FYi
ISSUE 11

# MEDICAL CARE IN A TROUBLED WORLD

Médecins Sans Frontières at the front line in conflict and disaster

ALSO INSIDE



AN MDDUS PUBLICATION

MDDUS

PHOTO: RON CATHRO

# Welcome to your FYi

IN the middle of a (mostly) scorching summer, many of you will be busy starting your final year or first year as a junior doctor. Communicating effectively is a vital skill for our work, but there are many other fun opportunities. On page 4, I look at how you can get involved with writing for blogs, magazines and other media and highlight the benefits of refining your literary skills.

And to inspiration of a different kind, in the field of scientific discovery. On page 5 medical researcher Dr Allan Gaw highlights the importance of following key rules to get the best results.

The study of "human factors" and their link to medical error has helped improve patient safety in many ways. Dr Michael Moneypenny explains more about this growing field on page 6. The latest research suggests weekend surgical patients are more likely to die, so is it time hospitals switched to 24/7 care? Our article on page 7 investigates.

The ways that doctors communicate are among the most common sources of patient complaints. So how can you be sure you are really listening? Experts from the Maguire Unit offer advice on page 10.

Doctors with charity Médecins Sans Frontières often have to deliver care in volatile conflict zones at great risk to their own safety. Adam Campbell finds out more about this remarkable organisation on page 12. For those seeking a less dangerous challenge that offers the chance to answer some of the most intriguing scientific questions – a career in academic medicine might be for you. Find out more on page 8.

Our case study on page 14 deals with a case of misdiagnosed leg pain with tragic consequences.

**Dr Anne Parfitt-Rogers**
**Editor**

COVER PHOTO: PETER CASAER

MDDUS

**EDITOR:**
Dr Anne Parfitt-Rogers

**ASSOCIATE EDITOR:**
Joanne Curran

**DESIGN:**
CMYK Design
www.cmyk-design.co.uk

**PRINT:**
J. Thomson Colour Printers
www.jtcp.co.uk

**CORRESPONDENCE:**
FYi Editor
MDDUS
Mackintosh House
120 Blythswood Street
Glasgow G2 4EA

t: 0845 270 2034
e: jcurran@mddus.com
w: www.mddus.com



FYi is published by The Medical and Dental Defence Union of Scotland, Registered in Scotland No 5093 at Mackintosh House, 120 Blythswood Street, Glasgow G2 4EA. The MDDUS is not an insurance company. All the benefits of membership of MDDUS are discretionary as set out in the Memorandum and Articles of Association.

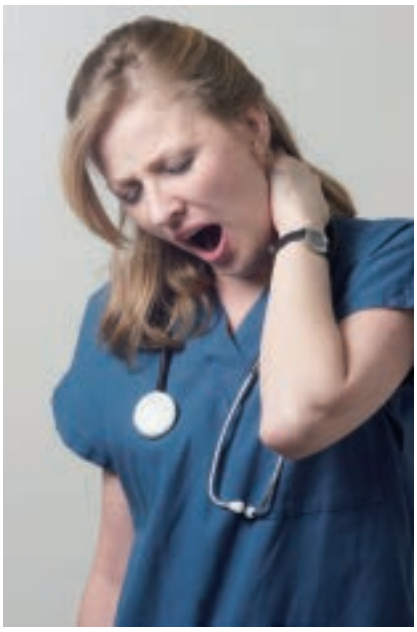
# TRAINEES TO SAVE HUNDREDS OF POUNDS ON FEES

**TRAINEE** doctors stand to make big savings on professional fees thanks to a new tax deal between the Royal College of Surgeons of Edinburgh and HM Revenue and Customs.

The move means surgical trainees will now be able to claim back against taxable income the £185 a year they pay to the Joint Committee on Surgical Training. The committee manages surgical training for all four UK surgical royal colleges.

Medical specialty trainees will now benefit from tax relief on the £169 they pay each year to the Joint Royal Colleges of Physicians Training Board. The board is responsible for setting and maintaining training standards for the three UK Royal Colleges of Physicians in Edinburgh, Glasgow and London.

# TRAINEES' CONCERNS OVER POOR HANDOVERS AND LONG HOURS



**A FIFTH** of trainee doctors have raised concerns over poor patient handovers and of feeling sleep deprived at work.

An annual national survey of UK trainees by the General Medical Council found 20 per cent of trainees said handover arrangements before and after night duty were informal or that there were no arrangements at all.

More than half of those surveyed (58.5 per cent) also said they worked beyond their agreed hours on a daily or weekly basis with just over 22 per cent feeling short of sleep at work. Around a third of trainees described their daytime workload as "heavy" while one in 10 said it was "very heavy".

A total of 52,797 trainees responded to the *National training survey 2013*, a response rate of 97.7 per cent.

Other results showed 15 per cent of trainees felt forced to cope with clinical problems beyond their competence or experience on a weekly or monthly basis. Just over half of the 6,000 GP trainees surveyed said they have felt forced to work beyond their competence. Of these, a fifth said this happened daily, weekly or monthly with the rest saying it happened "rarely".

Despite these concerns, overall satisfaction remains high with just over 80 per cent satisfied with their training and 90 per cent saying they were supervised by someone who was competent to do so.

GP trainees remain the most satisfied with their training, which is the same as in previous surveys. They gave an average satisfaction score of 87.9 per cent. Surgical trainees are the least satisfied at 77.1 per cent, but the figure is up on last year's 69 per cent. The vast majority of trainees (79 per cent) thought the post would be very useful or useful for their future career.

The GMC said it plans to work with those involved in medical training, including managers and medical directors, to "bring about further improvements and change."

*National training survey 2013*, **www.tinyurl.com/gmc2013**

# SPECIALTY TRAINING 'LIMITS DOCTORS', SURVEY FINDS

**MORE** than half of trainee doctors and new GPs think the current specialty training programme limits doctors' potential.

Criticism for the Modernising Medical Careers (MMC) programme emerged in the latest BMA survey of doctors who graduated in 2006. The BMA has questioned the 431 graduates each year as the cohort was the first to follow the MMC pathway.

Of the 372 doctors who responded to the 2012 survey, 54 per cent agreed or strongly agreed that the programme limited the potential of doctors. They highlighted duplication of placements, difficulty changing specialty and previous clinical experience not being taken into account as the main problem factors.

The majority of respondents (84 per cent) wanted more flexible specialty training placements while 72 per cent believed taking time out of specialty training to work in a non-training post was stigmatising, with 59 per cent feeling the same about taking time out for family reasons.

A further 47 per cent also believed there is a stigma associated with changing specialty after foundation training. The BMA said this finding was "particularly concerning" due to the expected shortfall in GP trainees and oversupply of hospital specialty trainees.

Despite the criticism, only 12 per cent of those who responded to the survey said their specialty training so far had not allowed them to develop their career to the best of their ability.

Chair of the BMA's Junior Doctor Committee Ben Molyneux branded the MMC "a mixed bag", adding: "We have reduced the amount of flexibility in the system and it's really slow progress to change things in the right way".

# ALL TRAINEES FIND JOBS

**ALL** trainee doctors have been given jobs after spending months on a waiting list.

The final 33 reserve list applicants were allocated places on July 8.

It was confirmed last October that oversubscription to the Foundation Programme had left 295 trainees without jobs. In April and May, 98 reserve list applicants were found a job with a further 138 allocated the following month.

The remaining posts have now been allocated more than two weeks ahead of schedule after the UKFPO ran an additional batch allocation.

UKFPO national director Professor Derek Gallen welcomed the move and said it meant all trainees would be ready to start their foundation training on time.

# FUNDING BOOST FOR TRAINEE INITIATIVES

**AN APP** to help confused patients and a tablet-based surgical training kit are among nine trainee-led projects to receive funding from Health Education England.

A broad range of programmes led by trainee doctors shared the £100,000 cash pot as part of HEE's Inspire Improvement project under its Better Training Better Care programme.

