Good medical practice* states that a doctor must be polite and considerate, and must not discriminate against patients. When caring for older people, doctors must be patient and respectful, working in partnership to share with them the information they will need to make decisions about their care. Doctors must learn to adapt their usual frenetic pace, taking the necessary time to consult with older patients. These encounters may be slower than with other patients, owing to physical limitations (from sensory impairment to mobility issues) or cognitive concerns.

Mental capacity

In England and Wales, the Mental Capacity Act 2005 (MCA) holds that all adults are presumed to have capacity unless it is proved otherwise, while the Adults with Incapacity (Scotland) Act 2000 makes similar provisions north of the border. Both state that a doctor must not assume that a patient is unable to make their own decisions owing to their age or medical condition. An older patient may, however, require assistance and a doctor has a statutory duty to encourage and support people in reaching their own conclusions. Even if a patient is found to lack capacity, the laws state that the person must be involved as far as possible in decision-making.

Decline in cognitive functioning, owing to acute or chronic conditions such as delirium and dementia respectively, may affect an older person's ability to make a particular decision at a particular time. The MCA is regarded as a two-stage functional test of capacity: an impairment of or disturbance in the functioning of the mind or brain must exist, which sufficiently affects a person's capacity to make a particular decision. A patient will be considered to lack the capacity to make a decision if they are unable to understand, retain and weigh up the information relevant to the decision, and communicate this decision (by any means). If a patient is only temporarily unable to make a choice, decision-making should be postponed if at all possible to a time when the patient has capacity. All doctors should be able to undertake this essential assessment, and should seek the assistance of a senior member of the multidisciplinary team if they are in doubt as to a patient's capacity.

Involving loved ones

An older person with capacity may ask that a family member or another person close to them make decisions on their behalf. The GMC's *Consent* guidance reminds doctors that no one else can make a decision on behalf of an adult who has capacity. A doctor should explore a patient's wish not to be involved in decision-making, and should respect this as far as possible (certain information must still be shared, such as that required in order to give consent to a proposed investigation or treatment).

Similarly, those close to an older patient may wish to discuss their concerns about the patient's health. The GMC's *Confidentiality* guidance states that a doctor should not refuse to listen to a patient's partner, carers or others on the basis of

confidentiality, but must consider whether the patient would regard such a discussion as a breach of trust (especially if they have asked the doctor not to involve certain people).

In the absence of an advance decision or legal authority, any decision made for a patient who lacks capacity must be made in the patient's best interests, taking into account their past and present wishes and feelings, beliefs and values. The patient's preferences may be highlighted by those close to the patient as well as the healthcare team.

Addressing concerns, making decisions

Doctors should proactively seek the preferred medical management of a patient nearing the end of their life, if they have not otherwise objected. Furthermore, doctors have a legal and professional obligation to involve patients and those close to them in "do not attempt cardiopulmonary resuscitation" (DNACPR) decisions (unless this would cause significant harm). In their guidance *Treatment and care towards the end of life*, the GMC encourages doctors to make sound clinical judgement, explain the clinical issues and support patients and their loved ones during emotional and uncertain times. Doctors are reminded to share information about advance care plans, advance decisions and lasting power of attorney (England and Wales)/welfare attorney (Scotland).

Caring for older patients is a privilege and an important responsibility. The GMC provides a useful summary when considering the care of older patients generally when it states:

"You must give [these] patients… the same quality of care as all other patients. You must treat patients and those close to them with dignity, respect and compassion, especially when they are facing difficult situations and decisions about care. You must respect their privacy and right to confidentiality".

Dr Greg Dollman is a medical adviser at MDDUS

Link:

- GMC – *Better care for older people:* **tinyurl.com/qhfpvc3**

AT THE HEART OF MEDICINE

The dynamic specialty of cardiology offers a broad range of career opportunities at the cutting edge of medicine

CORONARY heart disease is the leading cause of death in the UK, claiming more than 73,000 lives every year. These stark figures are among the key factors driving efforts to more effectively prevent, diagnose and treat this condition, helping to make cardiology one of the most innovative and dynamic medical fields.

Managing coronary heart disease patients forms only part of a cardiologist's role. They also treat those with heart failure, arrhythmias, cardiomyopathy and more, undertaking invasive procedures such as catheterisations and fitting pacemakers, along with non-invasive imaging and cardiovascular clinical pharmacology.

There is a strong focus on working within multidisciplinary teams and a wide range of sub-specialty areas to pursue, as well as varied research opportunities.

