Vol 2 Issue. 1 ■ June 2013

The Physician

Journal of The British Association of Physicians of Indian Origin

In this Edition...

Understanding
The Francis Report

Effective Management
Of Severe Vomiting in Pregnancy

Acanthamoeba Keratitis:
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Message from the Editor-in-Chief

Dr Ramesh Mehta MD, FRCP, FRCPCH, FHEA, DCH

Dr Mehta is a Consultant Paediatrician at Bedford Hospital, UK. He is founder president of the British Association of Physicians of Indian Origin (BAPIO) and secretary General of the Global Association of Physicians of Indian Origin (GAPIO)

The Francis report is frank, bold and challenging to the medical profession. Dr Makani Purva in this issue analyses the outcomes. The report highlights the need for changing the current culture of fear to a culture "where the only fear is the failure to uphold the fundamental standards and the caring culture." The General Medical Council has recently launched a new version of Good Medical Practice which requires all doctors to "act without delay if you have good reason to believe that you or a colleague may be putting patients at risk". BAPIO has experience of fear of establishment amongst the members. We have several examples where member tried to blow the whistle and faced severe reprimand.

Recently BAPIO supported a meeting at the Houses of Parliament on "Gandhian Values in the Modern NHS". Lord Bhikhu Parekh in his inaugural speech recollected the story of when Gandhi was trying to fight the establishment in South Africa and cajoling the Indians to stand up against injustice. He had said, "If you behave like worms don't complain of being trampled upon". Gandhi had always stood up for truth and honesty and he was constantly seeking fairness and justice. Francis says, "We need to be courageous to speak up and stand up for the patients that we serve". Good Medical Practice is keen on professionalism in action: "Patients need good doctors. Good doctors make the care of their patient the first concern: they are honest and trustworthy and act with integrity and within the law". BAPIO's vision, "Empowering doctors and dentists of Indian heritage to be beacons of leadership and professional excellence," is consistent with these principles.

However, who looks after the doctors? There are professional bodies that should be doing this job, but we know that most of the doctors feel unsupported at times of crisis. BAPIO has tried to stand up for fairness and justice. The HSMP case is an example. International medical graduates (IMGs) face an unfair uphill struggle in most Royal College examinations. However we were shocked to note that the exit examination of the Royal College of General Practioners (MRCGP, CSA part) has a pass rate of 36.8 % for IMGs in comparison to 90.6 % for UK graduates. The college is not willing to accept that there is any flaw in the examination. BAPIO has thus decided to stand up for fairness and justice, and is filing a case in the High Court for judicial review.

Francis, Gandhi and we all should have the satisfaction of standing up for principles.

Editors note

Dr Parag Singhal MD, MPhil, FRCP

Dr Parag Singhal is a Consultant Endocrinologist at Weston General Hospital, WSM and Divisional Director for Emergency Care. He is MRCP (PACES) examiner and Honorary Senior Lecturer, Bristol University. Dr Singhal has written papers in prestigious scientific journals and is a referee for diabetes journals. Dr Singhal is chair of BAPIO South West division

This issue has raised some important topics, such as the Francis report and its implications, the importance of sound clinical medicine, and the benefits of Indo-British collaboration. Interestingly, all of these issues are interlinked. It is clear that there is a need for enough doctors to provide safe and quality care, but the resources are finite. In fact it is unlikely that the NHS will ever see the degree of investment seen of the last few years. Therefore the needs of the hour are innovation and creativity. Some specialities are facing severe medical staff shortages, thus impacting on patient care. It was unfortunate that the Department of Health, under pressure from various organisations, took a retrograde decision in 2006 which resulted in the mass exodus of non-EU international medical graduates. The Department of Health took no account of the impact of such a decision on the NHS, which has a long history of reliance on overseas health workers. The story of overseas recruitment is not new. Since the 1930s, successive governments have resolved staffing crises through recruiting workers from overseas. Through the experience highlighted in the report by the management team of Weston General Hospital, the value of international medical graduates (most of them well trained and qualified) to the National Health Service (NHS) has once again been emphasised, especially the usefulness of resilience in the system. It is extremely important in the current financial climate that the resource available is well utilised and not wasted on locum agencies, and perhaps the GMC and Department of Health could draw some lessons, making it easier for international medical graduates to gain entry to the UK. This would benefit both the NHS and the international graduates.

The Francis report clearly mentions the importance of providing quality care within the current financial resource. If ever there was the time to consider the concept of good clinical medicine, it is now. Professor Bannister's article makes good reading, as it articulates a case for regulatory bodies to change the structure of undergraduate teaching to enable future doctors to practise good clinical medicine, which would help to bring sustainability to its rightful place at the centre stage of healthcare policy, e.g. avoiding unnecessary investigations means that the resource could fund other more useful activities.

Innovation and creativity are born not during abundance, but during extreme conditions. I draw satisfaction from authors highlighting the need to explore new ways of working which will go a long way in sustaining the NHS.

Overseas Recruitment to Cover Middle Grade Rota: Benefits of Indo-British Collaboration

Introduction

Despite the Coalition Government's plans to cap non-EU immigrants, junior doctors from India are being recruited to resolve current medical staffing shortage. Present and past preoccupation with immigration takes no account of the impact of such decisions on the National Health Service (NHS) which has a long history of reliance on overseas health workers. The story of overseas recruitment is not new. Since the 1930s, successive governments have resolved staffing crises through recruiting workers from overseas. This shortage was predominantly due to not having enough medical student numbers and emigration of UK trained doctors to work mainly in United States and Canada, because of relatively poor pay and conditions of the NHS.

The output from UK medical schools was increased in 2000 and this brought a change in attitude towards overseas doctors. By 2005 the government feared that the recruitment of overseas doctors would deny employment to a large number of home-grown medical graduates, especially as International Medical Graduates (IMGs), many of them often highly skilled, and with several years' experience in their chosen field, remained an attractive prospect for the NHS. In a bid to protect junior posts for graduates who were British or EEA nationals, in April 2006 the Department of Health retrospectively sought to prevent non EU doctors from applying for training posts in the NHS. Under new rules, hospitals could only shortlist overseas candidates if they could prove that they could not recruit a junior doctor from the UK or the EU. The British Association of Physicians of Indian Origin (BAPIO) challenged the Government in the High Court, which ruled in favour of BAPIO stating that the Department of Health's guideline was illegal. The judgement was upheld by the House of Lords in April 2008, but not before thousands of overseas doctors had had their opportunity of permit-free training abruptly withdrawn not only at great personal and financial cost to themselves and their careers but to the NHS, so much so that UK is now once again facing shortages at different levels especially in acute Medicine, O&G and Paediatrics which are becoming unpopular due to workload and increasing number of admissions. The NHS is now again looking to recruit overseas trained doctors to fill vacancies especially in Emergency department and General Medicine, Paediatrics and O&G.

We will share our experience in overseas recruitment in the Department of Acute Medicine in Weston General Hospital.

Weston General Hospital

Medical Registrars in NHS hospitals act as gatekeepers and senior on site clinicians during out of hours. Apart from clerking, they also supervise foundation doctors and give advice to other specialities. With an ever increasing rise in emergency admissions, it is even more important that the Medical Registrar rota is complete and functions well.

Weston General Hospital (WGH) is a small District General Hospital situated between Bristol and Taunton serving a population of approximately 200,000. WGH is predominantly an Emergency driven hospital making it even more important to have on site medical registrars. Since the change in visa rules, coupled with vacancies at the Deanery level in some specialities and inevitable sickness, the trust has struggled to have a fully compliant medical registrar rota. Various recruitment campaigns proved unsuccessful resulting in significant gaps on the middle grade rota. As a result the Trust has had to rely on Locum registrars, who were employed by agencies, to support the out of hours rota. These locum registrars were of variable clinical competence which was difficult to assess on CV alone. Issues with clinical competence impacted on patient care and often created more work for consultants. Foundation doctors often complained about lack of supervision and teaching and the GMC identified this as area of concern during their visit in 2011.

Governance issues in retrospect were hard to address once the Locum had moved on. It proved to be difficult to provide proper induction as they often arrived at night and worked in unfamiliar surroundings. In addition to governance and quality issues, locum doctors were expensive. The cost of locum provision at Middle grade level in 2011/12 was in excess of 1 million pounds; this is obviously is not good value for money.

Aim

The aim was to build flexibility and surplus in the Medical Registrar rota to internally cover any potential absences and provide a safe, competent and reliable workforce at this level. It was believed that internal cover with the established workforce would have financial advantages and would provide better quality service, improve the morale of the work force and overall be of benefit to the Trust.

Methodology

After receiving approval from the executive team of Weston Area Health Trust for extra funding, prestigious Medical colleges in India were contacted and short listed candidates were interviewed face to face in India using appropriate college based interview format.

The candidates had to have post graduate qualifications in general medicine with necessary experience to work at registrar level. The candidates were informed about the rules regarding Medical Training Visa which is only valid for 2 years and the requirement for them to go back to the country of their origin after two years of training.

Details of successful candidates were forwarded to the Royal College of Physicians and Surgeons of Glasgow after recommendation from the Post Graduate Dean of Severn Deanery. The Royal College sponsored the successful candidates for GMC registration and once registered, applications were forwarded to the Border Agency for MTI (medical training visa).

All candidates were given an opportunity for training in a speciality of their choice along with General Medicine experience. Overall 3 overseas trained doctors were recruited to work as medical registrars. All the candidates received a 1 month long induction during which they were paid full salary and were provided with free accommodation.

Induction included the following:

- Tour of the hospital
- Resuscitation assessment/training session - they had their capability assessed in a session with a trust resuscitation trainer and they were also sent on an ALS course as early as possible
- IT Training - training on the millennium system, access to the IT systems and emails
- Stat Man Training - health & safety/manual handling/ infection control/child protection/fire
- e-learning modules - blood transfusion, information governance, using telepath, NG tubes, equality and diversity, safeguarding adults, VTE
- Meetings were arranged with the Medical Director, Divisional General Manager and Matrons.
- Shadowing for half a day in ITU and ACC (ambulatory care centre) staff.
- Shadowing medical registrars for few night shifts (and an on-call shift where applicable).
- Shadowing their Buddy at all other times during the induction period.
- Educational and clinical supervisor allocated

Results

Since 1st August 2012, there have been 11 Registrar grade doctors on the rota instead of the normal establishment of 9 Registrars. Over establishment has led to a reduction in frequency of on call duties and has given more training opportunities to Specialist Registrars to enhance their skills and meet their training requirements. All the teams led by consultant now have a registrar along with other junior staff. Overseas registrars, despite induction, needed support from consultants to overcome their initial difficulties and settle down. All 3 overseas registrars are committed to complete MRCP and are progressing well. Foundation doctors have found their presence on the wards extremely beneficial and feedback to the Deanery and GMC has been very positive.

Since the implementation of this scheme, all absences of any kind have been covered internally without the need to recruit locum doctor of any description. Trust management is pleased with the investment and the faith they showed in the proposal put forward by the division. Savings of £400k have been achieved up to the financial year 2012-13.

Discussion and Conclusions

The emigration of overseas doctors is built on Britain's historical links with its ex-colonial territories, especially India. As a direct result of colonial rule, by the time of Indian Independence in 1947 Indian medical schools and hospital administration ran along the lines of the British model. Medical education and training were delivered in English, and geared towards meeting the requirements of the General Medical Council. This ensured that Indian-trained doctors would be able to work in Britain, and encouraged overseas medical graduates to come and gain further training and experience that they would then take home. For this reason, India was chosen as the first choice for recruitment.

Weston General Hospital being a small District General Hospital does not have the flexibility and extra workforce seen in teaching hospitals e.g help provided by research registrars during unforeseen circumstances like sickness. These unforeseen circumstances are either dealt with by calling upon the existing workforce to help or employing agency locums. With rising admissions especially elderly patients who have significant co morbidities, medical registrars play a key role in decision making and support consultants and foundation doctors both in and out of hours. We believed that building a surplus in the workforce would lead to resilience, flexibility, improved morale, reduction of workload, better understanding and eventually reduce sickness by making the hospital a better workplace.

Our experiment clearly demonstrates that building a surplus into the rota when there has been an inability to recruit is desirable. The benefits of doing this are three fold. Firstly, there is improved clinical governance, teaching, supervision of foundation doctors and patient safety outcomes. This is due to the consistency in the rota with substantive doctors who understand the hospital's systems and processes. Secondly, there is improved team morale with the remaining doctors not being asked to continually cover gaps or pick up additional work. Thirdly, there is a clear financial benefit as one shift covered by an agency locum doctor can cost three times as much. It also supports the ability to accurately forecast the expenditure for the year rather than the huge variability in expenditure when locums are required.

To be able to achieve the benefits of an over established rota, international recruitment for Medical Registrar level doctors has been necessary due to the unavailability of suitable local doctors. India has provided a perfect opportunity given the historical links and medical teaching delivered in English. Learning points from the first cohort of international doctors have been to provide a more robust induction time table and include non clinical issues like communication skills and exposure to social services. In the future it is the Trust's desire to strengthen links with Indian medical training to be able to provide a rolling programme.

In summary, recruitment of international doctors directly at Registrar/middle grade level is safe if appropriate selection methodology is applied and good induction provided. Over establishing leads to better training opportunities for Specialist Registrars and is associated with significant financial benefits.

We believe that this concept should be rolled out across different health professions e.g nursing where sickness, vacancies and extra capacity is often filled by agency nurses.

We sincerely thank Prof Davinder Sandhu, Postgraduate Dean, Severn Deanery for supporting the recruitment.

Kerry White
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End of Life Care in England

Introduction

Significant developments in end of life care have taken place in England over the last eight years. In 2005, the government at the time undertook a public consultation, Your Health, Your Care, Your Say[1], about what people felt were their priorities for the NHS. One of the key themes was making sure that the quality of end of life care was good, wherever people chose to die. This topic was further explored in the White Paper, Our Health, Our Care, Our Say[2]. End of life care became a work stream of the NHS Next Stage (Darzi) Review. The outcome of the Darzi review was combined with a piece of work that had already been ongoing, led by Professor Sir Mike Richards, on a wide-ranging consultation with health and social care professionals working in end of life care. The National End of Life Care Strategy was published in 2008[3] and the National End of Life Programme, which has overseen the strategy implementation, led by Claire Henry, was formed at the same time. Since then, through a process of engagement in a variety of different areas, we have seen significant changes in where people die. There has been a reversal of the trend of increasing numbers of people dying in hospital, with a reduction nationwide in the percentage of hospital deaths and increasing proportions of people dying outside of hospital, mainly in care homes and people's own homes[4].

The programme was founded on a number of basic premises. These are that healthcare professionals should be able to identify those people with chronic illnesses who could be in the last year of life; a health professional who knows the patient well should then begin advance care planning discussions about where the patient would like to die; these wishes then need to be available to the broader health community, using electronic palliative care coordination systems (EPaCCS), initially known as end of life registers, so that when the time came for terminal care, the patient's and family's wishes were known; well coordinated care then means that the patient's wishes can be respected; the quality of care should be excellent and appropriate for end of life care wherever the patient has chosen. National surveys[5] have shown that the majority of people would like to die at home. In 2005-2007, 58 % of people were dying in hospital[6]. Finally, care after death should be sensitive and efficient, with bereavement support available for those who need it. These themes were brought together into a single diagram.