Among the winners was the educational and bedside "Confusion App" from Selina Sangha and Christy Gardner of North Cumbria University Hospital Trust, while Mohsan Malik and Ali Bahson of Guy's and St Thomas' Hospital NHS Trust devised a mobile, tablet-based surgical training kit.

Tim Robbins, Petra Vojtechova and Shirish Dubey of University Hospital Coventry and Warwick NHS Trust aimed to improve patient safety during the August changeover with their "Avoiding Grey Wednesdays" shadowing and peer mentoring project.

See the full list of winners at **www.tinyurl.com/cbbdj7m**

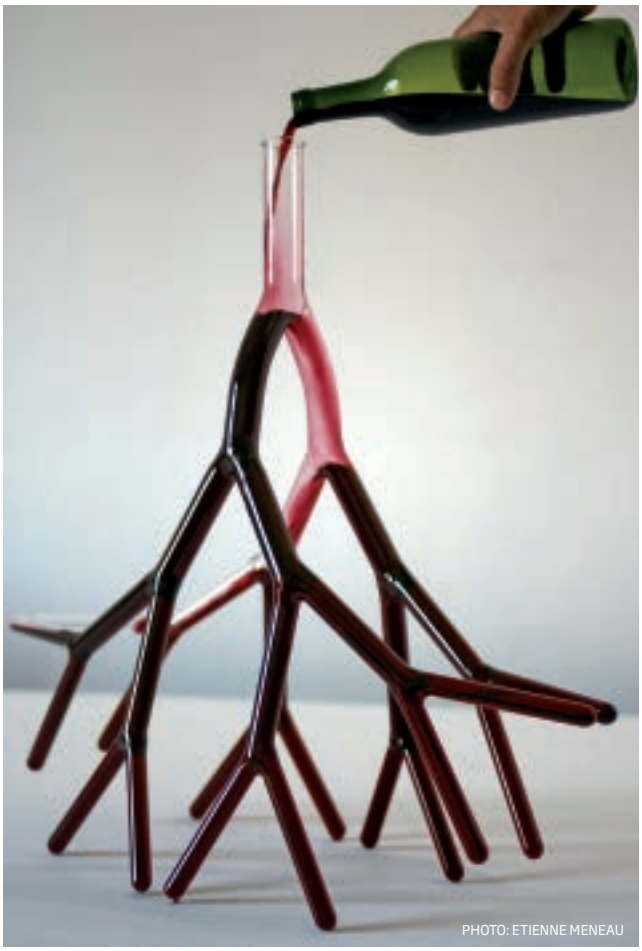


PHOTO: ETIENNE MENEAU

# DRINK FROM THE VEIN

**FRENCH** sculptor Etienne Meneau has created an unusual range of bio-tableware, including this eye-catching vein-shaped glass decanter which holds a full bottle of wine. Other pieces include drinking glasses inspired by the human heart. Anatomy fans can find out more at **the-strange-decanter.blogspot.com** or order directly from **strangecarafe@gmail.com**

# TRAINEES CAMPAIGN FOR SAFE SHIFT WORKING

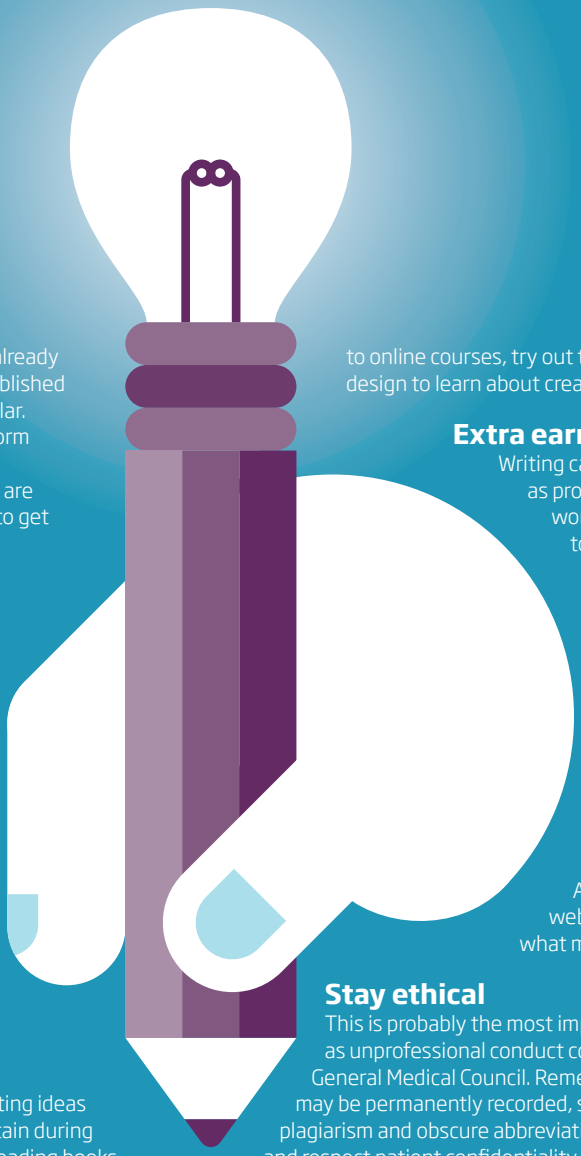
**JUNIOR** doctors have taken their campaign for safer shift working to the Scottish Parliament following a Channel 4 documentary highlighting the issue.

Surgical trainee and chair of the BMA's Scottish Junior Doctors Committee Tom Berry was among those who met with politicians to discuss the issue. He was also featured in the documentary, broadcast in March, in which he demonstrated how the effects of a 10-day working pattern of shifts affected his ability to do even basic tasks.

He said: "Much progress has been made to reduce working hours over the past 20 years and although the introduction of the European Working Time Directive has driven down the volume of hours that junior doctors work, it has also led to an increase in shift working patterns which can have risks for health and performance."

FY2 Ingrid Sepp also attended the meeting. She said: "Going from nights to days twice in a two week period is exhausting. I usually find it takes me two weeks to feel human again after a set of nights."

The event was hosted by Labour shadow health minister Jackie Baillie MSP. She said she was concerned by the issues raised, adding: "I have decided to ask for Audit Scotland to investigate the working hours of our junior doctors. We need an independent investigation to allow those with concerns to come forward and speak without fear of repercussions for their careers."



# THE POWER OF THE PEN

Many doctors write for magazines, books or the web – but what's involved? *FYi* editor and medical writer **Dr Anne Parfitt-Rogers** investigates

DO you have a flair for writing? Maybe you're already involved in a creative writing club or have published in a journal, whether medical or extracurricular. The ability to communicate effectively in written form for presentations, referral letters or other clinical documentation is vital for junior doctors. But there are many other fun opportunities. Here are some tips to get started.

## Cultivate your creativity

There are many ways to improve your writing skills, from blogging to reading groups at your library or online. Carry a notebook to jot down ideas, and keep one by your bedside too. Check out some of the most popular blog platforms – WordPress, Tumblr or BlogSpot, an offshoot of Google. They allow you to design backgrounds, monitor site visitors and tag key words. For inspiration on writing topics and to connect with others, sign up to the Daily Post or Weekly Photo Competition on WordPress. Following the blogs of like-minded people can be a great way to broaden your horizons and learn more about your chosen field, particularly for scientific advances and elective destinations.

## Be inspired

It's often said that the best way to pick up new writing ideas is to read voraciously. While this is difficult to maintain during finals and junior doctor years, some people enjoy reading books on study breaks, while others keep up-to-date with medical news via the web or newspapers. Test your lateral thinking skills with crosswords and wordsearches, and design free "word clouds" from sites like **www.wordle.net**. There are also some great online courses – Dundee Libraries, for instance, offer free access to over 200 topics including proofreading and copyediting and technical writing.