Entry and training

Doctors looking to enter the specialty must successfully complete both foundation and core training programmes. For the latter, there are two available routes: core medical training (CMT) or acute care common stem - acute medicine (ACCS-AM). Trainees are also expected to achieve full membership of the Royal College of Physicians (MRCP(UK)) before progressing to the next level of training (ST3 – ST7). They will also have to register with (and pay the relevant fees to) the Joint Royal Colleges of Physicians Training Board (JRCPTB) at the start of specialty training.

Cardiology specialty training (beginning at ST3) takes five years. The first part consists of three years of core cardiology training, including training in general internal medicine. This is followed by two years of advanced modular training in either (or with combinations of): interventional cardiology; electrophysiology and devices; imaging (echo, MR,CT and nuclear); adult congenital heart disease; heart failure; academic cardiology or inherited cardiovascular conditions.

For trainees who wish to dual certify with general internal medicine (GIM), up to one extra year is usually required, the total time being dependent on previous GIM training within the core years.

Dr Ian Wilson, consultant cardiologist, VP of training for the British Cardiovascular Society and Chair of the RCP specialist advisory committee, said: "Upon completion of this programme, we have a general cardiologist (or cardiologist/general physician) trained to deal with all acute cardiological emergencies presenting to the 'front door', but with advanced skills in a cardiology subspecialty.

"The modern trend is for teams of cardiologists with different subspecialty interests to work together, providing front door emergency care along with a variety of local subspecialty services."

Cardiology is a very competitive specialty and trainees are advised to plan ahead to seek out ways to improve prospects and prepare thoroughly for interviews. It can be useful to carefully read the person specification, talk to the cardiology training programme directors, take every opportunity to publish (case reports, reviews, audits, etc), consider taking a higher degree (e.g. MD or PhD), and do what you can to "tick" the necessary boxes. Where appropriate, consider applying to less competitive deaneries to improve your chances of success.

The British Cardiovascular Society (BCS) runs an annual, one-day course for core and foundation level doctors who are considering specialty cardiology training, with the next event taking place on 23 October, 2015 at the RCP, London. A Career in Cardiology aims to improve delegates' chances of securing a cardiology training post and includes specific sessions on the ST3 application process and mock interviews.

Advice can also be sought from the British Junior Cardiovascular Society (BJCA) who have recently established a free 'Starter BJCA' membership for foundation programme and core trainees interested in undertaking higher specialty training in cardiovascular medicine.

The job

Cardiologists are largely hospital-based, working closely with both community-based primary care doctors and other hospital specialists including diabetologists, nephrologists and cardiothoracic surgeons, as well as anaesthetists and the imaging specialties (e.g. radiology and nuclear medicine). Key members of the cardiology care team also include specialist nurses, cardiac physiologists and cardiac surgeons.

Consultants generally divide their time between inpatient and

outpatient clinical duties – including coronary care, investigation and interventional procedures – with some time in theatre or on the ward. Cardiologists may work some of their time as part of acute medical admissions teams looking after emergency medical admissions to acute medicine units.

Sub-specialisation within cardiovascular medicine has become commonplace with individuals focussing the development of their expertise in areas such as cardiac imaging, coronary intervention, heart rhythm disorders, adult congenital heart disease or heart failure.

RCP London figures show there are currently more than 700 people training in cardiology in the UK – a quarter of whom are based in London – with the vast majority (77 per cent) male. Specialists in this field are often categorised as the most high profile and practical-skill based of the medical specialties, with RCP London identifying the three key personality traits as: committed, dynamic and level-headed.

It is a field that is constantly changing and innovating. Looking to the future, the NHS Careers website predicts: "New imaging modalities such as magnetic resonance and CT scanning are likely to complement and challenge the invasive investigations performed in the cardiac catheter laboratory," adding: "The specialty is determined to evolve in a way which continues to make it attractive to the brightest medical graduates, irrespective of gender."

Cardiology may be a highly competitive and demanding specialty but treatment can make a real and immediate difference to both quality of life and life expectancy, making it a challenging but very rewarding field.

Sources

- NHS Medical Careers – **www.medicalcareers.nhs.uk**
- Joint Royal Colleges of Physicians Training Board (JRCPTB) - **http://www.jrcptb.org.uk/specialties/cardiology**
- The British Cardiovascular Society – **www.bcs.com**
- British Junior Cardiovascular Society - **tinyurl.com/oxkqgau**

Joanne Curran is an associate editor of FYi

Q&A – Dr Waqar Aziz, Cardiology SpR, St Thomas' Hospital, London

What first attracted you to cardiology?
I remember the first organ I learned about in school biology was the heart. In medical school I found myself drawn to everything related to the cardiovascular system and loved to work out ECGs. Working in cardiology I realised the range of treatments that patients can be offered and how the specialty is always on the cutting edge of biomedical technology. I loved the ability of cardiologists to save patients' lives – for example in acute MI – and the potential to very quickly improve a patient's quality of life whilst reassuring others about their cardiovascular health.