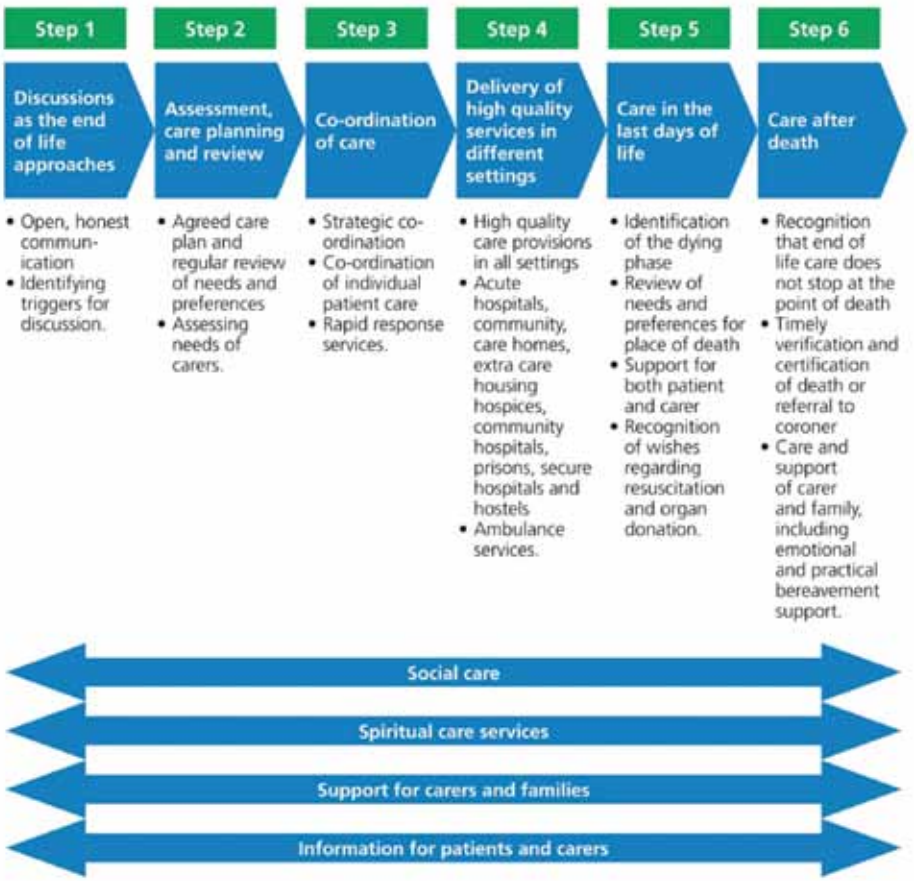

Figure 1. End of Life Pathway (Courtesy of National End of Life Care Programme and adapted from the End of Life Strategy 2008).

These basic premises are common sense and apply to all of us. To quote Benjamin Franklin, 'Nothing is certain except death and taxes'. We are all going to have to face death and we would want the quality of care we receive to be excellent. Not only do we want this for ourselves, we want it for our loved ones. Many of us would like to be able to choose where we die, with the majority of us choosing home. The challenge for the National End of Life Strategy has been turning these common sense and very human principles into practice.

Has the Implementation of the National End of Life Strategy Succeeded?

There is now increasing evidence to show that there is a shift over time in decreasing numbers of people dying in hospital[7]. This change has now been sustained on a year-on-year basis since 2008. It is hard to demonstrate clear causal evidence, from a scientific perspective, that this has been specifically due to the efforts of implementation of the National End of Life Strategy. However, the links between the efforts that have been made, along with new evidence from different components of the strategy, strongly suggest a causal relationship. One of the key markers of change in end of life care has been death in usual place of residence. Care homes are included as well as homes, as many people live in these care homes for significant periods of time. Others may spend their last weeks of life in a nursing home and may choose not to be transferred to hospital for terminal care.

Figure 2. Quarterly percentage deaths in usual place of residence 2007-2012.

These figures indicate that the varieties of interventions that have taken place in end of life care are having an impact on where people die. At the same time, the national VOICES survey of bereaved relatives[8] has been published, and a baseline has been set to try and gain an insight into the quality of care that has been given. The survey will be repeated on an annual basis. The reports are geographically divided up into cluster clinical commissioning groups. This will help to provide new commissioning bodies and health and wellbeing boards, with both qualitative and quantitative information on end of life care.

How has this change in end of life care taken place? The National End of Life Programme has helped coordinate information on end of life care and has commissioned the National End of Life Intelligence Network to gather together multiple sources of data on end of life care, which has provided a unique insight into both what has been happening and monitoring of change[9]. The National Programme ran a project to see if EPaCCS were an effective way of coordinating end of life care. Eight pilot sites across the country were involved in this two-year project, with the production of a report which offered great promise for these systems[10]. Work is ongoing and the latest figures from a variety of different centres indicate hospital death rates are low for patients who are on an EPaCCS at time of death. These figures are valid for cancer and non-cancer patients with chronic life-limiting disease, including heart failure, COPD and dementia. Some centres have had EPaCCS running for more than two years. We are now starting to see results from various centres with many thousands of patients dying in their place of choice. Data from 3171 patients who died and were on an EPaCCS in the South West has shown an overall hospital death rate of 10% (unpublished). The current national figure is 53%. This data included 990 non-cancer patients. Outcomes of this data are due to be published in early April by the National End of Life Programme in a report on the economic evaluation of EPaCCS.

The financial implications of the shift from hospital death to death in usual place of residence are significant. Estimates of cost vary. Cost of hospital care in the last year of life has been estimated to be £3500[11], with a reduction of seven days spent in hospital. Community care has been estimated to be somewhere between £500 and £1500 cheaper than hospital care. There are approximately 600,000 deaths per year in the UK. If the hospital death rate shifts from 53% to 40%, using a figure of £1000 saving per patient, the reduction of cost to the NHS would be £78,000,000.

Over the last year, the Programme has focussed on transforming end of life care in acute hospitals. In the first year, 26 acute hospital trusts were part of the pilot. The focus of this programme has been to encourage the use of five key enablers that are considered to be a fundamental part of end of life care in hospitals. These are: identification of people who could be in the last year of life; use of advance care planning; use of the AMBER care bundle (a decision-making tool for ceiling of care in patients who are deteriorating and have an uncertain outcome, possibly dying within one to two months); rapid discharge home to die pathways; and use of an integrated care pathway for the last 48 to 72 hours of life, such as the Liverpool Care Pathway. A report on the outcome of the first year of the Transform Programme is due to be published in March 2013 and in keeping with other interventions that have taken place in end of life care, the progress made is encouraging.

Practical Implications for Clinicians

There are significant challenges for clinicians to change their practice if end of life care is going to continue to develop. Successful implementation of the end of life strategy involves the whole health community. Developments in each area, including community services, acute trusts, ambulance services, district nursing services, out of hours services and hospices must be linked together and coordinated. This means that clinicians need to think about how their service relates to the broader provision of end of life care. Thus for GPs, overseeing identification of patients who may be in the last year of life, use of advance care planning and EPaCCS, as well as ensuring that end of life drugs are in the home for the final days of a patient's life, are all part of what needs to be done. In the same way, hospital clinicians need to be alert to identifying people who may be in the last year and to work out how they can hand this information on to primary care in an effective way. All clinicians who look after these patients need to develop their communication skills, so that they can work out sensitive ways of engaging in advance care planning discussions with patients and families. Hospital consultants need to be able to oversee this process for their teams, and to be able to participate and communicate what has been done to the broader health community. Particular challenges face those clinicians looking after patients with long-term conditions, including heart failure, COPD, dementia and frailty, as these are the areas where improving care will have the biggest impact moving forwards. Palliative care services have led the way over the last 40 years in looking after cancer patients at end of life. Hospital death rates for non-cancer patients are still high, varying between 60 % and 70 % . Some centres have hospital cancer death rates of less than 35 % . Whether it is possible to achieve the same levels of non-cancer deaths outside of hospital as for cancer remains to be seen, but much of the progress is encouraging and it looks as though a significant shift from where we are now is possible.

What we do know is that if we are going to progress end of life care, clinicians across the whole health community need to be involved. Individual clinicians need to ask themselves, are they aware of what is happening with end of life care in their locality and how can they participate with their patients? Until we are sure that all of those patients who would like to have had the opportunity to discuss end of life wishes have done so, we will need to continue to redouble our efforts. The changes in end of life care are so widespread that every locality has made some progress, so linking with these efforts will be effective.

What does the Future Hold?

End of life care is part of the NHS mandate[12]. It is specifically mentioned as a key area for the NHS Commissioning Board and will be led by Dr Martin McShane as part of domain 2, long-term conditions, as one of the five domains covered by the NHS Commissioning Board. Currently, the National End of Life Programme is ensuring continuity of a successful implementation programme of the National End of Life Strategy by forming transition arrangements over the next year. This will help to ensure that the good work of the programme continues into the new structures of the NHS over the forthcoming years.

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Inequalities in CSA Exam:
BAPIO Taking the Bull by the Horns

In recent years, racial equality and to some extent human rights have dropped out of popular use within the political vocabulary. Of those who are hurt by the system, only those with some revolutionary consciousness of justice dare to raise concerns over inequality! Most doctors may acknowledge the fear of the unhealthy culture, known for its secrecy and frequent vindictiveness towards those who dare to raise their voices.

It is fair to say that most international medical graduates do feel that when it comes to the issues affecting ethnic minorities, trade union officials usually drag their feet. On critical issues, such as when the career of a very large number of clinical skills assessment (CSA) trainees are in serious jeopardy, most protection bodies are still operating in an aura of what seems superficial remedies. Where the time for action is the real essence of the hour, they engage 'ethnic minority' forums at merely discussion level.

International medical graduates (IMGs) in GP training are facing catastrophe in their careers as a result of what is described as 'hugely' differential pass rates. Frankly, those affected by what is at the centre of the controversy – unfair examination – just cannot wait for the 'talk shops' to discuss what is already in the public domain.

This is why one can vindicate the actions by British Association of Physicians of Indian Origin (BAPIO) in relation to the CSA issue. The aspect of disproportionate failure rates has been debated for over a year, at least within BAPIO. According to BAPIO there has been serious dialogue by BAPIO officials, and other supporting groups such as BIDA, to see if RCPGP and GMC can be influenced to seek the potential causes and remediesfor preventing a blatant injustice to the IMGs through the CSA exit test.

I met up with the President of BAPIO, Dr Ramesh Mehta, who himself is a well-established examiner, to ask why his organisation is now pursuing a legal challenge route. His response was quite clear: "You see, we want fairness and equal treatment for the IMG trainees. For the qualifying bodies it should be an extremely worrying point if a large number of trainees from a particular background are failing, despite most successfully completing three years in training under supervision and actually servicing live patients."

I wonder why a good employer would accept the fact that its training package that costs taxpayers nearly half a million pounds per trainee has been failing to prepare adequately for the final exam! To be fair, under the scheme, each of the trainees work under supervision and are assessed every year before they are moved on to the next year. If these processes are effective, then one would assume that the weaknesses would have been spotted earlier. Is not the purpose of supervision supposed to be the ability to identify and plan to remedy issues for improving performance?

Dr Mehta says, "It is not only that it takes little account of the fact that there is also a huge diversity in the patient population, it still uses a simple yardstick to measure a doctor who has successfully worked for three years and passed the Applied Knowledge Test (AKT). It is ironic that a test lasting a couple of hours involving actors - not real patients - decides the fate of these doctors; in many cases after having served more than 3000 patients during the training without complaints." It appears that the whole structure of training and assessment is in need of a thorough overhaul, since obviously it seems to be lacking in cultural and linguistic sensitivity with unexplained race bias.

Professor Allen, who had examined the General Medical Council (GMC) fitness to practise procedures, found that a higher proportion of referrals to the GMC from public bodies were about international medical graduates, and that there were differences in the nature of the allegations made (Policy Study Institute Report, 2008). The Chief Medical Officer at the time noted that there was no explanation for the Preliminary Proceedings Committee sending relatively more international medical graduates to the Professional Conduct Committee. He remarked, "In [a] nutshell what it really meant is that, once within the General Medical Council, international medical graduates were more likely than their United Kingdom counterparts to be referred to the disciplinary procedures." Sir Liam Donaldson, CMO, also stated that "Examining the relationship between ethnicity and doctors is complex. Whilst many institutional barriers have been removed and much has improved, there are still areas that cause concern. Addressing these issues will require culture and behaviour change."

The Royal College of General Practitioners (RCGP) commissioned a review of possible racial and sex biases in the exam in 2010 that admitted that ethnic-minority candidates were continuing to perform 'differently' to other candidates. RCGP figures for 2010-11 indicate that the failure rate for IMGs taking the CSA component of the MRCGP is at 63.2 %, compared with 9.4 % of UK graduates. That was some years ago - we are in 2013 now.

According to BAPIO's own survey, one of the respondents highlighted, "I have good references from 20 hospital consultants, several GP trainers, 40 excellent MSFs, 100 PSQs, have been working for NHS for seven years, have seen at least three thousand patients in GP surgeries, passed AKT with good marks." Is it not odd if he cannot pass CSA? If he was not fit to practise, why did his trainers not raise concerns; instead leaving it to the last stage for the RCGP actors to decide his fate? Are the RCGP actors more qualified than the actual patients they have served over the period of three years? BAPIO has quite rightly centred on the ethos that while patient safety is of utmost importance, so is maintaining the standards of examination to provide a fair and just environment for the professionals.

According to Dr Satheesh Mathew, Vice President BAPIO, "These IMGs continue to endure immense strain on their families, creating personal anxiety, stress and financial ruin, having spent tens of thousands of pounds on exam fees and courses. All this is because of unfair assessment." British International Doctors Association (BIDA) chairman, Dr Sabyasachi Sarkar, wrote to GMC, "The failure rate is simply staggering."

The GMC has launched a review into the failure rates for different groups of medical graduates taking the MRCGP exam. Meanwhile, BAPIO has taken legal advice for a judicial review application with a potential for greater ramifications that may lead to a review of assessment processes by all the colleges, postgraduate deaneries and the GMC. There are also plans to approach the Health Select Committee in Parliament over the issue, since it is costing taxpayers a huge amount in the loss of skilled professionals. The Equality and Human Rights Commission undoubtedly has a role in monitoring such anomalies, and is potentially ripe with inequalities against the IMGs.

Buddhdev Pandya MBE

Buddhdev is Director of Corporate Affairs of British Association of Physicians of Indian Origin (BAPIO) and associated with the organisation since its inception and heads the central office of BAPIO.. He was a member of the core team for the development of Medical Defence Shield, unique initiative developed by doctors to provide advice and representation support. He is a member of a Hospital Authority and instrumental in establishing many healthcare initiative in the community. He is a member of the BAPIO CSA Campaign Team. He is Managing Director of BAPIO Publications Ltd. and Director of Global Association of Physicians of Indian Origin - Europe. Email: buddhdev.pandya@bapio.co.uk

Understanding the Francis Report

The long-awaited Francis Report, published in February 2013, makes for compelling reading. It comes at a time when many of us healthcare professionals have to deal with ever-increasing pressures to cut costs while at the same time striving to maintain quality in the care we provide our patients. It is important for all of us to examine this report carefully and assimilate the key messages from it.

Background

Robert Francis QC was first commissioned in July 2009 to chair a non-statutory inquiry in the then Mid Staffordshire General Hospital NHS Trust. This was triggered by the high mortality rates of the trust in 2007. The results of the first enquiry published in February 2010 concluded that there was a lack of basic care to patients across several wards and departments. The Board was accused of being more interested in achieving FT (Foundation Trust) status and concentrated more on statistics and reports than the outcomes of patient experience. More importantly it was damning on the role played by external organisations such as the PCT (Primary Care Trust) which had not identified the concerns till the investigation by the HCC (Health Care Commission) in 2009. The enquiry recommended that Monitor de authorise the Mid Staffordshire NHS Foundation Trust when the power came into effect, and suggested that there should be a public enquiry to investigate the issues highlighted in the first enquiry. The Department of Health and the Trust Board accepted all the recommendations of the first enquiry and the second enquiry, before a public enquiry was commissioned by the Government under the leadership of Robert Francis QC in June 2010. This report was finally published in February 2013 and consisted of over 1000 pages of detailed analysis and recommendations. The shorter 125 pages of executive summary provide a good feel of the complete report.