## Get published

Although there's no guaranteed way to get published, you can achieve this without doing research (although this may not count towards UKFPO applications). Many medical journals accept book reviews, but check with the journal before reviewing as they may have a specific book in mind. If you see an interesting case on the wards then ask your senior (and secure the patient's informed consent) if you can write it up for the education section. Your writing doesn't have to be medically related – you can enter a poetry or writing competition or write for your local faith group newsletter or sports club magazine.

## Become tech-savvy

The world is becoming increasingly digital and it's well-advised to move with the times. Whether it's designing a new medical app or editing an e-book, you can pick up new skills and increase your medical knowledge at the same time. You can find projects for e-books on freelancing websites, just pick a subject that interests you. Uploading to platforms such as Amazon Kindle tends to require Microsoft Word only. You can design a front cover either on the Kindle site or using Word features and convert online to jpeg on sites such as **Zamzar.com**. If you have access to online courses, try out topics such as HTML and web design to learn about creating your own website.

## Extra earning

Writing can be a useful way to earn money as projects tend to be short with flexible working hours. Consider signing up to a freelancing site such as Guru or Elance to find and bid for new projects on topics from writing health tips for websites to trivia quizzes. It's usually free although they'll take an admin fee of around 10 per cent. For speedy payment, register your bank or Paypal details at the same time. If you have suitable blog content, you can also monetise your blog by adding adverts such as Google AdSense via BlogSpot. Check the webpage terms and conditions for what makes a marketable blog.

## Stay ethical

This is probably the most important consideration for trainees as unprofessional conduct could lead to a complaint to the General Medical Council. Remember that everything you write may be permanently recorded, so avoid defamatory comments, plagiarism and obscure abbreviations, check spelling and grammar, and respect patient confidentiality at all times. Some sites will request you remain neutral on political and religious aspects, unless you are writing for a particular society or group.

The GMC's *Good Medical Practice* has more detailed guidance on this topic. One key point states: "When communicating publicly, including speaking to or writing in the media, you must maintain patient confidentiality. You should remember when using social media that communications intended for friends or family may become more widely available." The GMC highlights the importance of being honest about your experience, qualifications and current role, being sure to "make clear the limits of your knowledge and make reasonable checks to make sure any information you give is accurate."

## Fancy a career in medical writing?

If the idea of a fast-paced environment combining word-wielding and scientific knowledge appeals to you, think about medical writing as a career. This will be easier as you gain experience but you may miss the patient contact. A qualification or knowledge of business and/or journalism will help, as will a PhD or Masters. Check out the Association of British Pharmaceutical guidelines and International Society for Medical Publication Professionals' regulations, and visit the MedComms Networking website to sign up for careers days.

Finally, get in touch with us at **FYi@mddus.com** if you'd like to write an article or media review – we'd be delighted to hear from you!

***Anne Parfitt-Rogers is an FY1 doctor and editor of FYi***

# THE BUSINESS OF DISCOVERY

Inspiration is vital in scientific discovery – but so also are rules. Medical researcher and writer **Dr Allan Gaw** offers insight into how we must channel our sense of wonder

DISCOVERY is a rather magical word, don't you think, evoking voyages on high, uncharted seas, the delving into ancient, dusty libraries and the witnessing of previously unseen marvels at the end of a microscope lens.

When it comes to scientific discovery, however, there are rules. If we ignore them we do not discover – we only think we have – for science is about revealing truth through a process that does its best to ensure we don't delude ourselves. Rather like the archaeologist we have evolved a simple set of tools to scrape and brush away the layers of confusion in order to reveal the answer, and our most important tool is the concept of "control".

So often we read headlines about how a drug has caused a cancer. These stories are convincing because they appeal to our basic human need to find a link between cause and effect. Something happens and then something else happens, so the first event must have caused the second. If our primitive ancestors forgot to pray to their gods and their child died, it was obvious what had happened. We like to think we are more sophisticated, but in truth we still have cavemen's brains and are still dangerously vulnerable to the fallacy of *post hoc ergo propter hoc* – after it, therefore because of it. If we are to discover the truth of cause and effect – i.e. did the drug really cause the cancer? – we must resist this way of thinking and find a new and perhaps less intuitive approach. An example may help.

If 10 people have developed a rare form of cancer we look for reasons. We first look for characteristics they share: where do they live, what do they eat, what drugs do they take? The first piece of common ground we discover may be the cause but, equally, it may not; it may merely be a coincidence. Scientific method protects against the power of coincidence. What if these people were receiving the same drug because they all suffered the same symptoms related to their cancer, a cancer they had developed before they had ever been prescribed the drug? How can we resolve this? We can employ a range of observational tools, but none will be conclusive.

The definitive way to test the hypothesis – that the drug causes cancer – is to conduct a randomised controlled trial, or RCT. Here, a group of people are randomly assigned to receive the drug or a matching placebo. By concealing from both participants and researchers the treatment allocations, we perform a so-called "double-blind" study and eliminate as much bias as possible. We will then follow the participants, checking them for signs of cancer. If our study is large enough and long enough we will be able to compare the two groups. Only if the number of cancers in the drug group is significantly higher can we confidently conclude the drug has a causal role in the cancer's development.

This methodology is regarded by many as one of the most important advances in medicine in the 20th century. Without RCTs we are operating in the half-light, with only observational studies and anecdote to guide us. The scientific rigour applied within the RCT allows us to 'know' where before we could only 'wonder'.

But, RCTs are not without their problems. The example given above, while scientifically sound, may present significant ethical problems. If we really believe a drug might cause cancer is it right to expose people to that risk only to satisfy our curiosity? Of course not, but it is not our curiosity that is at stake. If the drug has important clinical effects that could benefit many patients, we must be sure when using it that we are not unwittingly causing more harm than good. The only way we can prescribe with confidence is if we have the data to back it up, and the highest quality data will be derived from a well conducted RCT. Discovery is wonderful, but it is also difficult. Those who wonder need to be taught how to channel that sense: they need to learn how to ask the right questions, how to design strategies to answer those questions, how to conduct studies with rigour, and within the law, and how to tell the world of their discovery. A cycle of discovery that begins with a thought, a question, a moment of wonder should end with a revelation that we can all share. For discovery belongs to us all – it has allowed us to feed our hungry, light our cities, cure our diseases, and it has allowed us to walk from our caves and step on the Moon.

*"If we are to discover the truth of cause and effect we must find a new way of thinking"*

***Dr Allan Gaw is a clinical researcher and writer in Glasgow***

# "HUMAN FACTORS" AND MEDICAL ERROR

Medicine has learned much from other high-risk industries such as aviation and off-shore drilling. **Dr Michael Moneypenny** explains how the study of "human factors" can enhance patient safety

A GREAT teacher of mine, Dr David Gray, once told me "define or die". What then are "human factors"? There are numerous definitions out there, some simpler than others.

The UK's Clinical Human Factors Group (CHFG) describes it as: "Enhancing clinical performance through an understanding of the effects of teamwork, tasks, equipment, workspace, culture, organisation on human behaviour and abilities, and application of that knowledge in clinical settings."

This doesn't lend itself to being easily memorised, so if we apply the KIS (keep it simple) principle then the term "human factors" may be defined as:

1. All the things that affect human performance
2. The field of study of all the things that affect human performance.

## Performance modifiers

Whenever you are carrying out a task there will be internal and external modifiers of your performance. As I sit here writing this article these include: the uncomfortable wooden chair I'm sitting on, the distractions through the window, the copy deadline and lack of sleep. They might also include: the type of computer and word processing software I'm using and that I've had breakfast and two cups of tea.

If you think back to your last insertion of an intravenous cannula you may be able to identify the human factors which affected your performance such as tiredness, number of jobs still to do, audience (including the patient), number of attempts already made, familiarity with the technique, lighting, and so on. Until recently, in medicine anyway, the idea that your performance is affected by these modifiers was neither much appreciated nor understood.

The first change which occurred was an appreciation that medicine is a high-risk industry; in the UK thousands of patients are killed or harmed every year due to mistakes made by healthcare professionals. Once this had been acknowledged, the lessons learned and vocabulary from other high-risk industries, such as aviation, off-shore drilling and nuclear power, were adapted and translated into healthcare.