What do you enjoy most about the job?
I love using the latest cutting edge technology (i.e. fancy gadgets!) to benefit patients every day. I also enjoy learning skills that can potentially save a patient's life instantly such as percutaneous coronary intervention or emergency pericardiocentesis. Cardiology provides a great balance between clinical medicine and the use of the latest technology and procedure-based care.

What do you find most challenging?
Working in a busy specialty with a fast turnover of patients can make it difficult to keep abreast of the many developments whilst at the same time learning new procedural skills and having a personal life. However, this is not impossible. To survive in cardiology you must show dedication and hard work but at the same time have patience and learn to appreciate the road.

Has anything surprised you about the specialty?
The ability and willingness to incorporate new innovations into the care provided to patients is something that surprised me and continues to feed my unquenchable interest in the field. The multidisciplinary aspect, interacting with cardiac echocardiographers, physiologists, cath lab staff, CCU and ward staff and other specialties like cardiothoracics to provide essential care to patients was something that I only realised once I started working in cardiology.

What do you consider the most important attributes of a good cardiologist?
As with any medical specialty, attributes like empathy, kindness, team work, a strong work ethic, enthusiasm, perseverance and leadership are essential. As too are being willing to work outside of your comfort zone, being decisive, anticipating potential complications and knowing your limitations. Working with often critically ill patients and performing delicate procedures, you must be prepared for inevitable complications. Being able to enjoy the highs whilst persevering through these lows and supporting each other through these is what also makes a good cardiologist.

Is there any advice you could give to a final year or FY trainee considering cardiology?
Knowing which specialty you want to do is the most important first step, enabling you to set out the goals to achieve before joining higher specialist training. I would recommend pursuing the membership exams first and then try to obtain presentations/ publications in your chosen specialty. Sub-specialties cater for a range of tastes. Invasive ones include interventional cardiology, and devices and electrophysiology. Non-invasive ones include heart failure/ imaging and also adult congenital heart disease and inherited cardiac conditions. Remember this is a lifelong process of learning and you must enjoy the road whilst progressing towards your chosen destination.

IN SA

Finding time to handover relevant patient information during a busy shift can be challenging but it is vital for safe patient care, says MDDUS medical adviser **Dr Naeem Nazem**

WE HAVE all been there. A busy shift covering the wards. A chaotic admissions unit. Endless bleeps asking you to prescribe medicines, chase-up blood tests and review patients. It can often feel like your to-do list is growing faster than you can clear it.

So what is the solution? One obvious possibility would be to add things to the bottom of the list as you go along and methodically work your way through them from the top. However, as any foundation doctor knows, this is neither practical nor ethical when working in a clinical setting. The alternative, and more appropriate, strategy is to prioritise work as you go along according to clinical need.

As sensible as this approach appears, it inevitably leads to many smaller outstanding jobs at the end of your shift. You may have also been unlucky enough to have dealt with one or two very sick patients who consumed a disproportionate amount of your time.

So what do you do when your shift is coming to an end and it is time to handover to the next doctor? Do you pile them high with everything you haven't done and risk their disapproving stare? Or do you make light of everything and tell them "there isn't much going on" or "everything's fine" and make a sharp exit?

High risk

The British Medical Association defines handover as "the transfer of professional responsibility and accountability for some or all aspects of care for a patient, or a group of patients, to another person or professional group on a temporary or permanent basis." Clearly doctors don't just handover to another doctor at the end of their shift, they handover to many different colleagues on many different occasions throughout their work.

The risks associated with clinical handovers are considered a cause for concern by the World Health Organisation, the Royal College of Physicians, the Royal College of Surgeons, the Health Foundation and the GMC. Despite guidance issued by many of these organisations, there has been little improvement over the years and it remains one of the highest risks to patient safety.

Mistakes can happen in any situation that involves a handover. However, there is a significantly greater risk when patients are handed over between day and night duty, when they are admitted into the hospital and when they are transferred to a different ward. In all of these circumstances it is easy to see how crucial information may be missed in a busy setting, which is all the more reason to ensure you are not part of the problem.