The Report

The report commences with a consideration of key warning signs of poor care that existed in Mid Staffs, that should have triggered corrective action but did not. The next section explores issues relating to the governance and culture of the Trust. This is followed by an examination of the role of patient and public involvement groups, the commissioners, the SHA (Strategic Health Authority), and the regulators to understand what went wrong and to consider the role of other organisations. The conclusion of the report deals with themes relevant to the present and future, with recommendations.

Warning Signs

Robert Francis QC unearths a whole series of events which in itself should have triggered an enquiry as early as 2004 with the reduction in its star rating, when the Commission for Health Improvement (CHI) re-rated the Trust, and it went from a three-star trust to zero stars. The HCC commissioned annual surveys of staff and patient opinion which revealed that the trust was in the worst performing 20 % in the country. A whistle-blowing incident involving a staff nurse's report in 2007 was also ignored. Against a background of problems the trust announced staff cuts, which was not questioned by the SHA. The HCC meanwhile was preparing to investigate claims of poor care, but did not know that at a national level the trust was being considered for FT status. Finally, Monitor did not know about HCC's impending investigation until after it had given the FT status to the hospital in 2009. A breathtaking series of incidents over a period of five years should have alerted someone, somewhere to the magnitude of the problem unfolding within the hospital walls, but unfortunately did not.

Analysis of Evidence

The inquiry report examines the role played by each organisation on what they should have known and done in response to concerns raised. It is critical of the trust board not responding to the concerns that were raised to it, the SHA for raising these concerns to the Department of Health (DoH) at the time of the FT application, and Monitor for awarding the FT status without properly assessing the trust's capability of delivering effective patient care. The lack of communication between various organisations was highlighted as the key problem. Further, the report highlights the disconnect between policy decisions being made and their practical implementation. It has been rightly pointed out that the setting of national standards in itself will not "catch" a Mid Staffordshire, but it is more importantly the establishment of robust and effective methods to police those standards, which will eventually prevent another Mid Staffs occurring.

Key Recommendations

The report makes 290 recommendations, and the following are some key ones.

A common culture made real throughout the system - Openness, transparency and candour

The report highlights the need for changing the current culture of fear to a culture "where the only fear is the failure to uphold the fundamental standards and the caring culture". The recommendation is that it should be a criminal offence for any registered doctor or nurse or allied health professional or director of a registered or authorised organisation to obstruct the performance of these duties or dishonestly or recklessly make an untruthful statement to a regulator.

Monitoring of compliance with fundamental standards
The importance of having clear and simple standards that both providers and patients can understand has been highlighted. These standards should be informed by an evidence base and be effectively measurable. The fundamental standards should be policed by a single regulator, the CQC, monitoring compliance as well as governance and financial sustainability. There is a recommendation that NICE should produce evidence-based tools for establishing the staffing needs of each service.

Enforcement of compliance with fundamental standards
There is an expectation of zero tolerance, with a service incapable of meeting fundamental standards not being permitted to continue. Further, non-compliance with a fundamental standard leading to death or serious harm of a patient should result in prosecution as a criminal offence, unless the provider or individual concerned can show that it was not reasonably practical to avoid this.

Effective complaints handling
A new recommendation has been introduced for an independent investigation of a complaint to be initiated by the provider trust under certain circumstances, such as if a complaint amounts to an allegation of a serious untoward incident or a complaint raises substantive issues of professional misconduct or the performance of senior managers.

Applying for foundation trust status
There is an ongoing recommendation for the merger of CQC and Monitor, and numerous suggestions for tightening up the process including physical inspection of sites by CQC prior to awarding FT status.

Accountability of board-level directors
The report tackles the issue of lack of accountability currently among board-level directors. A finding that a person is not fit and proper to undertake the role of director may henceforth disqualify them from being a director of any other healthcare organisation, and they could themselves be also reported to the regulator.

Medical training and education
The report recommends that students and trainees should not be placed in organisations which do not comply with the fundamental standards. Further, those charged with overseeing and regulating these activities should now also make the protection of patients their priority. The General Medical Council's system of reviewing the acceptability of the provision of training by healthcare providers must include a review of the sufficiency of the numbers and skills of available staff for the provision of training and to ensure patient safety in the course of training.

Caring, compassionate and considerate nursing
The report has asked for an increased focus on a culture of compassion and caring in nurse recruitment, training and education. The report would like to see ward nurse managers work in a supervisory capacity and not be

office-bound. The Nursing and Midwifery Council should introduce a system of revalidation similar to that of the GMC with a responsible officer for nursing in each trust. To tackle the issues of poor care noted among elderly patients, one suggestion is to create a new status of a registered older person's nurse.

Quality accounts with information about an organisation's compliance or non-compliance with the fundamental standards should be made available on each trust's website.

Robert Francis has recommended that every organisation should announce, at the earliest, its plans on how it is going to accept and implement the recommendations, and within the year publish a report with its progress towards these recommendations.

It is important that we participate in these changes in our organisation and make the improvements happen.

Conclusion

The Bristol enquiry was a wake-up call to the medical profession and it was believed, at the time, that lessons would be learnt. However this does not appear to be the case and the Francis Report proves this. The word "hindsight" occurred at least 123 times in the transcript of the oral hearing and "benefit of hindsight" 378 times. Empowered with the "hindsight" provided by the lessons from the Bristol enquiry and many others that followed, the Mid Staffs disaster should not have happened. Yet we let it happen.

The Francis Report is yet another wake-up call to professionals like us. As Robert Francis QC pointed out, the system cannot make the change for the better, it is the individuals in the system that can. Is there a hospital near you, or perhaps even yours, which may be declared as the next "Mid Staffs"? We need to be courageous to speak up and stand up for the patients that we serve. The big question is ... will we?

Robert Francis asks for a culture change in a climate fraught with tensions between management and clinicians. Consultant morale is the lowest it has been in years, and not enough nurses can even be recruited into the posts. Further nursing profession regulations could potentially make the nursing profession unattractive for new entrants. Talk of criminalising failure to deliver care may only drive the offenders deeper into the woodwork. People will be less likely to open up to their faults if they are afraid of being prosecuted. The report talks about rooting out the blame culture, but until that is accomplished, one would always be worried about blowing the whistle. The management may like to describe the situation as "it is no longer a no blame culture but a fair blame" culture - but fair by whose standards, one wonders.

We have a government that has set targets for financial savings for healthcare organisations. The management, unprepared for these challenges, will make changes such as cutting manpower because that is the easiest way to save. Unless the government has a rethink of its financial strategy for the NHS, it is difficult to see how the management will cope with demands. On the other hand, one could argue that a well-qualified management team could identify cost-cutting measures which do not sacrifice quality. The report's recommendation to provide accreditation for management post-holders and holding them more accountable for their performance may encourage individuals with the correct credentials to apply for these posts. Too often, managers in such posts are not specifically trained and tend to learn more on the job.

The Deaneries have been given a chance to influence the environment in which training takes place, and must grab this opportunity to make an impact. It can only be a good thing for trainee doctors to be made aware of their responsibility to report deficiencies in care, as a cultural change started amongst trainees is more likely to produce a next generation of doctors with a conscience – a conscience that will ensure that they act on behalf of their patients.

Far too many organisations exist, and each adds further bureaucratic barriers to the transfer of information. The Francis Report is welcomed as a step in the right direction in highlighting this issue. Particularly welcome is the suggestion to not embark on another re-organisation, but one wonders whether this will be followed.

While all this may be gloomy reading, one needs to very seriously reflect on the finding of the Francis Report that patients were being treated poorly and the medical profession let it happen. We need to be prepared to stand up on behalf of our patients.

The Francis Report is a compelling read, and I would advise every one of you to read it, if you have not done so already.

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Is Increasing Specialisation Counterproductive?

Is Increasing Specialisation Counterproductive?

Background

All healthcare systems in the developed world face an increasing demand for healthcare and budgets that are finite. The grim reality is that there is little supportive evidence for many widely-used interventions. It is easier for the time-pressured doctor to write a prescription or defer to an investigation than take a full history, conduct an examination and make the best opportunity of the consultation to get to the root of the patient's problem. As many diseases are self-limiting, patients managed by this process do not automatically come to harm, but precious resource is wasted either on medication or investigation when a better-trained doctor, able to make a diagnosis and offer an informed explanation at the initial consultation, would be far superior.

Traditional Practice

My experience in trauma and orthopaedic surgery will be similar to those in all branches of medicine. I started consultant practice a quarter of a century ago. There was one consultant per 70,000 population and seven registrars to meet the needs of a city of 700,000. Many of us developed a special interest and cross-referral was common. The consultant staff in all specialities met weekly to discuss difficult cases and daily over the lunch table in the doctors' dining room to share and resolve patients' problems and the business of the hospital. Lines of communication were short and the cost of running the service manageable. Those times should not be viewed entirely through rose-tinted spectacles. These were not halcyon days for some patients. Those with a fractured hip waited days for surgery, and arthritic hips, years. There were not enough of us to deliver the service we would have wished for our own relatives and expansion was necessary.

Medical Manpower

Accordingly, the medical schools expanded exponentially from 1969. It became apparent that the additional students were either females or postgraduates. My own medical school has since quadrupled the number of undergraduates and the undergraduate intake of my adopted medical school is 70 % female, and fewer males graduate than 25 years ago. After registering, a high proportion of the females elect for part-time work. If medical graduates work half-time, the cost to the state of their training doubles, the experience they acquire is diluted, more doctors work fewer hours, and they gain less experience. Less experience means less well-informed decisions and greater reliance on investigations. More doctors have not solved the medical manpower problem and less experience has reduced its versatility.

Experience of Medical Manpower

Limited working hours result in specialists who are perilously short of general clinical experience on completing higher training.

The current requirement is that an orthopaedic specialist registrar be involved in 1800 operations over the six-year training programme. One-third of these will actually be performed personally. A dextrous trainee 30 years ago would have performed 600 cases in a year. The fate of the current specialist registrar is super-specialisation manqué. The final two years of training are spent honing super-specialist expertise on fellowships at the expense of general skills. This means that general skills are further compromised on taking up a consultant post. Super-specialisation is quite appropriate if patients' diagnoses are straightforward and fall neatly into an approved care pathway. However, sick patients present as emergencies 138 hours of the week outside normal working hours, and need to be assessed by doctors with the general skills needed to diagnose and treat their problems.

The standard of the old FRCS was set to a level at which the successful diplomate could be expected to provide emergency care in all surgical disciplines. This has long ceased to be the case. The surgeon responsible for general emergencies must be proficient in performing a laparotomy. However, laparotomy is not routinely practised by those whose days are spent in breast surgery, reducing the numbers of consultants capable of staffing an emergency take.

Productivity and Development of the Workforce

The consultant workforce has rapidly expanded, but output has not increased proportionately. The orthopaedic consultant workforce has trebled over the last ten years but output has actually fallen over the last two. Straightforward operations have been diverted from the teaching hospital to independent treatment centres or the private sector. There are fewer cases on which to train the next generation of surgeons. List utilisation falls when consultants are away, as the registrars lack the experience to perform standard operations effectively.

The European Working Time Directive (EWTD) enjoys a mixed reception amongst junior doctors. Trainee surgeons are conscious that it reduces their experience and compromises their ability to succeed in their chosen speciality. In other specialities, fewer hours are seen to improve the work/life balance. Continuity of patient care has long been abandoned and even ceased to be a consideration. It is extremely difficult to recruit a full partner in general practice in the plusher areas of Bristol as salaried partnership or locum work affords sufficient remuneration and saves the time and responsibility of running a practice.

Medical School

The consequence of this is entirely predictable. Less medical manpower means more students to train more doctors. More students mean dilution of tuition at medical school. The newly-qualified doctors have less experience and fewer practical skills than their predecessors. Their clinical contribution is restricted by the skill set with which they graduate. Medical schools need to target their resources at the students and course content that will produce good doctors capable of providing a service to the nation that educated and trained them.

Selection

Selection to medical school is based on predicting how likely the candidate is to complete the course. A-level Chemistry seems the closest correlate, although longitudinal data from graduation becomes sketchy after the first higher diploma e.g. MRCP. The best and brightest apply, but is there any consideration of the likelihood that these lively 18-year-olds will give 35 years' service to the nation that is paying for their tuition? If positive discrimination can be applied to those from deprived secondary schools, why not to expensive places at medical school? Medical school trains rather than educates. There is little time on the curriculum for intellectual development. The medical course favours the student who can retain information rather than understand it and, if the doctor is not going to practise, she or he would obtain a far rounder education reading another subject.

Preclinical Content

The medical course is a crowded mix of competing interests. The undergraduate's brain is treated as an unlimited sponge designed to absorb infinite items of information. The volume is so overwhelming that the average undergraduate cannot retain it all and, in despair, rote-learns the anticipated content of forthcoming examinations. Anatomy is one of the bases of medicine. In an abbreviated anatomy course at one of the new medical schools, students are still required to learn the branches of the facial nerve. The clinical condition of the facial nerve that doctors are most likely to encounter is Bell's palsy. In Bell's palsy, the nerve is compressed in the facial canal, not in the branches that pass through the parotid. Knowledge of these branches is essential to the surgeon performing a parotidectomy, but only a few head and neck surgeons will ever perform this procedure and this anatomy could reasonably be learned as part of postgraduate training. Notwithstanding, a time-honoured mnemonic is committed to memory for no useful reason other than precedent. It could be argued that precedent is an adequate reason but, when my rheumatology colleague complains that some of his undergraduates are unable to identify the femur, the gratuitous detail of the anatomy course has obscured its relevance to basic clinical practice.

Clinical Content

The clinical course needs to teach not only the subject, but the ethos of medicine. The traditional attachment to a 'firm' gave the medical student the opportunity to be involved in the teamwork of patient care from an early stage, performing venepuncture, clerking on take and assisting in theatre. Their contribution was rewarded with additional teaching and the opportunity to undertake minor procedures. The 'firm' no longer exists as the EWTD channels the junior staff to shift-work. Recovery time after nights and absence during the working week conspire to dilute their experience and retard their training. Students learn by example. They accept what they see. They cannot appreciate the importance of continuity of care if they do not observe it and, instead of serving a rewarding apprenticeship, they are dispatched with a checklist of clinics, theatre

sessions and classes to attend, at which they are largely spectators. They see their consultants once or twice. The consultants provide the only continuity of care, work excessive hours to maintain a service, and offer such training as they can. The students are not present so are not exposed to this vital ethos of medical practice. Students perceive that their absence from clinical sessions will not be noticed and, suitably uninspired, skip classes. The outcome of all this is that students approach finals with a flimsy knowledge of medicine, little capacity to relate to patients, and almost none of the exposure to the teamwork necessary to run a coherent practice. The clinical years have become a version of preclinical with different textbooks, little experience of relevant medicine, and more of the same old commitment of gratuitous detail to short-term memory and examination of the same.

Overview of the Undergraduate Course

It should be possible to define, teach and examine a curriculum that covers the clinically relevant basic science and conditions that kill or cripple or are common. Attempts to teach everything mean that the undergraduate remembers little. The attempt to teach everything results in short-term retention of exhaustive lists of conditions of which few are serious contenders in a sensible differential diagnosis. There is little point teaching primary bone tumours, as approximately one case will ever be encountered by two entire years of undergraduates if they all work full-time until retirement. Rather, the student should be taught to recognise the common and seek advice when a different pattern of disease presents. This can only be acquired by bedside experience. Computer simulation is a poor substitute for this, and politically correct psychologists for seeing a really good clinician relate to a sick patient. The clinical undergraduate becomes dispirited by examinations that are unrealistic and fail to reward diligent preparation. Intelligent 18-year-olds emerge as defensive victims of their medical course, afraid to answer a question in case they get it wrong, rather than energetic young doctors anxious to learn, and learn from their mistakes.