## Analysing factors

How then can "human factors" help us avoid medical error? Through the study of what affects human performance we can try to minimise (never "eliminate") human errors as well as minimising their effects. One may wish to divide the modifiers into internal and external. (See the table above).

| Internal modifiers | External modifiers |
|---|---|
| Emotional state | Design of equipment |
| Concentration on task | Support from senior |
| Expertise with task | Training |
| Ability to communicate | Rota intensity |

An appreciation of human factors can help us understand what internal and external modifiers are affecting our abilities. It may also allow us to see which modifiers are potential causes for mistakes and allow us to redress these.

## The value of simulation

Attending courses at a simulation centre may help you identify internal modifiers contributing to your mistakes. Video-assisted debriefing allows you to reflect on your performance. With the help of a facilitator and your peers, you may learn where your strengths and weaknesses are. In situ simulation involves using the mannequins in the workplace; this is where external modifiers may be discovered such as lack of equipment, lack of support, organisational blind spots, etc.

## Getting started

You can start applying the lessons of human factors research today. An important first step is accepting that we are all human and will inevitably make mistakes no matter what stage we are at in our careers.

Ask yourself: where are your strengths and weaknesses (and how might you find out about them)? What can you do to address these? What are the things in your workplace which may lead to human error? Who can you talk to in order to remove or minimise these risks? Human factors provides us with the vocabulary to talk about what is going wrong and the tools to mitigate this.

Self-awareness in your day-to-day work will help you admit when you are tired, stressed or distracted. These human factors increase the risk of making a mistake, and are particularly relevant in situations where you are required to make complex calculations in drug dosages or equipment settings.

Taking time to double-check your decision-making is one useful way to start "error-proofing" your work.

As trainee doctors, you might also find yourself trying to remember 10 different things to do – again increasing the likelihood of mistakes. The human brain can only have seven or eight things at its forefront at any one time, so consider drawing up a checklist to give yourself a visual reminder.

There are many more tips and techniques available and applying these human factors concepts in your practice will make you a better doctor.

## Recommended watching:

CHFG video, Just a routine operation - **www.tinyurl.com/fyichfg**

BBC *Horizon* programme: How to Avoid Mistakes in Surgery (available on YouTube)

## Recommended reading:

- Sidney Dekker, *The Field Guide to Understanding Human Error*
- Rhona Flin et al, *Safety at the sharp end*
- Atul Gawande's books: *Complications*, *Better* and *The Checklist Manifesto*
- Alissa Russ et al. "The science of human factors: separating fact from fiction" in *BMJ Quality & Safety* - **www.tinyurl.com/ndk4mcz**
- Charles Vincent, *Patient Safety*

***Dr Michael Moneypenny is a consultant anaesthetist and expert in the field of human factors in healthcare. He is also director of the Scottish Clinical Simulation Centre***

# SURVIVING THE WEEKEND

## Research suggests weekend surgical patients are more likely to die, so is it time hospitals switched to 24/7 care?

IDENTIFYING trends within patient death rates has long been a preoccupation of researchers.

The latest study, published in the *BMJ*, suggests patients who undergo surgery towards the end of the week are more likely to die than those earlier in the week.

Researchers from Imperial College London looked at all non-emergency surgery undertaken by the NHS in England in 2008 to 2011. Among the four million operations, they noted more than 27,500 deaths in the 30 days following surgery, making the average risk of death 0.67 per cent.

*"Patients were 44 per cent more likely to die if undergoing surgery on a Friday than a Monday"*

Concerns were raised about the significant variation over the week, with the lowest risk attached to surgery performed on a Monday. In contrast, patients whose operations were carried out on a Friday were 44 per cent more likely to die than on a Monday. Those undergoing surgery on a weekend were 82 per cent more likely to die than on a Monday, although the relative number of weekend operations was low. These figures include deaths both during the patient's hospital stay and after discharge.

The researchers said the findings could be linked to various factors, including a poorer quality of care at the weekend, or that patients admitted or operated on at the weekend are more severely ill than those admitted during the week.

This is not the first time research has highlighted trends among death rates.

For years, the August change-over – when trainee doctors start their new jobs – has been referred to by a variety of alarming names, among them the "killing season" and "black Wednesday". These tags emerged as various research studies suggested that hospital death rates rise at the start of August, with one study saying rates go up by as much as eight per cent.

Last summer NHS medical director Sir Bruce Keogh admitted publicly for the first time that the "killing season" does in fact exist and that measures were being put in place to address the problem.

The European Working Time Directive (EWTD) has also caused controversy since its introduction in 2009. Designed to end the practice of excessive working hours, it limited doctors' average working week to 48 hours. However this had the knock-on effect of restricting training time and impacting on continuity of care due to increased staff handovers.

A survey by the Royal College of Surgeons in 2010 found that 80 per cent of consultant surgeons and 66 per cent of surgical trainees said patients were less safe because of the directive.

Add to this the statement in March 2013 by the head of the Care Quality Commission (CQC) David Prior who warned of a crisis in urgent care. He said: "If we don't start closing acute beds, the system is going to fall over. Emergency admissions through accident and emergency are out of control in large parts of the country … That is totally unsustainable."

This prompted renewed calls for the NHS to consider 24/7 healthcare provision, where hospitals would be expected to offer the same level of service around the clock, rather than reducing cover at weekends.

This has been a recurring topic in healthcare debate in recent years. A poll of more than 1,000 GPs and secondary care doctors conducted by doctors.net.uk in March 2012 found 59 per cent agreed hospitals should operate on a 24/7 rolling weekly schedule. Respondents suggested that if the current workload was spread equally over seven days and the premium salary for weekend working were scrapped, a seven day service could be implemented even in today's tough economic climate.

Of those who opposed a 24/7 service, most were worried about the cost while some were concerned that spreading the workload might mean fewer staff would be available at any one time.

Primary care has also taken centre stage in the debate as the government has proposed returning the responsibility for out of hours care to GPs. The *Urgent and Emergency Care Review* by Sir Bruce Keogh, published in June, calls for a better co-ordinated urgent care system. His vision includes "decision support from a patient's own GP practice and hospital specialist nurse/team seven days a week".

Sir Bruce has said a forum has now been established to "develop viable financial and clinical options to help our NHS provide more comprehensive services seven days a week."

Some hospital units are already ahead of the argument and are delivering 24/7 care. The issue has been a hot topic within the Royal College of Paediatrics and Child Health for the past three or four years.

The Royal Free London Foundation NHS Trust has been providing consultant delivered care since 2007, where consultants, rather than junior doctors, provide the bulk of clinical frontline care.

Writing for the *BMJ* in June 2013, consultant paediatrician Dr Susie Gabbie describes how this is achieved through a variety of different shifts. She says 12 hour day and night shifts cover the emergency department from 9am to 9pm, while separate consultants cover inpatient wards and clinics. Duty consultants are closely involved with all patients through direct supervision of junior doctors and hands-on care.

She highlights several advantages: "Patients receive direct consultant input at all times. Care is not reduced at weekends or out of hours. No child is more than four hours from consultant review, and in reality most patients are seen much more promptly, complying fully with royal college standards…Trainees are also under close consultant supervision at all times."

She also believes the unit is "more or less cost neutral" thanks to various factors including performing fewer investigations and admitting fewer children.

While it seems 24/7 care is possible, it remains to be seen exactly how plans will progress in our rapidly changing NHS.

***Joanne Curran is an associate editor of FYi***

# THIRST FOR KNOWLEDGE

## An academic career is perfect for doctors with plenty of courage, curiosity and determination

PUSHING the boundaries of knowledge and seeking answers to important questions are all in a day's work for a clinical academic. This varied field offers endless opportunities for those interested in research, teaching and management.

Whether you have ambitions to be the next chief medical officer, enjoy spending hours in a laboratory or have a burning desire to take part in research projects that have the potential to change the way disease is diagnosed and treated, then a career in academic medicine could be for you.