Doing it right

A handover requires effective communication between at least two people. Imagine a scenario in which you are bleeped by a ward to see a patient who is still waiting from three hours before you even started your shift. Or you are contacted because your predecessor had requested staff bleep you to follow-up on their action plan, but you know nothing about the patient or this plan. Whilst it may be easy, and indeed human, to curse your predecessor for a poor handover, this will do nothing to improve your situation and will certainly be of little comfort to your patient. Unfortunately, we can't control our colleagues and what they tell us, but we can be responsible for what information we request and the environment in which we receive it.

Location, location, location

Consider the scene. You are about to start night duty covering the wards and the doctor from the earlier shift tells you he will pass over the bleep in the doctor's mess. You arrive to find him talking to several other colleagues in a busy room, whilst also getting ready to leave. He hands you the bleep saying "not much going on really" before muttering those fatal words: "hope it's a quiet one".

A clear and effective handover was always going to be difficult in this situation. Ideally, try to find a quiet location where you will not be interrupted. A handover is also something important enough to warrant both of your time, so don't feel rushed. Staying an extra 10 minutes or arriving 10 minutes early to make time for a good handover may be the most important part of your entire shift.

Essential details

You need to know what is going on and where, so you can prioritise your work and ensure important blood results or sick patients are not missed. If you are the one handing over to a colleague, remember you are their primary source of information. Don't rely on nursing or other members of staff to act as your safety net; they can get easily distracted with other responsibilities and it is not their job to ensure your work is carried out once it has been delegated to you.

Make sure what you do handover is relevant. No one wants to receive an exhaustive summary for every patient when starting a shift covering the wards, but similarly they need to know anything that may be important.

And always try to make sure what you handover is accurate. I remember starting one night shift being asked to certify the death of a patient in cubicle 3, bed 2. Unfortunately the deceased patient was actually in cubicle 3, bed 3. Needless to say the unsuspecting patient in bed 2 was in for a rude awakening when I promptly arrived to confirm his passing.

Think about your own experiences on receiving a good and bad handover. What difference did it make to your shift? What additional information was helpful? How could it have been better?

A handover template

This can be a very useful way of ensuring you don't miss important information. Your trust/health board may have its own internal handover template which you can print and use each time. Alternatively, many are available online. The Royal College of Physicians has developed a particularly good toolkit (available at **tinyurl.com/p53mk4z**). The Royal College of Surgeons has similar guidance from 2007 outlining the minimum level of information for handovers.

So remember, no matter how tempted you might be to escape after a hectic day, don't rush your handover. Ensure the information you give is relevant, accurate and includes all the essential details.

Dr Naeem Nazem is a medical adviser at MDDUS

FE HANDS

DIGITAL DOCTORING

With so many medical apps on the market, doctors have to be increasingly careful in deciding which ones are worth downloading

THE world of medical apps is an ever-expanding one populated by both the ingeniously innovative and the downright dodgy.

Who knew you could cure acne using the light from a mobile phone or augment breast size by blaring baby cries out of your device 20 times a day? Others claim to allow users to select the sex of their baby by entering certain times, dates and phases of the moon.

While the market is awash with apps making all manner of dubious medical claims, there are many that have proved popular with clinicians. There are tools to assist diagnosis, staging or treatment (such as calculating fluid requirements for burns patients), as well as countless others that can help monitor and promote general health and wellbeing.

Quality markers

With so much choice, it is important that doctors take a cautious approach, researching as much as possible the app's origins and reliability and looking out for positive/negative reviews by fellow healthcare professionals.

One helpful guide is to look out for the CE mark, indicating it complies with essential criteria set out under European law. This applies specifically to apps with a medical purpose (i.e. those supporting diagnosis or clinical decisions) which are defined by law as "medical devices" and regulated in the UK by the MHRA.

The first app to be officially registered by the MHRA was Mersey Burns just over three years ago. It is a popular clinical tool (available free for Apple and Android devices) for estimating burn area percentages, prescribing fluids using the Parkland formula, and recording patients' details (being mindful of confidentiality). It was developed by plastic surgeons at St Helen's and Knowsley NHS Trust and has won a number of innovation awards as well as favourable reviews.

In its April 2015 guidance *Using apps in clinical practice*, the Royal College of Physicians of London says doctors should not use medical apps, including web apps, that do not have a CE mark. It is worth ensuring that the specific version of the app you are using is CE marked, rather than relying on the general information in the online app store.

Apps which do not require a CE mark are those which do not use patient-specific information and only perform administrative functions. This might include those offering general guidance or supporting training.