Postgraduate Training

Having graduated, the young doctor is on acute take once a week if lucky. Foundation programmes have insufficient places in the acute specialities to accommodate their trainees. The doctor emerges after two years with less experience than his forbears did after one. Attending the operating theatre is a rarity, and there is a delay in the acquisition of basic surgical skills often until the fourth decade when the art of finding a tissue plane should have been acquired ten years earlier in the dissecting room.

Of course there are skills training courses, but the delegate at these dutifully makes an incision in pig or turkey skin, sutures it up and then fails to reinforce the learning by applying the skill in clinical practice. Minor suturing in emergency departments is now the province of the nursing staff.

The art of diagnosis has become suborned to investigation in lieu of clinical assessment. The accurate investigation of deep venous thrombosis is radiological, but that is an exception. In musculoskeletal disease, radiographs of the wrong joint of a patient who has never been examined are routine. They expose the patient to avoidable radiation, incur unnecessary costs, and delay the true diagnosis with false reassurance. The patient is not examined because the attending doctor is uncomfortable with musculoskeletal assessment, and has reinforced this knowledge gap by avoiding the history and examination that are the basis of all clinical practice.

The problem emerges of a relatively well-paid workforce that lacks the experience and exposure to be able to assess the general wellbeing of the patient, is comfortable within a small range of disease, and relies on investigation instead of clinical acumen. The outcome is delayed diagnosis, yo-yo referrals to the wrong specialist, excessive investigation and a worse outcome at excessive cost to the service.

This is not a sudden response to the European Working Time Directive. Asher[1], in 1959, cited the case of a dull child with retinitis pigmentosa who was seen by an ophthalmologist. The latter suspected Lawrence-Moon-Biedl Syndrome (low intelligence, retinitis pigmentosa and polydactyly) and suggested referral to an orthopaedic surgeon to confirm the last of this triad by counting the fingers. Mayou[2] in 1994 noted the poor outcome of patients with non-cardiac chest pain who were dismissed to the care of their GPs by cardiologists. The GPs had already played their diagnostic hand so the patient was left in limbo with a diagnosis of 'not my patch, guv' from the long-awaited consultation. This was not just poor communication skills but inadequate general medical knowledge.

Calman (2007)[3] calls the general practitioner the 'new general physician'. The few who did long hours of emergency takes on rotations leading to MRCP and did so 20 years ago indeed fulfil that role. Sadly such doctors are the rare exception. More likely is the career GP who may have done a year of medicine on reduced rotas and simply has not had the exposure to make good the weaknesses of general skills in secondary care. For the general practice to be an effective gatekeeper, there must be prompt, accessible and informed support from secondary care. In my own city, GPs are virtually prevented from referring to orthopaedic surgeons and are obliged to channel patients with musculoskeletal disease to community physiotherapists with no ties to or support from secondary care.

Thus subacromial impingement is diagnosed as 'diffuse upper limb dysfunction'. Secondary adhesive capsulitis develops in response to the chronic pain. Pain radiates down the upper limb as the brachial plexus is stretched by trick scapulothoracic movements. Radiological investigations and nerve conduction studies are ordered with the attendant delay. They are not diagnostic so the patient is told that there is nothing wrong with them. The patient becomes miserable with the pain, loss of sleep and functional limitation, antidepressants are suggested, and this expensive and ineffective apology for clinical medicine becomes the accepted norm. The GP is discouraged from taking matters further by commissioning bodies and becomes resigned to the status quo. The patient's quality of life stays avoidably diminished and the service has paid out for management that was ever likely to fail because the clinical input was ineffective.

Potential Improvements

Selection of Medical Students

The definition of a good doctor is difficult but, no matter the academic brilliance, the first requirement is that the doctor turns up, empathises with the patient and is competent at clinical assessment. I have found no literature that explores this outcome measure except part-time work. Within 10 years of graduation, 9 % of males and 50 % of females work part-time. This increases by another 5 % in both genders by 15 years[4]. Academic ability at 18 years of age is an incomplete predictor of performance at medical school and the early postgraduate years, and certainly of output as a doctor. If half our graduates are working part-time after 10 years, there is a pressing need to identify those with the potential for full-time commitment.

The Undergraduate Curriculum

The whole process of training doctors needs to be revisited. Medical school manages to demotivate more of its students than it enthuses. This commences with the gratuitous detail of the anatomy course. Revisiting the anatomy texts reveals noble attempts to bring clinical relevance to the material, but they suffer from inadequate clinical input. Anatomy and the basic sciences may be taught by inspirational scientists capable of conveying the excitement of their subject. Sadly, they are generally the remit of the PhD in medical sciences, whose flame of original thought has long since been extinguished, so is relegated from the laboratory to the lecture theatre. Such personnel cannot design the material needed by nascent clinicians and the course needs to be redefined by practising clinicians in the appropriate speciality. Not a single well-known anatomy text covers the dynamic action of muscles on joints.

Clinical Course

The need to train generalists is compromised by the super-specialisation of hospital consultants. It is quite clear to the examiners of our orthopaedic undergraduates if they have been tutored by a knee surgeon. They are great on the knee but cannot examine a hip. The demise of the senior registrar has been highly destructive to the general training of specialists, the treatment of emergencies and the education of undergraduates. Such trainees had general skills and were adept at passing them to the next generation. The reintroduction of the grade should obviate the need for 'junior' consultants and turn out a much rounder clinician at consultant level. The 'firm' should be reestablished and the apprenticeship restored. Some 50 % of UK graduates feel unprepared for pre-registration house officer duties, and this is a potent reflection of the poverty of the current course[5]. My own students were required to be able to recognise a fractured triquetral radiographically before finals. They might have grimly recited the carpal bones with difficulty, but would not have recognised that an old lady who had fallen and was unable to bear weight had probably broken her hip unless it was shortened and externally rotated. This gratuitous detail just clutters the mind of our undergraduates.

A new realism is required in the undergraduate course, and each speciality should define a minimal curriculum of the critical conditions with which a doctor must be familiar to ensure patients do not come to avoidable harm for want of adequately trained medical staff.

Postgraduate Training

The essence of medicine is the general approach. A much more stringent training in the subject in general must be undertaken before developing a special interest.

The general skills needed to treat the sick and the idea that the profession is a way of life instead of a rather well-paid and secure job need to be restored. These are the qualities that inspire our students and trainees. If the profession is to meet the needs of the patients who will present to them in their hour of need, there needs to be a revision of its recruitment, training and ethos.

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One-stop Orthopaedic Clinic:

A Novel and Cost-effective Approach for Today's Austere NHS

Abstract

The one-stop clinic is a novel and effective way for diagnosing and treating patients with minor orthopaedic problems requiring intervention on the same day. This programme is meant to reduce the cost of using the hospital resources, in terms of the operating theatres, staffing costs and the time lost in waiting lists. We have provided this service in our orthopaedic department since January 2009. A total of 348 patients have been seen in the one-stop clinic on the day surgery unit, of which 251 patients underwent surgical intervention under local anaesthetic on the same day.

These included 65 carpal tunnel decompressions, 49 ganglion excisions, 68 needle fasciotomies for dupuytren contracture, 40 trigger finger releases, 27 excisions of nodules on fingers, and one ingrowing toenail treatment. Seven patients refused treatment, and six required further investigations. Nine patients refused to have treatment done on the same day. 18 patients did not attend clinic, and in 39 patients no intervention was required at the time of review.

Key words. One-stop clinic, minor procedures, waiting times, orthopaedic clinic.

Introduction

The one-stop clinic concept is new and novel. Each year in the NHS there are 37 million follow-up appointments[1] where the patient's progress is checked, they undergo further tests and they get test results. 75% of patients who fail to attend clinic are the follow-up patients. The follow-up did not attend (DNA) rate varies between specialities and locations but a range of 10-40% is common. There are more than four million follow-up DNAs per annum, which cost the NHS more than £100 million a year[1]. The concept of the one-stop model was introduced in the NHS to reduce inconvenience and anxiety to patients and reduce the wastage of valuable resources. One-stop clinic models have been successfully implemented in urology[2], pregnant mothers with substance misuse[3], menstrual disorders clinic[4] and breast cancer screening[5]. Very little is however published in orthopaedic literature about the one-stop model, to the best of our knowledge. The aim of our service was to provide high-quality care to patients and at the same time reduce waiting times and save valuable resources in our trust. As part of a single surgeon series we have tested this model, and present the effectiveness of the single-stop model in an austere National Health Service.

Methods

All GP referral letters were screened from January 2009 by the senior author (KS) and a surgical nurse practioner (NB). The referrals which were deemed suitable for treatment under local anaesthetic were sent an appointment letter explaining the possibility of offering treatment, in terms of surgical intervention, on the same day. The patients were seen on the day by a senior orthopaedic surgeon (KS) and an orthopaedic trainee (PSR). Patients who were fit and suitable were offered appropriate treatment. All patients who were deemed suitable were consented by KS or PSR on the day of the clinic. All procedures were carried out under local anaesthetic. Various surgical procedures were offered on the same day: carpal tunnel release, trigger finger release, moderate size ganglion excision, needle fasciotomy for Dupuytren contracture, DeQuervain's release, ingrowing toenail excision, finger/toe nodule/cyst/swelling excision etc.

Demographics and Methods

348 patients (200 female, 148 male) were seen in the one-stop clinic, and 251 patients opted for the surgery on the same day (140 female and 111 male). The average age was 53.7 years (range 33-75) (Table 1).

Demographics	Total number (n)
Total number in one-stop clinic	348
Total males attending one-stop clinic	148
Total females attending one-stop clinic	200
Patients provided one-stop surgery	251
Total males attending undergoing surgery in one-stop clinic	111
Total females attending undergoing surgery in one-stop clinic	140
Average age	53.7 years (range 33-75 yrs.)

Table 1: Demographics of patients attending and undergoing procedure

The procedures were carried out in a clean treatment room in the Day Case Surgery Unit. Cardiopulmonary monitors, life support equipment (ECG monitoring, oxygen saturation monitoring, BP monitoring) were available but were not needed in any patient. IV access was gained preoperatively by NB, KS or PSR as required. A senior staff nurse trained in advanced life support was present throughout the procedure, but no scrubbed assistant was needed in any of the cases. For carpal tunnel release, local anaesthetic of 1% lignocaine (5mls) with adrenaline was injected in the subcutaneous tissue and flexor retinaculum with a 22 gauge needle. The hand was prepared and draped with water-impervious upper limb sterile disposable drapes (Kimberley- Clark®, Roswell GA). No tourniquet was used. The operating surgeon KS/PSR scrubbed their hands with alcohol-based foam solution (Cutan Gel®) for two

minutes and were gloved but not gowned. Strict asepsis was maintained throughout the procedure. Skin closure using 4 '0' continuous nylon was performed in all cases as standard. Patients were observed for 30 minutes after the operation. All patients were seen in the outpatient clinic at 10 days and stitches were removed and wounds reviewed. They were again reviewed at 6/52, if necessary. All patients who underwent needle fasciotomy for the Dupuytren's contracture have been kept under review for a longer time as the recurrence after needle fasciotomy is common.

Results

Since January 2009 a total of 348 patients have been seen in the one-stop clinic of the day surgery unit. As per Tables 2 and 3, 251 patients underwent surgical intervention under local anaesthetic on the same day, made up of 65 carpal tunnel decompressions, 49 ganglion excisions, 68 needle fasciotomies for Dupuytren's contracture, 40 trigger finger releases, 27 excisions of nodules on fingers, one ingrowing toenail treatment. Seven patients refused treatment, and six required further investigation. Nine patients refused to have treatment done on the same day. 18 patients did not attend clinic and in 39 patients no intervention was required at the time of review. The patients who underwent carpal tunnel decompression, trigger finger release and ganglion excision were all completely satisfied with the concept of the one-stop clinic and the outcome (Figs 1, 2).

Demographics	No. of patients
Total number	348
One-stop surgery	251
Not required	39
DNA	18
Patient refusal	7
Cons. decision	18
Further investigations needed	9
Not suitable	6

Procedures	No. of Patients
Carpal tunnel decompression	65
Ganglion excision	49
Trigger finger/thumb release	40
Needle fasciotomy	68
Excision of nodule/swelling	27
Ingrowing toenail excision	1
Dequarvain's release	1

Table 3: Total procedures carried out and the total patient demographics

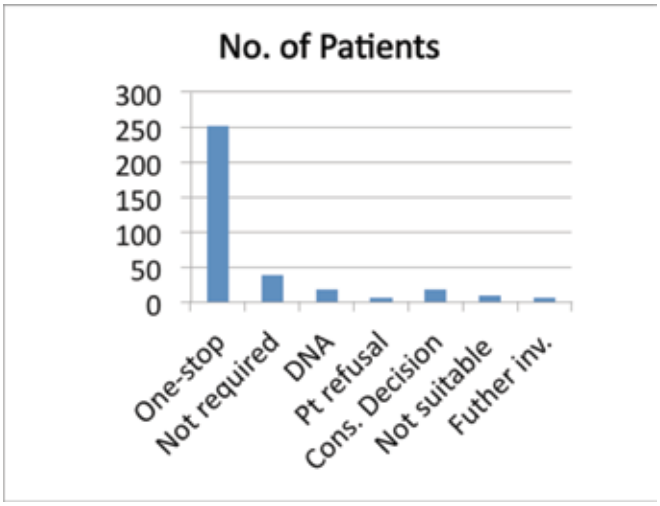

Fig 1: Histogram depicting breakdown of patient distribution in the one-stop clinic.

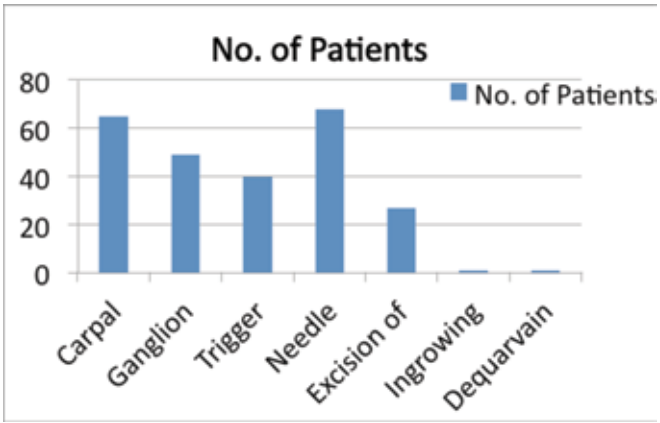

Fig 2: Histogram depicting individual procedures carried out on patients.

Complications:

One patient had a wound gaping after ganglion excision, which healed satisfactorily in two weeks after using steristrips on the wound. Two patients had scar tenderness following carpal tunnel decompression, which persisted for four months. Two patients had painful scars following ganglion excision on the dorsum of foot, which settled after padding the footwear. Two patients had superficial wound infection, one following ganglion excision and one following needle fasciotomy. Both settled with oral antibiotics. Out of 68 patients who underwent needle fasciotomy procedure, three patients had rapid recurrence within six months and required second definitive surgery, while the rest of the patients had useful lasting correction of the deformity to be able to perform their daily routine activities better and did not require further surgery at the last follow-up.