Academic work is usually undertaken in addition to work in clinical practice, offering the chance for "the best of both worlds".

### Entry and training

The route into an academic career involves considerable commitment and will require more skills than an intercalated BSc can provide. This will likely mean undertaking a higher research degree (MD/PhD) alongside your clinical training.

One popular postgraduate route is via Academic Foundation Programmes (AFPs) which operate across the UK. These give foundation doctors the chance to develop skills in research, teaching and leadership/management in addition to the basic competences outlined in the curriculum.

While this is a very useful programme, it is not the only way of entering the field. There will be other opportunities during your career to develop academic skills and an AFP is not a pre-requisite for securing a research fellowship or other academic post.

The UK Foundation Programme Office's (UKFPO) *Rough Guide to the Academic Foundation Programme* offers a very useful overview. It says there are currently around 450 AFPs available each year across the UK, accounting for just over five per cent of UK foundation programme places. There is great variety between AFPs, with some focusing on traditional academic pathways such as research and teaching, while others focus on areas like leadership and management, quality improvement and even health informatics. All programmes have the same common purpose; they enable foundation doctors to develop their clinical skills whilst simultaneously supporting the development of key skills in other areas of medicine.

Foundation doctors following an AFP have dedicated time set aside for academic activities, the nature of which will depend on the AFP itself. AFPs vary significantly between foundation schools. Most of the dedicated academic time will be during the second year of foundation training (F2), but some programmes arrange additional activities during F1. Trainees may have a four-month academic placement in F2, day-release throughout the year, or a combination of the two.

The UKFPO strongly advises applicants to research the AFPs on offer and apply for those that best suit your interests. Most foundation doctors organise a project for their academic placement which forms the main focus of the AFP. The options are varied. Some doctors choose a lab-based project leading to a scientific publication while others might opt for a clinical quality improvement project with the aim of improving patient care.

The UKFPO highlights a number of desirable qualities in trainees seeking an academic career. Candidates must be able to demonstrate that they understand what the career involves and be competitive and successful with "something on their CV that stands out" such as distinctions, prizes etc. You must demonstrate an interest in your chosen specialty, have a passion for the AFP programme and good clinical abilities as AFP trainees are expected to gain all of the foundation

programme outcomes in reduced time.

More advice can be sought from your dedicated academic supervisor who will oversee academic work and provide feedback.

## Specialist training

On completion of academic foundation training, there are many available options which differ across the UK. For trainees in England, the next step is usually to enter an academic clinical fellowship (ACF) for up to three years with entry at ST/CT1-4. This is followed by up to four years in a clinical lectureship position (entry at ST3 or above), before achieving the Certificate of Completion of Training (CCT).

These schemes are co-ordinated by the National Institute of Health Research (NIHR), but many UK charities and funding bodies also provide additional personal fellowship schemes. Support for clinical academics is available from professional bodies including the Royal Colleges.

Scotland opted not to follow the ACF scheme and set up its own system, the Scottish Clinical Research Excellence Development Scheme (SCREDS). The entry point is from ST1/CT1 and can last up to the entire duration of specialty training. Posts are funded by NHS Education for Scotland and Scottish universities. They typically average around 80 per cent clinical time and 20 per cent academic time, with flexibility according to your career stage. More information is available on the NES website at **www.tinyurl.com/pdn4smd**

The BMA website provides a useful overview (link below) which explains that there are "different opportunities available at the various levels of seniority, and the nature of academia means that careers may not follow an established or set pathway." It also highlights that, unlike in England, all medical academic training posts at specialty level are university contracts, with terms and conditions that may differ from those offered by the NHS junior doctor contract.

Again, it is important to note that neither the ACF nor SCREDS are the sole, or even predominant, ways of obtaining experience and training in academic medicine. Look for opportunities in your area by contacting your local research and development office or consider organising your own research project while completing clinical training. University websites will also have details of funded research posts while organisations such as the Wellcome Trust offer research funding.

## Moving forward

The opportunities for working within academic medicine are varied. Doctors may choose to take up a post as a senior lecturer, consultant/honorary senior lecturer or pursue a senior clinical fellowship. Notable clinical academics include chief medical officer Professor Dame Sally Davies, and the immediate past director of the Wellcome Trust (and current Chief Scientific Adviser) Professor Sir Mark Walport with many more in the fields of medical education and scientific research. Many agree these are exciting times for clinical academics with great flexibility in choosing which path to follow.

***Joanne Curran is an associate editor of FYi***

## Sources:


- *Rough Guide to the Academic Foundation Programme*, March 2013, UK Foundation Programme Office - **www.tinyurl.com/lclp5ft**
- BMA – *Academic training in Scotland* at **www.tinyurl.com/op5gyqv**
- Medical Careers - **www.tinyurl.com/ohmjylo**


## Q&A

### Dr Thomas Kelley

Project leader with the International Consortium for Health Outcomes Measurement, Boston MA; UKFPO academic adviser.

**What is attractive about a career in academic medicine?**
Academic medicine is broad, from cellular research to clinical trials to working at the level of the health system. It gives you the opportunity to think about some of the greatest challenges that we face from managing dementia to developing new models of healthcare delivery. Naturally this is challenging and immensely stimulating. You get to be innovative and creative and define where you're going to focus, how you're going to investigate a particular problem and once investigated, how this will be translated into a solution. This has the potential to have an enormous, positive societal impact. You get to meet interesting, brilliant people who challenge your thinking. You get to talk about your work, to debate with people, to convince people that what you're doing makes sense. Ultimately, it is the challenge, the intellectual stimulation and the potential impact that I find most attractive.

**What challenges do academic clinicians face?**
The intellectual challenge, as described above. However, this is positive. The negative challenge is that you have to decide where to focus. You cannot be brilliant at everything. Do you continue with clinical medicine or not, for example? There can also be challenges with getting academic posts as they are very competitive.

**What do you consider the most important personal characteristic in a good academic physician?**
Resilience. Whether this means bouncing back from not getting the academic position you wanted or not getting the results you wanted/hoped for in an investigation.

**What is your most memorable experience so far?**
Getting the job that I always wanted and then really struggling to get the US work visa to turn the dream into a reality.

**Is there any advice you could give to a final year or FY trainee considering academic medicine?**
Don't think of academic medicine as only lab based or clinical research churning out papers. It is broader than that. I am, for example, about to start working at a healthcare institute set up by Harvard (ichom.org), where we work with healthcare organisations around the world to develop outcome measures for disease management. I think this has the potential to really improve the quality of patient care.

# SENDING THE RIGHT MESSAGE

How doctors communicate with their patients is a common cause of complaints. Experts from the Maguire Communication Skills Training Unit offer some practical tips and advice

PATIENTS want to be treated by skilled and knowledgeable clinicians but this by itself is not sufficient. Patients also want to be treated with humanity, dignity and respect; they want to be fully informed, supported and listened to so that they can make meaningful and informed choices about their care.

In 2012 the General Medical Council report, *The State of Medical Education*, revealed there were proportionally more complaints about doctors than any other healthcare professional. Two of the top three complaints involved communication: ineffective communication (including failure to respond to concerns, provide appropriate information and listen) and lack of respect (including rudeness, failure to respect the patient's dignity and work in partnership).

What steps can we take to deliver best practice?

## Structuring the conversation

Evidence suggests that one of the simplest things we can do is to structure our consultations. The aim is to gather all information and concerns, from the patient's perspective, before we give any information. This aids the disclosure of concerns. As soon as we provide any information and advice to patients, patient disclosure is reduced and we hear fewer concerns. The Calgary-Cambridge consultation model is useful, as is the Maguire model (see box, right). Both allow the doctor to direct and optimise the flow of information between patient and doctor.

## Working with cues

To optimise either model of assessment, it is essential to be cue-focussed, as behind each cue may be a concern which needs to be identified.