While it is a useful indicator, the RCP goes on to state: "Unfortunately, even if an app has a CE mark, that does not mean that it meets best practice, has been tested for accuracy or benefits in clinical use, or is applicable to the patient/decision for which it is being used."

Most importantly, the College adds: "Always exercise professional judgement before relying on information from an app."

Popular apps

So what are some of the commonly used apps for doctors on the market? Those listed below have received positive reviews, but there are many others available. Doctors are advised to carefully consider any app before downloading and using it in clinical practice. The following are in no particular order (MDDUS doesn't endorse or approve any app):

NICE (National Institute for Health and Care Excellence)

Free; for Apple and Android devices

Access all NICE guidance on a variety of conditions and diseases as well as on public health topics such as smoking cessation and diabetes prevention. Browse by topic or type of guidance, search for keywords, or revisit bookmarked pages. Specific chapters or an entire guideline can be easily shared by email.

NICE BNF

Free; Apple and Android

Available to NHS staff in England, Scotland and Wales, this offers a useful offline reference for the *British National Formulary*. There is up-to-date practical information on prescribing, dispensing and administrating medicines that can be easily searched or browsed. An NHS Athens account is required to activate the app. Described as useful by many, although some recent reviews have complained of technical glitches/crashing.

MIMS (Monthly Index of Medical Specialties)

£9.99 for a 12-month subscription to content updates; Apple and Android

MIMS is described as the essential prescribing and drug reference guide. For over 50 years it has provided medical professionals with information on medicines licensed in the UK, including drug dosages, warnings, contraindications and adverse events. It is said to be accessed over 450,000 times every month by UK GPs. The app downloads the whole database to your device (no internet access required) which can be easily searched from anywhere in the app.

SIGN (Scottish Intercollegiate Guidelines Network)