Discussion

The success of the one-stop clinic model in different surgical and non-surgical specialities prompted us to improve our orthopaedics services in ABM University health board. Under the guidance of the senior author, this programme was initiated as a cost-effective and safe model of clinical care from January 2009. One-stop clinics in any orthopaedic setting have been rarely reported in literature. A Cochrane Database of Systematic Reviews; Cochrane Central Register of Controlled Studies, performed by Arthritis Research UK in October 2009, revealed that there were no controlled trials, one systematic review, and 14 case studies in orthopaedics for any one-stop shoulder clinic[6]. Kersten *et al*. in 2007[7] highlighted the supportive and extended scope of physiotherapists undertaking assessment and treatments traditionally carried out by medical colleagues. It summarises that currently no firm conclusions regarding the effectiveness and safety of extended scope physiotherapists can be made. Alshryda *et al*.[8] in a retrospective review of 150 patients seen in one-stop shoulder clinics showed a reduction in hospital visits and waiting time to treatment, and improved accuracy of diagnosis compared to conventional care. A cost-benefit analysis against conventional care showed the one-stop clinic to be cost-effective. Miller *et al*. in 2008[9] reviewed 39 patients before, and 35 patients after, implementation of a one-stop protocol. They concluded that one-stop clinics resulted in a statistically significant reduction in time from GP referral to definitive management plan for patients and a reduction in the number of clinic appointments. Gwilym *et al*.[10] in 2005 compared the cost-effectiveness of 1022 new patients and 2848 follow-up patients from April 2003 to April

2004, and showed that >£420,000 was saved by their hospital. This was the first systematic study to evaluate the cost effect of the one-stop model as well as patient satisfaction. They had twice the follow-ups in their study, unfortunately making the one-stop clinic model not entirely one-stop in practice.

The cost per unit day case procedure in day case theatres performed in the NHS is around £650. This takes into account all the costs of setting up and staffing the theatre, nursing staff in the pre-operative and recovery areas and other establishment costs. The unaccounted costs are the pre-op work involved and waiting times for the patient. We performed 251 procedures on our patients, making a saving of >£160,000. The outcome of this prospective programme was not just saving valuable resources, but achieving patient satisfaction and safety. We had a total of seven patients with minor complications, making a 2.8% complication rate and 4.4% recurrence rate for Dupuytren's contracture at a six-month follow-up. This is much less as compared to the standard recurrence rate for Dupuytren's in a theatre setting[11,12] and better than Van Rijssen's study. Patient selection for needle fasciotomy for Dupuytren's contracture is very important. The procedure is considered particularly suitable for older patients who are unsuitable for more major surgery. It was also noted that Dupuytren's contracture tends to recur after all types of treatment, but that needle fasciotomy can be repeated. Recurrence rate is approximately 50% at 3-5 years[11,12] and seems to depend on the severity of the disease. Although the procedure was not as efficacious in the long term as open surgery, patients experienced less morbidity and had faster recovery. Carpal tunnel decompression and trigger figure release were the most successful, with complete resolution of symptoms at four months. Only two patients had superficial wound infections treated with antibiotics. And only one had wound gaping.

There are a few drawbacks to our study. This was a single surgeon prospective series. The pre-op scores, post-op DASH scores, and Canadian Satisfaction Scores (CSS) were tabulated only from August 2010, and patients were reviewed for full clinical evaluation by the orthopaedic trainee (PSR) only from Aug 2010. This makes it statistically difficult to measure the survival ship values and measure the changes in outcome scores.

Conclusion

One-stop models are cheap, cost-effective and safe in the hands of experienced surgeons. However the basics of patient safety and care should be secondary to none. It should not be performed by those in training or those who are less experienced. A thorough clinical review of the patient prior to the procedure by the operating surgeon is as vital as in every other operation. Our experience highlights the novel idea of the one-stop clinic which we have found very effective and valuable in saving useful resources in the present day austere NHS. The complication rate is minimal, and no significant complications were encountered. The patients are able to have their consultation and surgery in the same visit, and in most cases can be followed up by their GPs. This reduces the number of hospital visits, decreases the clinic numbers, and provides for better utilisation of scarce hospital resources. To make this model successful the whole process need to be carefully co-ordinated. GP letters need to be of good quality, enabling appropriate filtration of patients to the one-stop clinic; an experienced surgeon needs to be running the clinic; local anaesthetic surgery is preferable; and the GP surgery should be willing to see the patients for stitch removal.

This model has the potential of significant cost savings, and at the same time improving the service provided to the patients.

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Effective Management of Severe Vomiting in Pregnancy

Vomiting is a very common pregnancy-associated symptom, but happens with a wide range of severity. In its most severe form, vomiting of pregnancy causes dehydration, ketosis and severe weight loss, and this is termed hyperemesis gravidarum. If untreated, or badly treated, the condition can be fatal. Typically admissions are prolonged and repeated, even though highly effective therapy has been recognised for well over a decade.

Given that hyperemesis gravidarum occurs with a very wide range of degrees of severity, a definition of "severe hyperemesis" is required. Severe intractable vomiting which prevents eating and produces more than 5% weight loss in early pregnancy has been recommended as a practical definition[1]. This serves to emphasise an important aspect of the condition in that it prevents normal eating, and malnutrition of mother and potentially of baby may occur. Women fulfilling this definition require expert, effective treatment. However, the definition must not be applied rigidly. For instance, once a woman has suffered severe hyperemesis in one pregnancy, it is highly likely to occur with greater severity in a subsequent pregnancy, and the diagnostic criteria can be relaxed to allow earlier effective treatment.

Clinical diagnosis of hyperemesis itself should present no particular problems. Some textbooks incorrectly describe hyperemesis as a condition of continuous vomiting of onset in the first twenty weeks of pregnancy, but in practice there is a sudden onset of symptoms most often in the first six weeks, and always before eight weeks of gestation. Severe vomiting of later onset is highly likely to have a different cause. In approximately one-third of women there will be a family history of severe vomiting in pregnancy affecting first-degree family members. The history of weight loss will be confirmed by the presence of wasting, especially of leg muscles. Abdominal discomfort on examination is that expected from severe prolonged vomiting of any cause. Should a doctor unwisely request thyroid function tests in a sick, vomiting person he or she will find that they are likely to be abnormal – the "sick euthyroid syndrome". This still causes confusion, and non-endocrinologists often are not aware that thyroid function tests are unreliable during any acute illness.

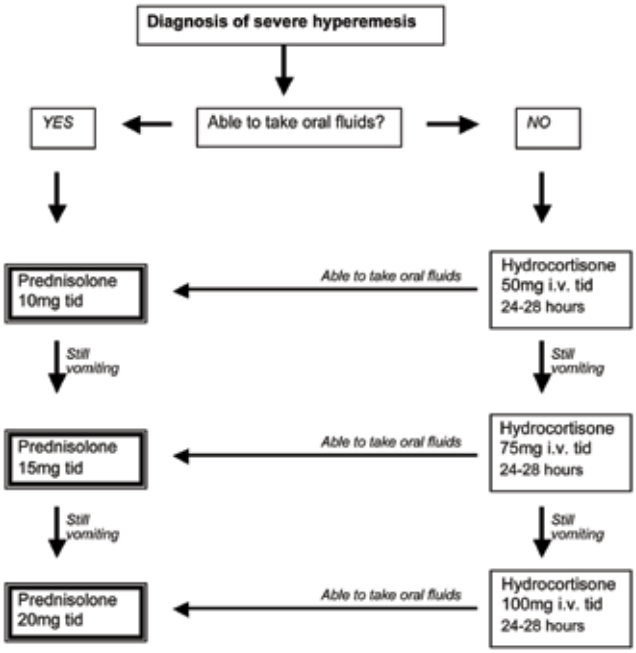
A close review of the symptoms is helpful as a background to diagnosis. Typically there is a very sudden onset of nausea between four and six weeks gestation, followed by vomiting which rapidly becomes intractable [2,3]. There is no diurnal pattern to the vomiting, quite unlike even troublesome morning sickness. Ptyalism is prominent in around half of all women. This apparent excess production of saliva relates to inhibition of the normal swallowing reflex, interrupting the usually subconscious swallowing of saliva. It is worth noting that the consistent spitting out of saliva elicits little sympathy from medical and nursing staff, who often label the behaviour as some form of pseudo-vomiting. The general lack of sympathy exhibited by healthcare staff not tuned into severe hyperemesis is in itself a helpful diagnostic feature. This relates in part to the erroneous description in standard textbooks of hyperemesis as being a "psychological condition reflecting rejection of pregnancy". Women who are overweight or obese before pregnancy are especially likely to have their malnutrition and weight loss disregarded, as they still have excess adiposity. The lack of sympathy from healthcare staff also reflects a lack of awareness of the wide range of severity of hyperemesis in pregnancy.

This lack of awareness of doctors, midwives and nurses of the existence of severe hyperemesis and the existence of effective therapy is reflected dramatically on patients' websites. Very graphic descriptions of lack of sympathy and even treatment by termination of pregnancy can be read on patients' blogs on the internet. The Hyperemesis Education and Research Foundation website is a good resource (www.helpher.org), although it suffers from the usual malady of patient- generated websites that all treatments ever suggested are listed, from copper bracelets through ginger biscuits to steroid therapy.

Therapy for hyperemesis should follow normal sound lines of clinical management. Dehydration requires to be managed with rapid intravenous rehydration. If vomiting has been preventing food intake for more than two weeks, then vitamin B1 (thiamine) replacement therapy is very important to avoid the possibility of Wernicke's encephalopathy. Thiamine, normally given in the UK as the intravenous preparation (Pabrinex) must be given before any carbohydrate is provided. However once (and only once) thiamine has been replaced, there is a major advantage in provision of calories as intravenous 10% dextrose, as each litre provides 400 kilocalories. This will allow suppression of ketone production. The repeated vomiting frequently causes significant heartburn, and this requires treatment with Ranitidine, initially intravenously and with oral follow-up. Antiemetics can be prescribed, although there is only a small chance of useful response. One of the most important components of therapy is rarely discussed: the symptoms of hyperemesis are markedly exacerbated by moving around, and also by smells of cooking. Bed-rest will temporarily assist with suppressing the symptoms of hyperemesis. In many women, a single admission with rehydration will suffice to control their condition. The observation that vomiting recurs after discharge home is often interpreted as indicating some psychological problem at home rather than a normal reaction to resuming activities. However, if more than 5% weight

loss has already occurred in comparison with reported pre-pregnancy weight, or if there have been previous similar admissions, then definitive therapy must be considered.

For women in this defined group of severe hyperemesis, therapy with prednisolone will be effective in all cases, if necessary preceded by intravenous hydrocortisone. A full algorithm for therapy has been published[3] and this is reproduced as Figure 1. The usual starting dose would



Newcastle guideline for management of steroid dose in severe hyperemesis[3]

be hydrocortisone 50mg TID if intravenous therapy is required. This would be continued until eating was able to be resumed, whereafter treatment with prednisolone of 20mg TID can be commenced. Approximately one in five women will require a higher dose of steroid, and stepwise increases to hydrocortisone 75mg then 100mg TID, or prednisolone 15mg or 20mg TID are necessary at approximately 48-hour intervals. Care must be taken to achieve complete control of the hyperemesis prior to discharge, otherwise the journey home in the car is likely to precipitate recurrence of symptoms as discussed above. Subsequent prednisolone dosage depends upon the individual response, but in general the initial suppressive dose which is successful should be continued for two weeks, followed by a decrease of approximately 5mg per week with the proviso that if severe vomiting recurs the dose should be increased. Awareness of the natural history of hyperemesis is important. In 80% of women the hyperemesis will persist until 18-22 weeks (known as remitting hyperemesis) and during this time it has been observed that average daily prednisolone requirements are 15mg per day. When the disease has run its course, the individual woman is never in doubt that the feeling of continuous nausea has lifted, and that steroid therapy can be rapidly tailed off and stopped. Unfortunately this self-limiting form of hyperemesis is not universal, and around 20% of women have full-term hyperemesis – which remits with dramatic suddenness as soon as the placenta is delivered.

The decision to commence prednisolone therapy requires careful discussion with the individual patient. The critical point is that steroid therapy has been used for severe asthma and inflammatory bowel disease in pregnancy for over sixty years and many studies have identified no evidence of harmful effect upon the foetus [4-6]. The transplacental passage of prednisolone is only around 10%[7]. On the other hand, untreated severe hyperemesis is likely to bring about a baby smaller than expected for dates, and malnutrition during pregnancy is not without consequences. Unfortunately potentially misleading information about steroid use and cleft lip or cleft palate is in circulation, relating to use of steroids any time from before pregnancy to late pregnancy[8]. One of the largest studies has found no association at all (Czeizel 1997). Another reported an increase in risk so small for the relevant period of exposure that it would not materially affect an individual decision (from

1.0 in 400 to 1.3 in 400)[9]. As an association has been demonstrated between any stressful event in pregnancy and cleft lip or palate by the same authors, it must be considered that the stress of any underlying illness for which steroid may be recommended might have more effect than treatment[10]. Given that the palate fuses before eight weeks gestation, this extremely small and possibly absent risk has to be put into perspective for each individual. Successful control of hyperemesis using prednisolone allows the achievement of absolutely normal growth for baby, and this is a major aim of the steroid therapy – to restore normal foetal nutrition[1].

The potential side-effects of steroids on the mother are identical to those seen out of pregnancy, with the exception of precipitation of diabetes. No steroid-associated diabetes has been observed in our Centre over nearly twenty years, and approximately 200 steroid-treated women with hyperemesis. This is likely to relate to two important features. Firstly, the individual has experienced a period of starvation and weight loss, and liver fat levels will have been sharply decreased removing the main underlying factor permitting emergence of diabetes[11]. Secondly, hyperemesis is seen and managed considerably before the onset of pregnancy-associated glucose intolerance (24 weeks onwards). Around 20% of women will experience a recurrence of their teenage acne, and this will persist for a month or two after the steroid therapy is withdrawn. If steroid therapy is required throughout pregnancy, there is a possibility that bone density may be reduced. The skeleton is in a state of major calcium flux by the end of pregnancy and the clinical effect of steroid therapy is not clear. However, bone scans carried out around three months after pregnancy in our Centre have not revealed any consistent tendency to persistent low bone mineral density. All of these factors should be explained to the individual woman so that she can make a well-informed decision on whether or not to accept steroid therapy. For most women with severe hyperemesis, the likelihood of complete control of symptoms and prevention of the disruption and upset of future hospital admissions is a major factor in determining acceptance.

The recent illness of Kate Middleton has drawn media attention to this poorly-understood, debilitating condition. If managed properly, with provision of sound advice and multifaceted therapy as described above, the health of mother and baby can be dramatically improved. From the perspective of the cash-strapped NHS, many bed days of unnecessary admissions are avoided. All physicians should be aware of this important therapeutic possibility.

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HbA1c: Clinical Utility and Limitations in the Diagnosis of Diabetes Mellitus

In the UK the increasing incidence of diabetes mellitus brings ever greater demands for simple yet reliable diagnosis. The chronic hyperglycaemia associated with diabetes leads to long-term complications particularly involving the eyes, heart, kidneys, nerves and blood vessels, therefore early diagnosis will help to prevent such phenomena. For many years, the most widely-accepted diagnostic tests have relied on the measurement of blood glucose, either using fasting plasma glucose (FPG) or the oral glucose tolerance test (OGTT).[1] Recently, however, glycated haemoglobin (HbA_{1c}) has been endorsed for the purpose of diagnosis, and its use is becoming increasingly prevalent.

HbA_{1c} was introduced into clinical practice in the 1980s as a means of objectively measuring glycaemic control in diabetic patients. In subsequent years, improvements in the standardisation of the HbA_{1c} measurement and greater availability of the assay have allowed clinicians also to implement the use of this test for diagnosis.[2] This use was first proposed by the American Diabetes Association in 2009.[3] In 2011, the World Health Organization (WHO) recommended the use of HbA_{1c} as an acceptable alternative to blood glucose tests[4] and this was recently endorsed in the UK.[5]

WHO recommends a HbA_{1c} cut-off point of 48 mmol / mol (6.5%) for diagnosing diabetes. Patients with a value between 42 and 47 mmol/mol should be considered to be at high risk for progression to diabetes.[5] It is recommended that high-risk patients receive annual testing and informative lifestyle guidance as a preventative measure.

Epidemiological data[6] demonstrates that HbA_{1c} is as effective as glucose in diagnosing diabetes (i.e. increased risk of microvascular disease). The two tests will, however, identify slightly different sets of individuals within a given population. It is therefore stressed that diagnosis must be based on either HbA_{1c} or glucose, but not a combination of the two.