**Definition of a Patient Cue**

A hint or clear expression of a negative emotion (verbal, vocal or non-verbal) which would need exploring to check for the presence of an underlying concern

### Structure of an assessment interview (Maguire model)

**Introductions**
- Names and role
- Reason for the consultation
- Time boundary

**Gathering information**
- Background information
- History of the illness including patient's perspective and concerns

**Assessing current situation**
- Current concerns
- Impact on life
- Coping responses
- View of the future

**Information giving and plan of action**
- Tailor information
- Share decision making
- Negotiate plan of action

**Closing**
- Summarise
- Screen for further questions or concerns
- Check how patient is left feeling

Patients tend not to immediately and clearly disclose all their concerns even if we ask them to, instead they hint at worries and concerns to determine if the healthcare professional is interested.

An important skill is therefore the ability to recognise and respond appropriately to patient cues. At each step in the model the doctor needs to recognise the patient's cues and link their response to the cue. Communicating in this way about the issues

that matter to the patient, detected via the cues (whether they are worries the patient came with or worries resulting from new information given), allows the concerns and needs of the patient to be identified and addressed appropriately.

## Which cues?

*Gathering information*

It isn't always feasible or practical to explore every cue but it is important to work with key cues that help to elicit the patient's thoughts, feelings and concerns.

There is evidence that the acknowledgement and exploration of the first patient cue (verbal or non-verbal) is crucial because there is a 20 per cent decrease in cues provided by the patient if the first cue is not acknowledged or explored. Subsequent cues to work with are the strongest ones (which healthcare professionals tend to avoid). If in doubt, summarise the cues and ask the patient to prioritise. Working with the strongest cues and first cue (verbal or non-verbal) will optimise disclosure of concerns.

*Giving information*

Working with cues is also important when giving information and negotiating decisions with the patient. Acknowledgement of a patient's cues increases the amount of information the patient is able to recall and increases their ability to make decisions.

Cues are a useful way of gauging patients' reactions to what we say. These cues might include nods which may suggest agreement or understanding, but could also include frowns, agitations, blank expressions or reduced eye contact, all of which may imply confusion or distress with what is being said, or disagreement with a decision.

## Key communication skills

To be sure of their meaning, cues need to be acknowledged, clarified and explored (ACE) using the skills below.

Using skills in context, i.e. to acknowledge and explore cues, significantly increases the disclosure of significant information from the patient and is key to a patient-centred approach.

**Skills to acknowledge**

- Reflection
- Paraphrase
- Summary

**Skills to clarify and explore**

- Open focused questions
- Educated guesses

## Showing empathy and being supportive

Being empathic helps the patient to feel understood and cared for, and acknowledging emotions (cues) significantly increases information recall and enables the patient to process decisions more clearly.

**Empathic statements:** *examples*

- I can see how upset you are.
- You sound upset, am I right?
- It sounds overwhelming.
- You say you are coping but I am getting the sense that you are finding it really hard. (Pause)

## Difficult situations

Managing difficult communication situations normally refers to handling strong and difficult emotions exhibited by the patient or relative but it can also mean being asked difficult questions, or when patients or relatives make inappropriate demands. In all these situations the key is to work with the cues. Strong emotions need to be acknowledged, not ignored or minimised, and the concerns driving the emotion elicited and explored before any information is given. Being empathic throughout is crucial.

*Handling difficult questions*

Difficult questions or demands are often best treated as cues. Answering difficult questions may lead to breaking bad news or giving uncertain information. Typical questions can be "How long do I have?" "I am going to die, aren't I?" Is it bad?" The key principle is to first acknowledge the importance of the question, then explore the question before giving information that addresses it ("explore before explain"). By exploring the question, the patient's perceptions and concerns can be identified which will allow the question to be answered appropriately.

*Breaking bad news*

Bad news needs to be given in a way that allows the person to understand and manage what is being said to them and in a way that allows them to express their fears and concerns before any information and advice is given. This means it needs to be delivered slowly in small chunks and with compassion. The doctor also needs to actively elicit the patient's new concerns and feelings (being guided by the patient's cues) before moving into information giving and discussing and negotiating treatment options.

## Improving skills

Learning to communicate effectively through experience alone has been shown to be ineffective when compared to other methods. Although a sound knowledge base and observation of good practice may facilitate change, experiential workshops which give participants a chance to practice, will optimise and maximise the ability to acquire, hone and maintain new skills.

## Summary

A patient-centred approach using a structure for the consultation ("gather before give"), and facilitative skills linked to cues will: optimise disclosure of patient concerns, allow patient preferences to be heard, increase the likelihood of the patient understanding and recalling information, and participating in treatment decisions. A patient-centred approach is the key to best practice. It will increase the likelihood of the patient feeling satisfied with their care and feeling they have been treated as an individual with their wishes respected. It will also allow doctors to deliver tailored care with less risk of non-concordance with treatment.

**Summary of useful patient centred skills**

- Actively elicit patient's perspective and all concerns (gather information)
- Verbally acknowledge concerns by summarising and empathising
- Obtain permission to give information
- Pause frequently when giving information
- Obtain permission to give further information
- Check for new concerns and acknowledge
- Negotiate a plan
- Empathise throughout

## Further reading

*Assessing Patients with Cancer: the content, skills and process of assessment*, Cancer Research UK Publication: (2nd ed 2008) **maguireunit@christie.nhs.uk**

Silverman J., Kurtz S., Draper J. (2008) *Skills for communicating with patients* (2nd edition), Radcliffe publishing: Oxford

***Dr Claire Green, Nicky Schofield and Alison Fellows are trainers with the Maguire Communications Skills Unit, The Christie School of Oncology, Manchester***

# IN THE LINE OF FIRE

Doctors with Médecins Sans Frontières risk their lives to provide care in the most extreme settings. **Adam Campbell** finds out more about this remarkable organisation

IF HOLLYWOOD were to make a film about humanitarian aid doctors, there would be guns, lots of them, and plenty of blood too, no doubt. There would be border-crossings at night with a local guide, life-saving operations in a dusty cave lacking in the most basic resources, and a rock-hard floor on which to steal a few hours' sleep. Meanwhile, helicopters would rain down rockets and bombs onto the surrounding area, the explosions punctuating conversations among the medical staff.

And despite Hollywood's reputation for hyperbole, this would not be an exaggeration. Indeed, this is exactly what has been happening in the recent conflict in Syria, where surgeons from the humanitarian charity Médecins Sans Frontières (MSF) have been working under the most extreme conditions to treat the horrendous casualties of a modern war.

But there are other types of care going on too – perhaps less dramatic, certainly no less important – in this organisation of 25,000 people providing emergency aid to the needy and dispossessed around the world, including eight million outpatient consultations and over 70,000 surgical procedures a year. And whatever the circumstances, be it a conflict situation, a cholera epidemic or a devastating earthquake, the requirements for medical staff are usually the same: medical know-how, of course, but also an ability to keep a cool head when all around are losing theirs and the best-laid plans are going wildly off-course.

## Facing danger

Dr Angeline Wee, a GP from Singapore, has done two missions with MSF, one of seven months to post-earthquake Haiti and one of nine months to the conflict-torn Democratic Republic of Congo last year. In both cases, events took a turn for the unexpected.

"Haiti was meant to be a fairly simple, stable first mission," she says, "but it turned out to be quite complex, because this was just before cholera hit, before the elections in December and we were also preparing for the coming hurricane."

Her regular duties involved delivering care from a bus-cum-clinic in a camp controlled by gangsters and also working in a clinic set up on a golf course owned by the actor Sean Penn

*"It was meant to be a simple first mission - but then a cholera epidemic hit and we had to prepare for a hurricane."*

(later, she would move to a primary care clinic attached to the paediatric hospital). But events meant she was suddenly involved in setting up a new cholera treatment centre in Port-au-Prince, as well as a number of 24-hour emergency centres, first ahead of Hurricane Tomas and then again in preparation for the anticipated electoral chaos.

"It was a difficult time – a lot of the surrounding NGOs were pulling out because of the deteriorating security situation, so people started coming to us."