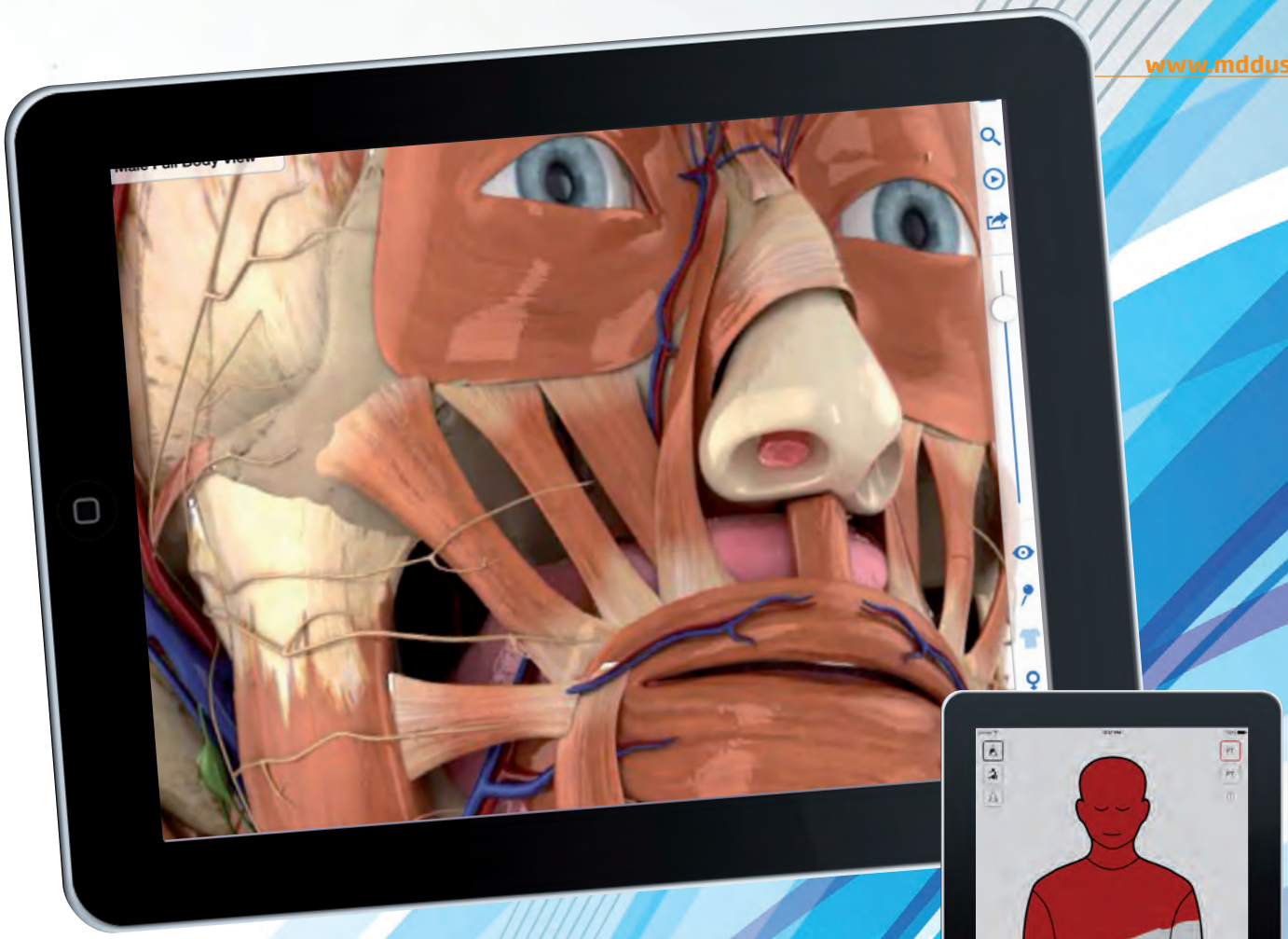
Free; Apple and Android

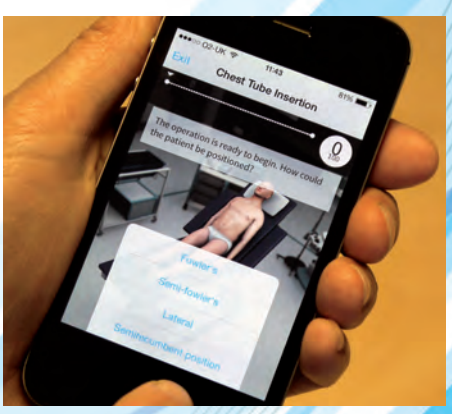
This app was downloaded more than 8,000 times in its first two months of release. It features Quick Reference Guides (QRGs) on a selection of SIGN guidelines, including those for the management of atopic eczema, rheumatoid arthritis, venous thromboembolism, and psoriatic arthritis in adults. The QRG content is enhanced with material from the main guideline and online resources, linked to the SIGN website. Each new SIGN QRG will be added as an update as it is published, building into a complete library. The app also features keyword search, bookmarking and in-app access to the SIGN website.

Patient.co.uk

Free; Apple and Android

Search their database of more than 900 patient information leaflets on health, conditions and diseases and quickly locate health services in your





Interactive: *(top) a 3D look at the human face (Pocketanatomy.com); (above right) the Mersey Burns app (merseyburns.com); (left) step-by-step instructions on chest tube insertion (Touchsurgery.com)*

area (England only). Browse by category, bookmark and share/print/email favourites. Concise summaries and diagrams can prove helpful when explaining conditions to patients in plain English.

Pocket Anatomy

£7.99; Apple

View full 3D male and female body anatomy with 10 layers of musculoskeletal, neurovascular and internal organ content (accessible without an internet connection). There is a note-taking function and quizzes to test learning

CliniCalc Medical Calculator

Free (£3.99 for full version); Apple

Handy for calculating formulas, scores and classifications from simple Glasgow Coma Score reminders to the CHADS2 stroke risk score, as well as visual aids for Mallampati classification. Categorised by specialty, it lets users store their favourite formulas and offers background information.

Touch Surgery, Surgical Simulator

Free; Apple and Android

Developed by surgeons, this app breaks down operations into their component steps and decision points. Users can engage with interactive, 3D simulations and practise techniques with the ability to carry out an "unsupervised" operation. It also lets you test yourself and track progress.

"Always exercise professional judgement before relying on information from an app"

GPnotebook

One-off payment of £21.99; Apple

This "online encyclopaedia of medicine" offers quick access to a database holding more than 26,000 pages of information. Users can make annotations and search the resource by keyword or browse by topics such as "cardiovascular" or "chest medicine". GPnotebook account holders can synchronise annotations and other personal data held in the app with their online account.

Link

- RCP London factsheet, Using apps in clinical practice – **tinyurl.com/p8vs46r**

Joanne Curran is an associate editor of FYi

JUST HEARTBURN

Day 1
Mr L – a 53-year-old – attends his GP surgery complaining of severe heartburn. He is overweight and a heavy smoker with a history of recurrent epigastric pain from acid reflux. Mr L explains that the pain struck suddenly last night and was intense and radiating to his back. The GP – Dr P – examines the patient and finds his chest clear with normal heart and breath sounds and normal blood pressure. There is no chest wall tenderness and when Mr L is asked to point out the locus of the pain he indicates the stomach area. Dr P records moderate to severe localised epigastric pain with no rebound or guarding. He diagnoses heartburn and prescribes 15mg lansoprazole twice daily until the pain resolves and then reduced to one daily. The patient is told to return if the pain persists.