Practical Benefits of Using HbA^{1c} for Diagnosis

HbA_{1c} reflects average plasma glucose levels in the past 8-12 weeks, thus providing information about long-term glycaemic status.[7] This is the logical basis for its use in diagnosis of diabetes mellitus, a disorder that is characterised in terms of increased risk of the microvascular complications of hyperglycaemia. HbA_{1c} therefore has the fundamental advantage of presenting a complete picture of glycaemic status, as opposed to the 'snapshots' provided by measurement of FPG and in the OGTT. It is much less influenced by non-specific factors (e.g. exercise, diet, stress and acute illness) that contribute to day-to-day variation in blood glucose. Borderline results (42-47 mmol / mol) alerts clinicians to chronic borderline hyperglycaemia, which may progress to frank diabetes mellitus if the underlying risk factors (largely influenced by lifestyle) are not addressed.

Diagnostic testing for diabetes using HbA_{1c} has the significant advantage over FPG that it can be performed at any time of the day, and is not reliant on the patient truly undergoing at least eight hours of fasting prior to measurement. Furthermore, there is no need to follow up borderline results with an OGTT, hence improving patient convenience and reducing overall cost of diagnosis. Apart from the need to repeat the test to confirm the diagnosis, the single HbA_{1c} test result contains complete information about glycaemic status.

Another practical advantage over FPG and the OGTT is the high pre-analytical stability of HbA_{1c}. In whole blood, HbA_{1c} is stable for one week at 4°C and for at least one year at -70°C.[8] Even in samples taken into tubes containing fluoride preservative, there is a significant fall in plasma glucose concentration in the first two hours. HbA_{1c} also demonstrates much lower within-individual biological variability than do the blood glucose tests.[9] The two-hour OGTT blood glucose has particularly high biological variation at 16.7%. As a result, there is much greater consistency in HbA_{1c} measurement in an individual patient on repeat testing.

These practical advantages of HbA_{1c} favour its use over FPG and the OGTT. Nevertheless, there are important limitations and exceptions to its use that clinicians need to be aware of.

Limitations to the Diagnostic Use of HbA_{1c}

HbA_{1c} concentration reflects mean blood glucose during the lifespan of the erythrocyte. HbA_{1c} testing must therefore not be used in the presence of factors affecting either the synthesis of haemoglobin or the lifespan of the formation. Conditions such as haemolytic anaemia shorten the erythrocyte lifespan, hence lowering the HbA_{1c} concentration. On the other hand, HbA_{1c} values will be higher if erythrocyte survival is prolonged, such as in iron-deficient anaemia. Therefore, HbA_{1c} testing should be avoided in these patients. A reliable HbA_{1c} value can be restored following iron supplementation in cases of iron deficiency, but although this may enable its use in monitoring it is unlikely to be an effective strategy in the diagnostic context.

Another concern relates to the haemoglobinopathies. HbA_{1c} is defined as haemoglobin that is glycated at the N-terminal valine of the β-chain of HbA_0. The presence of abnormal haemoglobin variants such as HbS or HbC may interfere with measurement in some assays.[10] Most modern assays are however unaffected by the common variants, or at least have the ability to detect and flag up their presence, thus alerting the clinician to their presence. There remains, however, the problem that some haemoglobinopathies (especially HbSS, HbAS and HbSC) result in reduced erythrocyte lifespan, so HbA_{1c} may be falsely low in relation to mean blood glucose, even if it can reliably be measured.

Other conditions in which HbA_{1c} for diagnosis is contraindicated include: all children and young people, pregnancy, suspected type 1 diabetes, short-duration diabetes symptoms, acutely ill patients, patients recently started on medication that may cause a rapid rise in glucose, patients with acute pancreatic damage, patients with renal failure, and patients with human immunodeficiency virus (HIV) infection.[4] These factors lead to sudden changes in glucose values, such that the HbA_{1c} value will not fully reflect current glycaemic status.

Conclusion

HbA_{1c} is likely to assume a major role as a diagnostic marker for diabetes in the future. It has many advantages over glucose. Diabetes may be diagnosed using either HbA_{1c} or glucose, but not by a combination of the two. It is vitally important, however, that clinicians are aware of the specific situations in which HbA_{1c} cannot be used for diagnosis, and the other limitations on its use.

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Recurrent Idiopathic Spontaneous Coronary Artery Dissection: A Case Report and a Review

1. Introduction:

Spontaneous coronary artery dissection (SCAD) is a rare cause of acute coronary syndrome (ACS).[7] Traditionally, SCAD has been observed in two groups: those with coronary atherosclerosis and women in the peripartum period.[1, 9, 14] Other less common associations were prescribed, such as vigorous exercise, vasoactive drug use, inflammatory conditions, and connective tissue diseases.[16-19, 27] SCAD is considered idiopathic when all of the previously described associations are excluded.[6] We report a case of recurrent idiopathic SCAD, and propose a systematic approach for identifying the etiology behind SCAD.

2. Case:

A 52-year-old woman presented to the emergency department (ED) with unstable angina. The electrocardiogram (ECG) was unremarkable and Troponin I was mildly elevated at 0.477ng/mL. The patient had no significant risk factors for coronary artery disease (CAD), was not on hormone replacement therapy and was under no physical dynamic stress. Coronary angiography revealed a spontaneous dissection of the right posterior descending artery (PDA) (Image 1). The lesion was deemed unsuitable for intervention due to its small lumen size. For the same reason intravascular ultrasound (IVUS) was not performed. The patient was subsequently discharged and treated medically with aspirin, clopidogrel, beta-blocker and simvastatin.

Image 1. Spontaneous coronary artery dissection of right posterior descending artery.

Two-and-a-half months following the inciting event, the patient again presented to the ED with unstable angina. ECG showed ischemic ST-T wave changes (Figure1) with elevated CPK of 203U/L, CK-MB 16.6ng/mL and Troponin I of 6.210ng/mL. A repeat coronary angiography showed complete resolution of the previous PDA dissection (Image 2), however a new spontaneous dissection in the second diagonal branch of the LAD (Image 3), not previously present on angiogram (Image 4), was noted. Again, secondary to the small lumen size, medical management was determined to be the best form of treatment.

Figure 1

Image 2. Complete healing of the previous spontaneous coronary artery dissection of right posterior descending artery.

Image 3. New spontaneous coronary artery dissection of the second diagonal branch of the left anterior descending artery.

Image 4. Absence of coronary artery dissection of the second diagonal branch of the left anterior descending artery in first angiography.

In an attempt to reveal the etiology of this patient's recurrent SCADs a comprehensive work-up was done, including: proteinase 3 antibody test, myeloperoxidase antibody test, antinuclear antibody titers, erythrocyte sedimentation rate, C-reactive protein, C3 and C4 complement levels. The findings of these tests were within normal limits. Lipid panel revealed no significant dyslipidemia. Genetic testing for hereditary connective tissue disorders was not conducted because no aortic root dilation was noted on echocardiogram. Urine analysis was negative for toxicology. Following this work-up and patient history, a diagnosis of recurrent idiopathic spontaneous coronary artery dissection (SCAD) was made.

3. Discussion:

3.1. Pathology:

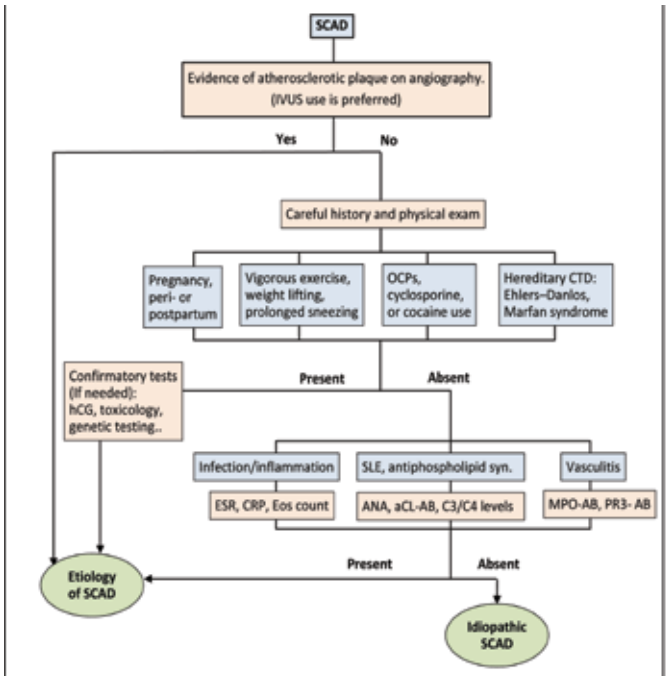
By definition, SCAD is coronary artery dissection that does not extend from the aortic root and is not caused by cardiac surgery, trauma, coronary angiography or percutaneous intervention.[1] SCAD is described much like aortic dissection, with a disruption to the vascular endothelium causing accumulation of blood or thrombus that leads to the formation of a false lumen.[2] The false lumen can compress the true lumen and create an ischemic event that is detrimental to the myocardium distal to the lesion.[3] The hematoma or thrombus can be due to an intimal tear or a medial dissection leading to bleeding from the vasa vasorum causing a hematoma with no associated intimal tear; the latter is generally more common.[4, 5, 6]

3.2. Epidemiology and Etiology:

SCAD has an incidence of 0.1 to 1.1 % on angiography, but most cases go undiscovered until post mortem assessment, or are asymptomatic and go undiagnosed.[9-12] In cases of SCAD the left anterior descending artery (LAD) is the more commonly involved, in about 80 % of cases.[3, 8] The right coronary artery (RCA) is implicated more commonly in men and the LAD in women.[13] SCAD has a predilection for younger females in the peri- and postpartum periods, but is still a rare cause of acute myocardial infarction, affecting only 1 in 100,000 pregnancies.[14] In SCAD cases with underlying CAD, ruptured plaque was found in the majority.[9] It has also been associated with instances of increased shear stress such as intense exercise, hereditary connective tissue disorders (Marfan's Syndrome), inflammatory disorders including vasculitis, and vasoactive drugs like cocaine, cyclosporine and ergotamine.[27]

The pathophysiology of SCAD has not been fully understood, but it has been found that changes in the vascular architecture in conjunction with increased shear forces can lead to the lesion. In the gravid or postpartum patient, hormonal fluctuations affect collagen, smooth muscle cells and proteoglycan matrix production.[14, 15] These changes weaken the vessel wall, increasing the likelihood of SCAD. This phenomenon has occurred with the use of oral contraceptives and menstruation, supporting the idea that hormonal involvement is associated with the pathophysiology.[16, 17, 18] Inflammatory causes have also been proposed based on eosinophilic involvement in up to 43 % of SCAD cases.[19] Eosinophils contain cytotoxic enzymes, released by degranulation, that may damage the vasculature. Their presence may also merely represent an inflammatory reaction to vascular damage already present.

A systematic approach to identifying the etiology of SCAD is lacking. Based on previous SCAD reports and its common etiologies, we propose a work-up algorithm to identify the cause of SCAD (Figure 2).



Algorithm for working-up etiology of spontaneous coronary artery dissection.

SCAD = spontaneous coronary artery dissection; IVUS = intravascular ultrasound; OCPs = Oral contraceptives pill; CTD = Connective tissue disorder; hCG = human chorionic gonadotrophin; SLE = Systemic lupus erythematosus; ESR = erythrocyte sedimentation rate; CRP = C-reactive protein; Eos = eosinophils; ANA = antinuclear antibody; aCL-AB = anticardiolipin antibody; MPO-AB = myeloperoxidase antibody; PR3-AB = Proteinase 3 antibody.

Figure 2

3.3. Clinical Presentation and Diagnosis:
SCAD can present as ACS or sudden cardiac death (SCD).[7] Diagnosis has thus far depended on coronary angiography or autopsy. Angiography may depict a double radiopaque lumen and a radiolucent intimal flap or trapping of contrast in the false lumen with slow clearance.[20] The aforementioned presentation will only occur when an intimal tear is the cause of the dissection, but as previously discussed this may not be the most likely pathology. A hematoma between the media and adventitia may easily be missed on angiography or be misdiagnosed as atherosclerotic stenosis. In such cases intravascular ultrasound (IVUS) can provide a superior diagnostic tool,[4] and can also reveal angiographically "missed" ruptured plaque causing the dissection.[9] However, the availability of this technology and the small lumen of the artery are frequent challenges for its routine use.[4,9] Contrast tomography (CT) angiography has also been shown to have a role in SCAD diagnosis. CT angiography is a non-invasive method that can accurately image the intimal flap or intramural hematoma and can be an alternative to coronary angiography when following the progression of SCAD in a medically managed patient.[21-23]

3.4. Management:
Many of the treatment modalities have been derived from case reports. The mainstay of treatment includes medical management, percutaneous intervention and surgical revascularisation. The treatment of choice is dependent on the presentation, location and extent of the dissection. Medical management includes antiplatelet therapy, beta-blockers, and heparin or enoxaparin, and has been shown to be successful, allowing for spontaneous healing of the dissection.[24] Antiplatelet agents may reduce the contents within the false lumen and decrease compression.[25] Beta-blockers reduce stress on the vessels by decreasing force, and it has been theorised that they can accomplish the same effect on coronary vessels.[27] Anticoagulation therapy has been debated due to some evidence that it may cause the dissection to propagate by increasing hemorrhage into the dissection.[27] Conservative follow-up is recommended to monitor the progression of the lesion. Some patients, like ours, have shown complete resolution; others have experienced recurrence and acute deterioration and propagation.

Percutaneous coronary intervention (PCI) has shown mixed outcomes. It has been recommended that if the dissection does not lead to compression of the true lumen, stenting should be avoided and medical management considered.[27] PCI can cause extension of the false lumen and dissection by contrast and guide wire.[27] Nevertheless, stent placement should strengthen the vessel wall and successfully seal the dissection.
Percutaneous dilation without stent deployment should be avoided in the treatment of SCAD because it has a higher likelihood of extending the dissection.[8] Petronio *et al*.[26] described an approach that deploys the stent only at the proximal edge of the dissection to resolve the acute ischemia, which may reduce the incidence of dissection progression and the need for extensive stenting.

A total occlusion of the lumen may call for surgical revascularisation to a viable distal target. Other instances that lead to surgical intervention include: SCAD presenting with severe ischemia, cardiogenic shock, three-vessel involvement, left main dissection, or patients who do not respond to alternate forms of management.[13, 5, 8]

Due to the variability in presentation of SCAD, a "one size fits all" treatment option does not exist. No treatment is currently considered superior, and management approach should be individually tailored. Careful consideration of the location, extent, severity, and stability of the lesion should be undertaken.

4. Conclusion:
Little is known about SCAD, due to its low incidence and "devious" presentation. It mainly occurs in patients with CAD, peri- and postpartum young females and less frequently with other conditions that may increase shear stress on arterial wall, or affect its architecture. Medical management is typically the default as PCI and surgical revascularisation have their limitations. Our proposed systemic approach should help the clinician in identifying the etiology of SCAD, which in some rare instances may not be revealed. The idiopathic SCAD case that we reported is one example. Therefore, more research is needed to further investigate the mechanism by which SCAD occurs so as to tailor future therapies. As it was once said: "If you know your enemies you will not be imperiled in a hundred battles, but if you do not know your enemies you will win one and lose one."[28]

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'Air Bronchogram' - An Important Radiological Sign

Introduction

Chest radiographs are the most commonly-requested radiological examination. Whether you are reviewing a chest film in the clinic or on a ward round, or regularly receive reports of chest X-rays from radiologists, the chances are that you would have come across the term 'air bronchogram'. It is one of the cornerstones of interpretation of chest films.

This quick review explains the pathophysiology and causes of this radiological sign.

Target Readers

This review would be useful for medical students, foundation and specialist trainees from almost all medical and surgical specialities. General practitioners and community physicians would also find this information useful.