In the Congo, Angeline was in charge of an outreach project supporting two clinics in the mountains near Kitchanga. Based just 50 km away, her weekly three-day visits would nevertheless involve a six-hour road trip taking medical supplies and a small supervisory team to the clinics.

She had got used to dealing with the associated security issues – "I had never spoken to anyone holding a gun before" – when the conflict suddenly escalated, and the subsequent displacement of people raised the medical stakes further.

"In one of the areas there was a refugee camp of about 20,000 people, so we had to set up a cholera treatment unit. There were cases of measles as well. I had never even been part of a measles vaccination campaign and suddenly here I was in charge of one! It was really intimidating."

## Political resistance

By contrast, the intimidation encountered by Dr Johann McGavin, who is now a trainee GP in Brighton, during his nine-month mission to Zimbabwe was of a different nature altogether. There, he was working mainly to

provide HIV and TB care to a group of 25,000 patients who had been displaced through a deliberate government policy called 'Operation Murambatsvina'.

Meaning 'Clean out the Trash', the policy had displaced 250,000 people from Harare to an area with no water, no electricity, a very low employment rate, little food and shelter, and a lot of crime and sexual violence.

The Zimbabwean government was not particularly keen on the presence of NGOs. "It was like walking through treacle," says Johann, who, unusually for an MSF volunteer, was working with his fiancée. "We had a lot of challenges with the local hospital because we were made to do a three-month introductory period under supervision and that included a lot of paperwork and obstruction. It was challenging in a rather insidious, undermining, quiet way, not like in other countries."

Upon arrival they had been briefed to be very careful about what they said. "I felt very oppressed being there, not being able to really vent, to my partner at any volume, to my friends, certainly not to any Zimbabweans and not even over the phone to my parents in England, in case that was being listened in on."

The experience brought him very low and he even considered giving up. "But then you remembered that if you gave up because of frustration with the government, it was the poor people who were going to suffer."

Johann developed a survival toolkit to help him get through the difficulties with the authorities and those arising from treating a steady and insistent stream of 500 adult and paediatric HIV patients a day between one doctor and 14 other clinicians in a hugely under-resourced facility.

Called HOPE, it stood for humility and humour; open-mindedness; patience and pragmatism; and expectation management. "I think the most important one was expectation management, which was the cure for frustration, disappointment and burnout," says Johann.

**Clockwise from left:** *Dr Johann McGavin treats a patient in an MSF clinic in Zimbabwe; Dr Angeline Wee at an MSF outpatient clinic in Haiti; and Dr Wee with outreach worker Gilbert at a refugee camp in the Congo*

Johann underwent this first mission at the age of 28, after his foundation training, which is the earliest possible with MSF, whereas Angeline, who went to Haiti at 31, was further along in her career, already working as a GP after switching from respiratory medicine.

## Careful planning

Despite the differences in their experience, both discovered that a lot of the work required from the 4,000 MSF international volunteers, who are sent in to support 20,000 locally employed nationals, is supervisory.

It is something that Liz Bowen – an MSF human resources manager in charge of field staffing – is keen to emphasise. "It's important to understand there is a strong supervisory and training element," she says. "It's not that you won't do any hands-on work – sometimes you have to, because there aren't any other staff there – but you'll always be managing some staff and they deserve to have somebody who has an idea about managing groups."

Typically, among refugees, those most at risk are children and young people, closely followed by pregnant women. For this reason, says Liz, young doctors looking to get into this kind of work should get as much exposure as they can to paediatrics, obstetrics and gynaecology. "Pregnant women refugees have a really, really hard time," says Liz, who has done missions as a nurse in Sri Lanka and Sierra Leone.

A diploma in tropical diseases is a prerequisite, languages – particularly French and Arabic – are a definite advantage, and MSF prefers international staff who can commit to 9–12 months per mission.

Planning is essential, then. As Angeline Wee says: "It cannot be an impulsive decision. All in all, I had been planning this for nine years. You really need to know what you're getting into and pick up the necessary skills. From what I have seen, people who are more experienced and with management skills tend to do better. It's not easy for someone coming out of medical school – you really need a steady head."

And then there's the question of security. Volunteers may not all be flying into a war zone, but a mature attitude to risk is indispensable, says Liz Bowen.

"We want people who are considered and thoughtful. What experiences have they had of being in an insecure situation and how did they manage it? And what is their thought about where they're going? Obviously the media portrays a certain angle, but often it's not that exciting at all. But they are unstable contexts, so they might change. If we get people who say I only want to go and work somewhere stable then we wouldn't accept them."

The reverse is also unacceptable – and here the Hollywood version might well diverge from the reality: "You don't want somebody who's completely gung-ho, thinking 'Oh I don't mind about danger.' We would reject a person like that immediately."

***Adam Campbell is a freelance journalist and regular contributor to MDDUS publications***

# A SORE LEG

## Day 1

Mary attends her local GP surgery complaining of pain in her legs. She is a 48-year-old mother of two children, obese and a heavy smoker with a history of excessive alcohol use.

Mary is seen by Dr G who records a history of pain in both legs over a period of three weeks made worse during walking and relieved with rest. The pain is worse in the left leg with "tingling pins and needles". Mary has also noticed some swelling in the left leg but says this is improving.

Dr G examines the legs and finds some soft oedema in the lower left leg but no other abnormality. There is no calf tenderness and Homan's sign (to detect DVT) is negative. Arterial pulses are not palpable on the feet but use of a Sonicaid detects a faint signal from the posterior tibial arteries in both legs. He also measures the ABPI (ankle/brachial pressure index) and confirms a reading of 1.0 – i.e. no obvious circulatory impairment. Mary's blood pressure is 180/120.

Dr G records a preliminary diagnosis of peripheral vascular disease (PVD), given Mary's history of pain on exertion and the absent peripheral pulses. The doctor prescribes nifedipine for the high blood pressure and PVD and later refers her to a local consultant cardiovascular physician. Blood tests taken at the consultation show signs of impaired liver function consistent with alcohol excess.

## Day 7

The surgery receives a call from Mary's husband requesting a home visit. A locum – Dr K – attends the patient who is complaining of a painful purulent cough, and chest and shoulder pain associated with breathing. She has a fever and auscultation reveals suspected pleurisy. Dr K notes Mary's history of left lower leg pain and swelling. He makes a diagnosis of respiratory infection but also records: "? PE/DVT".

Mary is prescribed amoxicillin and is advised to contact the surgery if there is no improvement over the next two days – at which time Dr K will arrange for an ECG and VQ scan (to rule out pulmonary embolism).

## Day 12

Mary attends the surgery for an emergency appointment and is seen this time by Dr G. She is still suffering from cough with blood-stained sputum. Dr G finds that her breath sounds are normal though she claims her chest is still very sore. Dr G tells her to keep taking the antibiotics and come in again if the infection is not settling.

## Day 19

Just before bedtime Mary collapses at home. Her husband calls 999 but the ambulance team is unable to resuscitate her and she is pronounced dead at 2310 hours. A post mortem determines the cause of death as pulmonary embolism consequent with deep vein thrombosis. The pathologist also reports swelling of the left leg.

FOUR months later the surgery receives a letter from solicitors acting for Mary's family alleging clinical negligence in her care against both Dr G and Dr K. MDDUS, acting for Dr K, commissions medical reports on the case from both a primary care expert and a consultant vascular surgeon.

The primary care expert finds Dr G at fault for not considering more seriously the possibility of DVT at the initial consultation. The use of Homan's sign is criticised as it has fallen out of favour in ruling out DVT. A call to a local vascular surgeon would have confirmed PVD was unlikely in light of a normal ABPI and that referral to an outpatient clinic would have been appropriate to assess the cause of the presenting complaint.