Day 3
Mr L re-attends the surgery still complaining of heartburn despite taking the lansoprazole as instructed. Dr P examines him again and records a similar presentation – heartburn and epigastric tenderness. He doubles the lansoprazole dose to 30mg twice daily.

Day 5
Mrs L phones the surgery at lunchtime. Dr P is off and the call is taken by the GP on call, Dr N. She says her husband is suffering severe chest and arm pain and she is worried about his heart. Dr N arranges to visit Mr L at home later that day and prints off summary notes in case these are needed for an urgent referral. Dr N finds Mr L lying on the couch. He tells the GP it is not chest pain he is experiencing but the usual heartburn though worse. Otherwise he appears reasonably comfortable – not breathless or in obvious pain. Dr N confirms the initial diagnoses of heartburn and prescribes an antacid. He advises Mrs L to contact the practice if the pain worsens and to phone an ambulance if Mr L develops chest pain.

Day 7
Mr L collapses at home and an ambulance takes him to A&E. He is found to have suffered an extensive anterolateral myocardial infarction. Later that night he suffers fatal cardiac arrest.

FOUR months later Mrs L instructs solicitors to launch a claim of clinical negligence against both GPs. It is alleged that the doctors misdiagnosed Mr L's condition and the treatment delay led to his subsequent myocardial infarction and death later in hospital. MDDUS commissions expert reports from a primary care physician and a cardiologist.

In her claim and in subsequent statements Mrs L disputes both GPs' accounts of her husband's symptoms. She insists that her husband used the words "chest pain" to describe his symptoms and not "heartburn". She also disputes Dr N's account of his home visit on Day five and that Mr L was in no "obvious" pain.

The primary care expert examines the clinical notes and witness statements. He notes the disputed claims regarding Mr L's "chest pain" and he questions the logic by which Dr P arrived at the diagnosis of heartburn. The term is used to describe a burning discomfort or pain behind the breastbone (chest) caused by acid reflux – and yet the GP claims that Mr L indicated the "stomach area" as the locus of pain. This would normally be indicative of gastritis or dyspepsia rather than heartburn, and he also wonders why such a complaint would lead to an examination for chest wall tenderness. The expert concludes that the notes provided by Dr P offer insufficient detail to support a diagnosis of heartburn and, given the clinical uncertainty over the nature of the pain, the GP should have arranged urgent referral to hospital.

In regard to Dr N's home visit on Day five, the expert questions again the persistent diagnosis of heartburn – even more especially after treatment with high-dose lansoprazole. He concludes that, given the mention of severe chest pain, it would have been prudent to arrange urgent referral to hospital.

Having reviewed all the clinical evidence the expert cardiologist concludes that the most likely timing of the MI was between Day three and Day five. It is his view that had Mr L been referred for an ECG on Day one it is likely that a cardiac cause for his pain would have been identified, and angioplasty and stenting prior to the MI would have prevented subsequent myocardial damage and the fatal cardiac arrest. The outcome of a referral after Dr N's home visit is less clear given the uncertainty over the timing of the MI.

Considering the disputed accounts over the nature of Mr L's pain and questions regarding the diagnosis of "heartburn", MDDUS advisers and lawyers (in agreement with the involved members) decide to settle the case out of court.

KEY POINTS

- Disputed claims over diagnosis and treatment can be difficult to resolve without adequate clinical notes.
- Do not be over-reliant on previous recurrent diagnoses.
- Fully probe the nature of long-standing chest pain.

OUT THERE

DECEASED DERMIS Decontaminated skin from cadavers could soon be used to treat wounds in living patients, the *Daily Mail* reports. Manchester University researchers found decellularised skin was less likely to be rejected by a person's body and could treat acute wounds that don't easily heal, such as burns and ulcers.

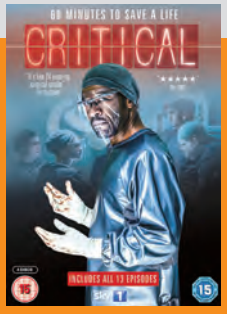
FACIAL CLUES Patients with serious heart and lung conditions struggle with some facial expressions, particularly surprise. The *Emergency Medical Journal* published findings which they say could help busy emergency room doctors decide who to prioritise for treatment, and who really needs "often costly and invasive tests". Fifty patients attending for emergency care with chest pain were assessed and those with more serious problems had a significantly narrower facial expression range.