Pathophysiology of Air Bronchogram

On the X-ray film, normal lung fields are radiolucent (black) and therefore, the air-containing bronchi are not seen separately. In cases of consolidation, the air in the alveoli is replaced by either fluid or cells and therefore, alveolar spaces appear opaque (white). Against the background of opacified (white) alveoli, the bronchi then stand out as darker branching tubular structures.

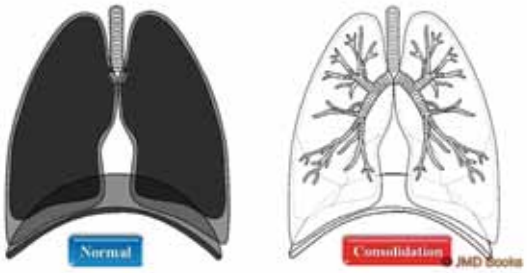

Figure 1: Air bronchogram occurs when air in the alveoli is replaced by fluid or cells and the air-containing darker branching bronchi are seen passing through the consolidation in the lung (Reproduced with permission from: Basics of Chest Radiology, ASIN: B005CYWM7S).

Common Causes of air bronchogram [Ref 1]:

- Consolidation
- Pulmonary oedema
- Hyaline membrane disease in children
- Acute respiratory distress syndrome (ARDS)
- Sarcoidosis
- Alveolar proteinosis
- Passive collapse/non-obstructive atelectasis
- Malignancies such as bronchoalveolar carcinoma and lymphoma
- Severe interstitial disease
- Pulmonary infarction
- Pulmonary haemorrhage

This important radiological sign was first described on conventional chest X-rays by the late Dr Benjamin Felson, Professor Emeritus and one of the most famous American chest radiologists. Air bronchogram is also seen on CT scans. This sign indicates patent bronchi. If this appearance persists for more than 6-8 weeks despite appropriate antimicrobial therapy, then a neoplasm should be excluded.

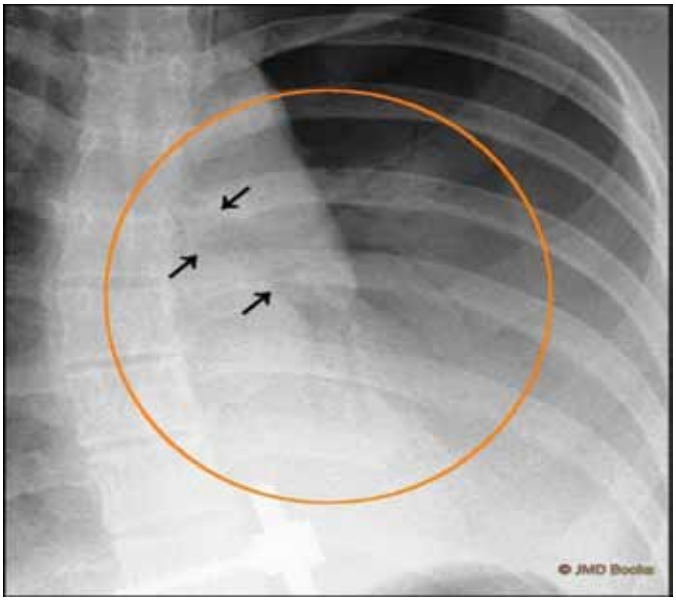

Figure 2: Close-up of air bronchogram in a case of left lower lobe consolidation.

Figure 2: Air bronchogram on a CT scan in a case of ARDS.

Take Home Message

- Air bronchogram is a classic sign of consolidation. Clinicians should be familiar with common causes, which include benign and malignant disorders.
- It is also one of the commonest radiological signs shown in the exam.

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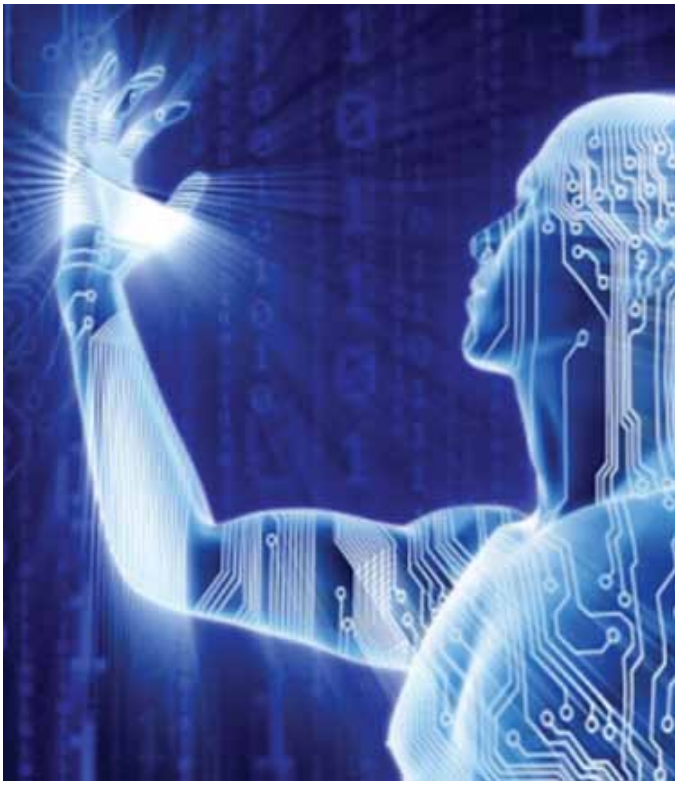

Acanthamoeba Keratitis: A Contact-lens-associated Infection

There has been recent news coverage of Acanthamoeba Keratitis, a sight-threatening protozoal infection associated with contact lens wear. Consequently, contact lens manufacturers and those making contact lens care products have been implicated in the increasing incidence of the condition in recent years. This short article aims to give an overview of the condition, how it can be managed and how it differs from other contact-lens-associated conditions.

What is *Acanthamoeba?*

Acanthamoeba is a ubiquitous free-living amoeba found in soil, air and water. It has a life cycle consisting of a trophozoite (active, replicating) phase and cyst (dormant) phase. During the cyst phase it can survive adverse environments with varying pH, temperatures and osmolarities[1,2].

Several *Acanthamoeba* species are pathogenic; the most common are *A. castellanii* and *A. polyphaga*, though colonisation with the amoebae does not necessarily lead to disease, as 80% of the normal human population have antibodies to *Acanthamoeba*[2].

It can cause a devastating corneal infection (*Acanthamoeba* Keratitis, AK) in immunocompetent patients, with 85-88% of cases occurring in contact lens wearers. The incidence of AK among contact lens wearers is around 17-19 cases per million in the United Kingdom[3].

Immunocompromised patients are at risk of developing granulomatous amoebic encephalitis, cutaneous lesions, pulmonary and renal disease[2].

Why Are Contact Lens Wearers at Risk of Developing Corneal Infection?

There are many reasons why contact lens wearers (CLW) are at risk of developing a microbial keratitis (MK); some are related to the physical and physiological changes to the cornea that occur with contact lens wear, while others are related to contact lens material and care products, in addition to which there is an association with the quality of lens care and hygiene[4,5].

Microbial invasion into the corneal stroma is achieved through changes in the tear film when lenses are worn and by damage to the glycocalyx of the corneal epithelium in the post lens environment (the area between lens and the anterior surface of the cornea). These can occur by direct trauma caused by the lenses or through changes in the binding and transport proteins in the cornea[5].

There has been some conflicting research into how contact lens material can affect infection rates with those using Silicone Hydrogel lenses and re-usable soft contact lenses showing higher rates of vision loss following MK[4, 11].

Other areas of research include the possibility of multipurpose contact solutions having poor amoebicidal activity[7, 8]. A recent outbreak in America and Singapore led to the withdrawal of one multipurpose solution from the market[9, 10].

Prolonged contact lens wear and poor lens hygiene (washing lenses in tap water, swimming in contact lenses, not replacing lens cases or cleaning solutions frequently etc.) have been associated with higher rates of microbial keratitis and often have the worst clinical outcomes[3, 4, 6].

Clinical Presentation

Symptoms

If the diagnosis of AK is made within one month of the onset of symptoms, this is referred to as early disease. Misdiagnosis or delayed presentation can lead to more advanced clinical findings and poorer prognosis[3, 12].

Most patients present with unilateral pain, photophobia and tearing; bilateral disease is more common in CLW [15]. Other symptoms include blurred vision, red eye and itchy eye. The pain is usually severe and classically described as disproportionate to the findings on slit lamp examination [14].

Clinical Features of *Acanthamoeba* Keratitis

- Most cases occur in contact lens wearers
- Symptoms include red eye, tearing, itching and pain disproportionate to clinical findings
- Examination findings include epithelial defects, perineural infiltrates, limbitis

Risk factors for developing AK in non-contact-lens wearers include trauma or exposure to water or soil, which can occur with those employed in agriculture and exposure to contaminated tank-fed water[16].

Signs

Early features of AK on slit lamp examination are[3, 12-14]:

- Punctate Keratitis
- Corneal epithelial loss
- Limbitis
- Perineural infiltrates - this is a pathognomonic feature of AK, which may represent the Acanthamoeba trophozoites clustering around the nerves (Image A)
- Pseudodendrites

Image A. Fluorescein staining demonstrating ring abscess in the corneal stroma

Severe findings in late disease [3, 12-14]:

- Abscess formation (Image B)
- Pus in anterior chamber (hypopyon)
- Corneal melt and perforation
- Cataract
- Glaucoma
- Posterior segment inflammation

Image B. Perineural infiltrates are pathognomic of Acanthamoeba Keratitis

Some of these findings in severe, prolonged AK are due to the topical treatments used for the condition, or due to a more general inflammatory response to the infection[16]. Spread of the infection beyond the cornea is extremely rare and has only been reported in a handful of cases[3, 17].

Management

Investigations

A diagnosis of AK can be made based on clinical features alone; however a definitive diagnosis requires at least one sample that is *Acanthamoeba*-positive on histology, culture or identification by DNA polymerase chain reaction[3, 16].

First-line investigations are corneal scrape biopsies and cultures, lens cultures and lens case cultures. Confocal microscopy is an optical imaging technique used in vivo that can aid in the diagnosis of AK but is only available in some centres[18].

Treatment

The aim of treatment is to eradicate viable cysts and trophozoites and to dampen the inflammatory processes. The mainstays of treatment are topical agents such as polyhexamethylene biguanide (PHMB) and chlorhexidine; these are biguanide agents. Biguanides can be used alone or in combination with other drops like propamidine and hexamidine.

Initially, topical treatments are administered every hour (day and night) for 48 hours, which may require a hospital admission. Thereafter the treatment is weaned slowly over the course of months; average treatment course is six months in the UK. Treatment continues until there are no further clinical signs of *Acanthamoeba* infection. The treatment is often prolonged due to the ability of *Acanthamoeba* to become encysted and therefore more resistant to the medications[19, 20].

If persistent inflammation is present on examination, then topical corticosteroids are indicated and sometimes systemic antifungals and steroids are used for the treatment of the extracorneal complications of AK[21, 22].

Patients are reviewed frequently in the outpatient setting to ensure improvement in treatment and will require dose adjustments accordingly.

In some persistent cases surgical treatment may be indicated. This can range from epithelial debridement to corneal graft surgery, and even enucleation in the most severe cases[23].

Given the potential devastating consequences of AK, there is a growing body of research on why the incidence of the infection is increasing and whether it is purely related to increasing contact lens use. Nonetheless it is important that cases are identified and treated promptly in order to optimise prognosis and reduce complication rates.

Summary

- *Acanthamoeba* Keratitis is a sight-threatening infection of the eye
- Contact lens wearers with poor lens hygiene are at greatest risk of developing the condition
- Persistent contact-lens-associated infections require urgent review by ophthalmologists
- It requires intensive topical treatment with frequent, prolonged follow-up
- Prognosis improves with early diagnosis and treatment

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Do Your Finances Need a Health Check?

Many doctors and dentists find it challenging to keep their finances in order. In an exclusive article for The Physician, ClearSky Accounting offers advice on ensuring your finances receive a clean bill of health.

MORE than ever, physicians are under pressure to maximise the amount of time spent treating patients. Healthcare practitioners across Britain are attempting to balance providing a vital public service with managing teams of support staff and performing other administrative tasks. Throw the latest government-led reorganisation of healthcare services into the equation, and managing a day-to-day routine has become even more complex. Ask any physician what is top of their wish list, and the answer will invariably come back: more time.

In this busy environment, it's perhaps unsurprising that many medical professionals struggle to find the time to keep on top of their own finances. Bookkeeping and tax returns play second fiddle to patient appointments – and understandably so. Unfortunately, it's a fact of life that for the physician of 2012, there simply aren't enough hours in the day. Paperwork tends to be one of those jobs that is forever being put off until tomorrow, with the inevitable result that it never gets done.

That's where your accountant comes in. Or at least that's where they should come in. Whether you're a consultant, locum, dental practitioner, or run your own practice, an effective accountant will ensure you operate compliantly and tax-efficiently, providing the support you need to optimise your finances. Your accountant's raison d'etre should be to take the hassle out of handling your financial affairs, making your life as easy as possible and leaving you free to concentrate on delivering first-class patient care. After all, that's the reason you entered the profession.

Too many accountants, however, fail to offer the proactive advice that is crucial to protecting your financial interests. Some lack specialist knowledge and experience of the healthcare sector. Others don't offer the accessibility and flexibility that your busy schedule requires. The truth is that the accountancy sector has moved on in leaps and bounds in recent years, in terms of both service levels and technology. Physicians, who are naturally focused on their core duties, may well be unaware of these advancements. Taking the time to gain an understanding of the various options on offer could ultimately result in more money in your bank account and more time spent treating patients.

Choosing an Accountant

- **Accessibility**
  Professionals working in medicine and dentistry are among the busiest people in the country. Many juggle routine NHS commitments with private work, and all are pressed for time. The vast majority are unable to take time out of their working day to go through their books. A good accountancy firm will understand this and amend its opening hours accordingly, making its practitioners available on evenings and weekends. Just as patients want access to out-of-hours services and the option of home visits, dentists and doctors are increasingly demanding this of their accountant.

- **Specialist Experience**
  As a medical professional, you have unique tax and accounting needs. Lots of accountancy firms will claim to be able to become familiar with your needs, but not all of them will have direct experience in what is a niche and highly complex sector. Before enlisting the services of an accountant, ask for examples of other doctors and/or dentists they have worked with.

- **Online Facilities**
  Online portals that enable medical professionals to upload accounting information when it suits them, and complete all their monthly admin quickly and painlessly, are growing in popularity. Such systems mean those working in medicine and dentistry can update their accounts before work, between appointments, or from the comfort of their home on evenings and weekends. Those with a smartphone or tablet can access such portals while out and about.

- **The Human Touch**
  Online portals are all well and good, but you need to be able to build a rapport with your accountant if you're going to rely on them as a trusted advisor. Forward-thinking firms will give you access to a dedicated, qualified personal accountant so you'll always be in regular contact with someone who has a complete understanding of your situation, and is ready to go the extra mile. You can't afford to waste time on the phone to an anonymous call centre, so don't put up with it.

- **Transparency**
  Some accountancy firms will surprise you with hidden costs. Be clear on how you will be charged and make sure that when you seek alternative quotes, you're comparing apples with apples. Some of the fastest-growing accountancy firms offer fixed monthly fees and don't ask their clients to commit to binding agreements. This means there are no hidden charges and no nasty surprises at the end of the month. As part of a drive to help you and your practice, other firms are also offering initial financial reviews free of charge.

- **Breadth of Expertise**
  While a book-keeper can keep on top of your basic accountancy needs, it's much better to work with someone who can offer a more rounded financial service. Access to a dedicated wealth management

team allows physicians to explore the ways in which their money can be made to work harder.

What Should Be My Primary Concerns?
Self-assessment Tax Returns

In our experience, many healthcare professionals lack the time – and sometimes the inclination – to file their annual self-assessment tax returns. One hospital consultant, who combined NHS and private work, told us recently that it was simply more financially advantageous for him to forget about his tax return and instead spend all his available time treating patients – despite the risk of a fine.