Another opportunity was missed when Dr K attended the patient at home. Dr K had considered the possibility of pulmonary embolism but adopted a wait-and-see approach which was unduly risky given the possible outcome. A third chance to act was missed when Mary again attended Dr G at the surgery with blood-stained sputum and continuing chest pain, but the decision was made to persist with antibiotic treatment although there was sufficient clinical uncertainty to warrant admission to hospital for a VQ scan. The consultant's opinion was that had Mary been referred earlier and treated with controlled anti-coagulation therapy this may have prevented extension of the pulmonary embolus and subsequent death.

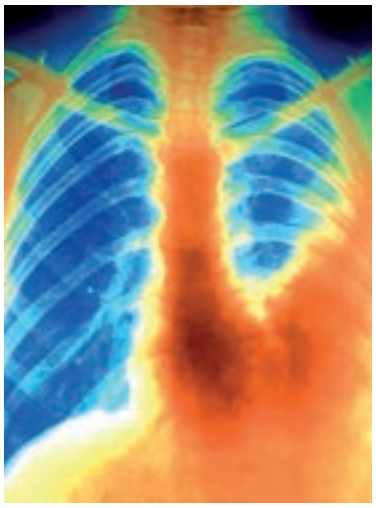


PHOTO: ZEPHYR/SCIENCE PHOTO LIBRARY

MDDUS advisers and lawyers discuss options with Dr K and decide the best course of action is to settle the claim out of court with costs shared with Dr G's medical defence organisation.

## Key points

- Always weigh up potential risks/outcomes involved in not referring a patient.
- Do not ignore inconvenient signs that may counter an "obvious" diagnosis.
- Maintain a high index of suspicion in respiratory symptoms combined with leg pain.

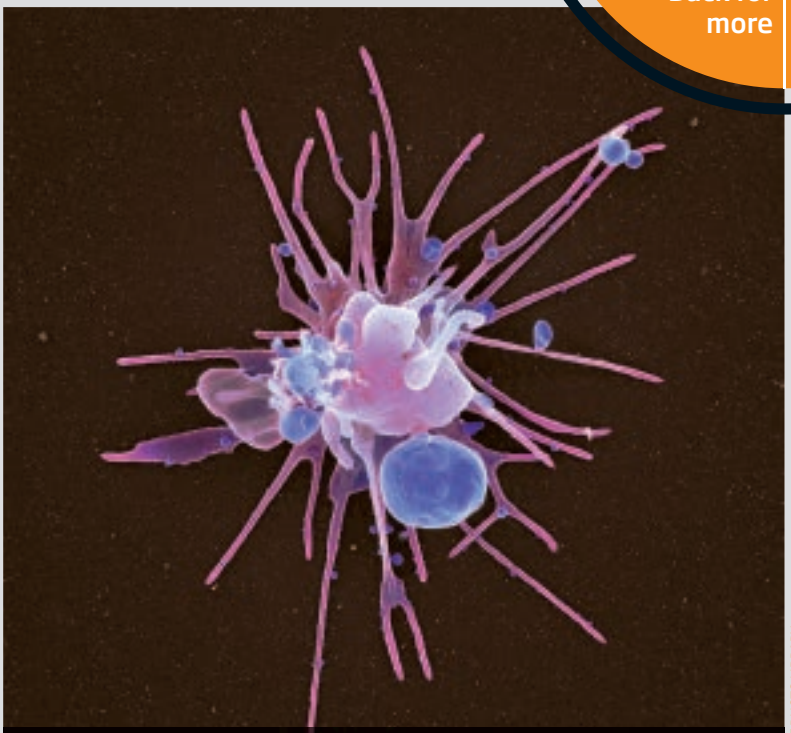
# OUT THERE

**MAGIC CURE** The first known use of "abracadabra" was by a 2nd century doctor who was trying to treat malaria. Serenus Sammonicus, doctor to the Roman emperor, had the word written on an amulet that was to be worn by the afflicted. *Source: omg-facts.com*

**BRAIN BOOST** Making a fist could help you remember those thoughts that are on the tip of your tongue. Clenching one hand increases activity in the brain on the opposite side of your body about 90 seconds later. Montclair State University researchers found those who clenched a fist were better able to recall a list of words.

**FAT FOOD** Fast food diners underestimate the calorie content of their meals by an average of 200 calories, with underestimates getting worse as portions increase. Diners at Subway were more likely to underestimate calories than at other outlets. Harvard University researchers have called for clearer calorie labelling on menus.

**BOTCHED BEAUTY** Early 20th century surgeons have tried making breast implants out of honey, glass, ivory, wool and paraffin, often with disastrous results. The first successful enlargement using a silicone breast prosthesis was carried out in the US in 1962. *Source: @qikipedia*



## WHAT ARE WE LOOKING AT?

**Stumped? The answer is at the bottom of the page**

PHOTO: SCIENCE PHOTO LIBRARY

## Pick: DVD - Critical Care

Directed by Sidney Lumet, starring James Spader, Kyra Sedgwick, Helen Mirren, Albert Brooks; 1997

END-OF-LIFE care is one of the many issues at the heart of this satire on the US healthcare system. Based on the novel by Richard Dooling, it follows resident Dr Werner Ernst (Spader) and his fight with two half sisters over the care of their terminally ill and comatose father. At a time when cost cuts and profit are increasingly prominent factors in NHS patient care, this biting comedy remains relevant. Smug, whisky-swilling Dr Butz (Brooks) is the personification of modern medical greed, incompetence and amorality.

He takes great pains to ensure Ernst's patient is adequately insured before allowing him to be treated. Butz then explains he himself has no insurance, reasoning that should he be taken ill the hospital would likely agonisingly extend his life in order to squeeze every last cent out of his policy.

The womanising Ernst initially appears as cynical and unlikeable as the rest but eventually learns to defend his helpless patient against a litany of money-motivated attacks.

## Book Review:

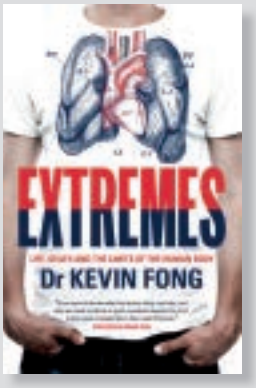
### Extremes - Life, Death and the Limits of the Human Body

*Hodder & Stoughton:* ***£20*** *hardback;* ***£8.99*** *paperback (due out 24 October 2013)*

***Review by Jim Killgore, publications editor, MDDUS***

KEVIN Fong is best known from TV as the presenter of *Extreme A&E* and occasional one-off documentaries and *Horizon* episodes. But he is also a doctor, lecturer in physiology and expert in space medicine, being co-director of the Centre for Aviation Space and Extreme Environment Medicine at University College London.

And it this core interest that is the subject of *Extremes*, his short but engaging new book which falls unashamedly into the category of popular science. In the text he expands on the notion that human life persists only within a narrow envelope of environmental conditions – temperature, pressure, atmospheric composition, gravity. Stray outside that envelope and our physiology rapidly loses the ability to cope. It is life at these boundaries that excites Fong's interest.




In *Extremes* he develops the subject by first tracing his own career – astrophysics then medical school and later as a researcher in space medicine at NASA, in addition to his training as an anaesthetist. He then explores how the human body responds at extremes of heat and cold and pressure, in low gravity and in catastrophic trauma and serious illness.

No doubt Fong is a talented lecturer as physiological concepts are explained with elegant simplicity but what brings the text to life are the numerous tales of survival (or not) at extremes – a pilot in the Battle of Britain who escapes a fiery crash burnt beyond recognition, the Norwegian skier submerged in an icy river whose heart stopped for three hours, and Fong's own experiences working as a doctor in A&E and in intensive care, flying in the notorious vomit comet or strapped in a high-G centrifuge at NASA.

These stories provide the context for an exploration of life, "its fragility, its fractal beauty and its resilience," says Fong. The book is also about technology – "the theme of rapid advance, using technology and science to surround our physiology like a cocoon".

Most of all though *Extremes* is a cracking read, a well-written science book rich with curiosity and wonder.

WHAT ARE WE LOOKING AT? *Activated platelet, SEM*