MISSING BRAIN A man is suing a private cancer institute in Kentucky, USA, claiming that staff lost a piece of his brain after surgery. He was undergoing experimental treatment for a tumour in which doctors extracted a portion of brain which was later to be re-injected. But after the procedure the patient was told the tissue was lost and the treatment could not be completed. The cancer centre disputes the claim.

WHAT ARE WE LOOKING AT?

Stumped? The answer is at the bottom of the page

PHOTO: SCIENCE PHOTO LIBRARY



Created by Jed Mercurio, starring Lennie James, Catherine Walker, Peter Sullivan, Neve McIntosh; 2015

Pick: DVD - Critical

THE dominance of TV medical dramas has waned in recent years since the likes of *ER* and *House* ended, leaving mostly old (predictable) faithfuls like *Casualty* and *Holby City*. But if anyone can inject excitement back into the genre it's writer and former hospital doctor Jed Mercurio, whose previous hits *Cardiac Arrest* and *Bodies* blazed a trail with their unflinching portrayals of stressed-out doctors fighting their way through a flawed NHS system.

Sky 1's 13-part series *Critical* continues many of these themes but takes the unique approach of focusing each episode on the care given to one patient over 60 minutes (the "golden hour"). Keeping soap opera-style personal stories to a minimum, it is set in an almost space-age looking NHS major trauma centre that is packed with hi-tech gadgets and some startlingly realistic surgical scenes.

After an oddly uninvolving first episode, Lennie James' Army trauma surgeon Glen Boyle swaggers on the scene in episode two, going head-to-head with the targets-obsessed trauma chief (Sullivan), taking bold clinical decisions, and trying to whip his team into shape, all while confronting his past with old flame Fiona (Walker). A tense, exciting and entertaining ride.

Book Review: Adventures in Human Being

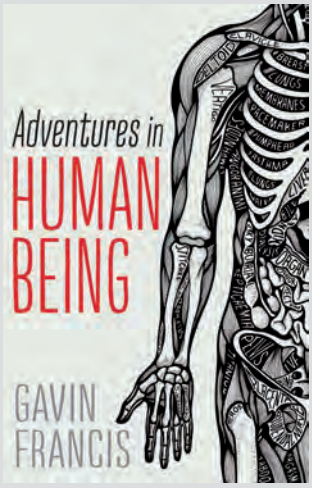
Profile Books: ***£14.99 hardback***

Review by Jim Killgore, publications editor, MDDUS

"AS a child I didn't want to be a doctor, I wanted to be a geographer," writes Gavin Francis in the first line of the prologue to his new book *Adventures in Human Being*. It is almost by way of explanation as to why the author and GP would follow two popular travel adventures – first in the arctic (*True North*) and then as a resident medic on a remote British ice station (*Empire Antarctica*) – with a fascinating riff on human anatomy and medicine.

Here Francis turns his geographer's eye inward on a "journey through the most intimate landscape of all: our own bodies". In a series of linked essays ordered from head to toe "like certain anatomy texts" Francis explores how culture "continually reshapes the ways we imagine and inhabit the body". It is both an eclectic collection of medical curiosities as well as a thoughtful account of his own encounters with the human landscape in his varied career as a doctor.

Starting in chapter one he describes first attending neuroanatomy lab as a student ("forty brains in buckets") and finding the pineal body which Descartes described as the "seat of the soul" – that leading into an account of his later training



observing a neurosurgeon mapping "eloquent" tissue on the surface of the brain to preserve speech function in a woman undergoing a procedure to treat severe intractable epilepsy.

So it goes with each part of the body: an account of how Leonardo da Vinci's meticulous drawings of facial muscles in cadavers echoed his earlier appreciation of human expression as captured in his painting of *The Last Supper*, or an accident leading to a consideration of shoulder injury as depicted by Homer in the fall of Troy.

The broad sweep of the material is subtly handled and never feels over intellectual. It can also be quite funny. In one chapter, Francis asks an A&E patient with a smashed fist of questionable origin: "What's your job?"

"I'm a pickpocket," he says with a wry smile, "what's it to you?"

To which Francis replies: "Just checking you weren't a concert pianist."

WHAT ARE WE LOOKING AT? *Bone tissue affected by osteoporosis*