Perhaps alive to this indifference among physicians and other high earners, HM Revenue & Customs (HMRC) recently increased the maximum financial penalty from £100 to £1200. Under the new rules, anyone who fails to get a tax return in on time faces a fixed £100 penalty even if there was no tax to pay. Those who continue to fail to act are hit with a £900 fine after three months and a six-month penalty of £300, or 5% of the outstanding tax, whichever is greater. Those who fail to act before a year has passed face an additional fine of 5% of what they owe, or another £300.

On top of these penalties are extra charges for not paying the tax on time. A month after the deadline, the fine is 5% of the outstanding bill, after six months an additional 5% is added and after 12 months another 5%.

The early signs are that the higher penalties are having the desired effect. HMRC announced in August that the number of outstanding returns was down almost 50% on 2011's figure, and represented just 5.9% of self-assessment taxpayers, compared with 10.7% last year. HMRC's director general for personal tax, Stephen Banyard, said at the time: "We want the returns, not the penalties. This year, half a million more people have filed their return – which means we are issuing 44% fewer penalties. But, despite several reminders, nearly 6% of people have not sent their 2010/11 tax returns to us and they'll be getting a penalty."

As well as financial penalties, failure to file a tax return on time can result in a tax investigation by HMRC. This has the potential to damage your reputation, and will also require considerable time and input from your accountant to address HMRC's concerns. If your accountant doesn't operate a flat fixed-fee structure, the extra work they are required to do will obviously mean increased costs for you. On the issue of HMRC compliance, physicians are reminded that they are required to keep hold of their tax records for six years. Many medical professionals that we work with don't realise that failure to do so can result in a fine of up to £3000.

Keeping Track of your Incomings and Outgoings

If the thought of having to manage all of your receipts, bank statements and other papers fills you with dread, then you're not alone. In order to make your life as easy as possible, your accountant's book-keeping services should be made available both online and via post. If you opt for the postal service option, you should be able to send your receipts in an envelope every month and let your accountant take care of the rest. We recommend carrying out book-keeping services on a monthly as opposed to an annual basis.

A high-quality online service will allow you to take a photo or scan a copy of your receipts and email them to a dedicated personal accountant. Those who prefer to conduct their business electronically should also be able to rely on their accountant's secure online portal to enter sales invoices, purchase invoices and bank statement details.

Sole Trader, Limited Company or Partnership?
Your accountant should offer advice on which business structure is the most suitable and tax-efficient for you, and talk you through the benefits and drawbacks of each option. A limited company is the most popular choice for medical professionals, as it limits liability and offers the opportunity for profits to be re-invested. If you operate as a limited company, your accountant should offer you the option of using their office as your registered business address – allowing them to receive all relevant paperwork directly and therefore process it more quickly.

However, more and more medical professionals are entering into limited liability partnerships (LLPs). Under this structure, profits are shared among members and it is these individuals – rather than the LLP – that pay income tax on profits. Unlike limited companies, LLPs don't have to pay corporation tax. An LLP is similar to a normal partnership but its members benefit from reduced personal responsibility. While this offers more security, it also comes with added complications.

For example, it's important that each member of the partnership registers as self-employed with HMRC. This means each of you will need to include details of any profits on your individual-self assessment tax returns each year. Self-employed partners are also responsible for paying their own NI contributions. Consulting a financial advisor in the early stages can help ensure you meet all the necessary requirements and are fully up to speed with the legal requirements of operating as an LLP.

Before going down the LLP route, there are certain requirements that physicians should be aware of. Some examples include:

- **Filling in a Partnership Tax Return**
  This includes a partnership statement, showing how profits or losses have been divided among the partners.
- **Appointing a 'Nominated Member'**
  The assigned person should fill in the partnership tax return and send it to HMRC. He or she should also make sure that all members of the partnership are given copies of this statement to help them complete their own personal tax returns. While the nominated member is responsible for the partnership tax return, all members are jointly liable for any penalties that result from it being submitted late or incorrectly.
- **Display your LLP's Name**
  The partnership's name, place of registration, registered number and registered office address should be displayed clearly outside your surgery or practice and on letters, receipts and invoices. Along with your VAT number and an email address, these details should also feature on your website if you have one.
- **Keep Companies House Informed**
  Submit an annual return every year so your records are kept up to date. You must also make sure you let Companies House know of any changes to partner membership and/or registered company details.

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Book Review by Prof Davinder Sandhu

Once in a while one comes across a book that makes a deep impact. Sustainable Healthcare is such a book, and is very timely in the context of modern healthcare and developing green policies. It is for this reason, as its message affects us all, that I have done an extensive book review to encourage the reader to embrace the sustainability challenge.

Should people working in healthcare be interested in sustainability? If the answer is yes, then we need to define what sustainable healthcare is and how to achieve it. This book discusses the above. The authors are a group of international experts and explore questions such as:

- What is the relevance of sustainability in healthcare?
- How we can recreate low carbon care pathways?
- How does climate change threaten human health?
- How can healthcare organisations do better with their waste?
- Can death and dying become more sustainable?
- How can we engage ourselves and others with this agenda?

So then, what is sustainability? Sustainability is about looking after things now so that they can be enjoyed naturally by us up to the end of our lives, but also by future generations. Sustainability, therefore, is a paradigm, a distinct way of thinking about our place in the world. Sustainability education is therefore about changing perspectives as well as acquiring knowledge.

The book focuses mainly on the environmental aspects of sustainability; but while financial and environmental sustainability are intuitive concepts, social sustainability is more complex. It is about fostering communities that build capacity, develop skills, create social cohesion, improve health equity and champion resilience, while at the same time looking after the physical environment. When people ask what health is, this is difficult to define. The WHO definition of health is "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (1946). This definition has limitations and sets an absolute standard of health that makes it practically unobtainable, given our ageing population and prevalence of long-term conditions. It is therefore helpful to explore the WHO definition to as concepts of resilience, adaption and self-management.

A much more meaningful definition of health given by the authors is the ability to adapt and self-manage in the face of social, physical and emotional challenges. Health services now increasingly deal with multi-system risk factors for chronic diseases which define the modern world, and previous concepts of ill and well have largely become outdated. Organisations that survive and prosper in the future will not necessarily be those which are the biggest or more prestigious, they are in fact the ones that deliver today and at the same time adapt for tomorrow. Therefore defining what health means is important if health services want to become more sustainable. Although health systems prevent cure and manage health problems, they also create health problems such as patient safety and drug errors. Therefore it is important to have healthcare without harm. *Primum non nocere* - first do no harm. Knut *et al.* also bring in cultural diversity and social sustainability. Cultural diversity, like biodiversity, is something intrinsically worthy which also contributes to the health of the whole. Like plants and animals, our languages are under threat of extinction, and with them cultural perspectives, developed over thousands of years, can die too. It is estimated that by 2050, half the world's six thousand languages will no longer have living speakers. Social sustainability then is about preserving humanity's cultural heritage, while encouraging social practices that enhance resilience such as social justice, gender equality, religious tolerance, inter-generational equity, fair sharing of natural resources and basic education for all. Research shows that people with strong social networks live longer, healthier lives compared to those who are poorly connected in social terms. Building community is for this reason a legitimate part of medical enterprise. Why should we and governments drive sustainability? Firstly, sustainability can save money. Heat that is escaping from a poorly-insulated building has to be paid for by someone. Avoiding unnecessary investigations means that there is more money around to fund other more useful activities. Secondly, a sustainable approach leads to better health outcomes. If we focus on areas for improvement, such as better school meals, less advertising of processed food, and health education for mothers, we might hold back the rising tide of obesity in children who we know go on to become less healthy adults. Thirdly, sustainability nurtures the earth's system. For instance, low carbon healthcare helps stem global warming and the ensuing drought and flooding cycles. In effect sustainable care is high quality care: lean, responsive and compassionate. Doctors are the most trusted of all professionals and more recently have been instrumental in confronting many risks to health, for instance with tobacco and alcohol.

The book is clear in ideas of critical thinking, scientific evidence and practical suggestions for transformative action. They do look at climate science and review the current evidence for global warming and how this impacts on health. They also explore the concept of resilience. The difficulty is in engaging with issues that are unsettling and, at times, seemingly remote. The core ideas of the book accumulate in a vision for sustainable health systems. The authors address practical application of these ideas to the organisation of clinical care, including chapters on food, transport, buildings and end of life care. Finally, they look at how

healthcare professionals can further their engagement with sustainability. An additional strength in this book is the summary of key papers and reports, including key points from the chapters. In addition, there is a comprehensive list of references in each chapter.

There is a need to bring sustainability to its rightful place at the centre stage of healthcare policy and practice. We draw spiritual sustenance from nature in all its beauty and diversity. The science is now unequivocal: this planet is under stress due to human activity. The authors unpack these stresses such as climate change and the loss of biodiversity, and consider the various consequences for human health and a healthcare system. We are dealing with a system that itself struggles to contain costs, deal with the soaring prevalence of chronic illness and bring humanity to technological care.

This book describes a new paradigm to tackle these pressing predicaments – a collection of ideas and perspectives that fall under the banner of sustainable healthcare, thus bringing to the foreground the prevention of disease and the creation of individual and community resilience. It champions lean systems of clinical care that maximise efficiency and common humanity and minimise resource use and the creation of waste products, including greenhouse gases and toxic pollutants. A consistent observation is that many interventions that improve individual health such as fresh, local and mainly plant-based food are also good for the health of the planetary system, creating what are termed virtuous cycles. The authors cut through the jargon and challenge the rhetoric of both fear and denial. They focus on the essential questions, offering a synopsis of the main issues, with key references and links to sources of further information. Nineteenth century medicine witnessed the emergence of germ theory which revolutionised our understanding of infectious disease from the prevalent miasmatic paradigm, which held that disease arose from bad air. The majority of healthcare is going to be or is related to two extremes of life – neonatal and end of life care. The undifferentiated elderly patients, who will have several clinical morbidities making them complex, are going to be the largest group requiring healthcare. Because of demographic changes, chronic diseases such as diabetes and respiratory disease combined with modern sedentary lifestyles and the western diet will continue to take a serious toll on our health. Judicious use of investigations, medications and surgery will remain at the heart of good medicine. Just because some treatment is possible it does not mean that it is desirable. The direction they advocate is to better health with paradoxically less healthcare, putting a firmer emphasis on broad, holistic and mainly preventative interventions. A welcome and convenient truth is that such interventions, be they preventative or therapeutic, are also, typically, much kinder on the planetary system. Sometimes these things are as much about political will as the scientific theory. There is the self-realisation that what doctors see when they view a patient and their predicament is more than a purely physiological process of light and neuronal pathways. It is a process of meaning-making.

The book refers to the concept of how we know that the planet is ill. We need to develop strategies for adaptation - which is managing the unavoidable - and mitigation - which is about avoiding the unmanageable.

Some of the other interesting concepts the authors develop are: *Connections* between parts of the system comprise two feedback groups - normative and amplificatory. Normative loops are responsible for keeping us stable. If a parameter rises, the normative loop acts to bring it down again. This applies to such physiological controls as blood pressure, glucose levels, posture and appetite. Amplificatory loops enhance their own production; physiological examples include orgasm, ovulation and childbirth. In nature, ice melts at high latitudes due to global warming. As seawater replaces the polar ice, less light is reflected and more heat is absorbed, consequently leading to higher water temperatures and even more ice melting. These are sometimes called runaway effects. *Emergence* is an established scientific phenomenon in which system components, through simple interactions, spontaneously assemble themselves into much more complex formations that emerge without any central controlling element. Living systems have an inherent tendency to take on an orderly structured function which has been termed self-organisation. Another important concept is *coherence*, which describes how parts work synergistically to achieve the purpose of the system without any overt lines of control. *Resilience* is defined as the quality or fact of being able to recover quickly or easily from, or resist being affected by, a misfortune, shock, illness etc. There are three factors that predict resilience: individual attributes such as engaging easy temperament; relational attributes, such as parental relationships; and external support systems, good neighbourhoods and schools. Resilience also applies to much larger organisations and ecosystems and the impact of things such as fire, flood and population explosions. They describe the idea of *latitude*, which is the extent to which we can push a system before it changes beyond the point of easy recovery to its original state. Connectedness is therefore important in social sustainability, which can relate to friends, family and neighbours. The strength of resilience systems is that they are usually diverse systems. Sustainability is what happens when systems work well, when we appreciate sources, syncs and cycles rather than forgetting our open relationship with the earth's system. This awareness allows us to recognise systems that are dysfunctional and precarious - seemingly healthy, but in fact about to crash. All healthcare systems should build in resilience.

The authors' vision for future sustainable healthcare is captured within the paradigms of a changing demography, development of new technologies, different expectations, resource limitation, globalisation and environmental change. Empowerment is very important. It might sound obvious, but it might do more good than harm and create a culture where death is more normal and people have control over their final days. The triple bottom line in healthcare is people, planet and profit. We need to create health literacy. The authors give examples of how we can engage with sustainability, such as diet and exercise, prescription management, contraception management and family planning, and end of life care. People need a narrative; some

steps to latch onto. The book provides useful sources, references and key actions for individuals, healthcare organisations and policy-making departments. No longer will expert consultation require a pilgrimage, it only requires an internet connection. Telemedicine is using telecommunication and information technology. We need to avoid building designs that are more functional than aesthetic in effect, more machine than monument. The way we use health services and buildings is changing. For instance mental health conditions are increasingly being treated in the community rather than in institutions. Frail and dependent people are more and more being cared for at home, and specialist nurses manage chronic diseases in the community rather than in hospitals. The mean length of stay in hospitals has decreased by 28%. With services being relocated in the community there is an increasing need for suitably equipped primary care centres. Remember that disposing of waste will not make it go away – we only shift it to another place. The use of medicines and particularly wastage is of great concern. The NHS bill for drugs can be reduced by a billion pounds if wastage is taken into account. We need to reduce, revise, recycle, recover and then get rid of. For instance, there is a failure to recognise that when we are billed for water, we are billed three times: this is for cleaning the water, providing it, and then dealing with the sewage afterwards. The UK NHS Sustainable Development Unit – a leading 'think tank' - has provided a breakdown of carbon cost for NHS England as a whole. Surprisingly, three-fifths of the NHS carbon footprint stems from procurement. Of this, half is actually attributable to pharmaceuticals and medical equipment, with pharmaceuticals contributing one-fifth of the total for NHS England. Thus medication is likely to contribute considerably to the carbon cost of end of life care. We need to change, they argue, current hospital practice - such as the term 'do not resuscitate (DNR)' which suggests that something is being withheld that should not. It is better to use the term 'allow natural death (AND)' which is more meaningful. Let us all adopt this sensible way forward.

The authors make the point that a key step would be moving from a high-intensity medical industry that focuses on treating diseases to one that concentrates more on preventing illness, for supporting people to live well and proactively with multiple and long-standing conditions. To make this happen we should change our various goals and shifts:-

- From curative to preventive healthcare;
- From a specific sickness service to a culture of wellbeing;
- From professionals "on top" to "on tap";
- From functional buildings to healing environments;
- From sustainable structures to sustainable systems;
- From valuing only individuals now to valuing everyone, and a future in the interest of all.

We can all contribute in our private lives by simple things such as shopping locally, money-saving (switching off lights and equipment when not needed) and enjoying cycling instead of using the car. The term 'normal' is culture-dependent, and once a critical mass is infected with a new idea or trend it may start to spread like wildfire. So there is real hope that small gestures will do good in their own right, but also contribute to a larger shift in attitudes. The choices that we make today will be our legacy for the future. It is important for all educationalists to engage and influence sustainability through curriculum change and role-modelling the issues discussed above of reducing waste, concentrating on effective and efficient healthcare, and adapting for the demographic changes and demands for the future.

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