Prof Sir John Bell. - 22 Years as Regius
Prof Sir David Warrell. Snakes - poisonous or venomous?
Prof Nick Maynard. Gaza - a War on Healthcare
Mr Kanmin Xue. - Retinal Gene Therapy
Dr Joe Wilson. - Junior Doctor Crisis - Here’s why
And much more ......

Cover image: Professor Sir John Bell
OXFORD MEDICAL ALUMNI (OMA) promotes good fellowship amongst graduates from the Oxford Medical School by regular meetings for continued learning, exchange of ideas, networking, and socialising.

OMA needs You!
These are exciting times for OMA. The Editor is vacating her chair and invites you to come out of the wings and take up the mantle. We anticipate a much closer relationship with the medical students, to merge the best of the former Gazette with Oxford Medicine. If you are interested and would like to know more please contact me: lyn.williamson@medsci.ox.ac.uk

OXFORD MEDICAL LECTURE CLUB (OMLC)
Distinguished and engaging speakers have entertained hundreds of alumni both live and on-line over the past year of OMLC lectures. Meetings are held at St Hugh’s College on the last Monday of each month between 13.00 and 14.00, in person and via Zoom. Click link here for: future lectures and recordings of past lectures.
Contact Professor Morris to join OMLC: john.morris@dpag.ox.ac.uk
Chairman: Dr Andy Molyneux
Webinar ID 99356888975 Passcode: 886561

CAREER ADVICE FOR JUNIOR DOCTORS
Everyone can have times in their careers when they feel lost or uncertain about their next or best steps.
To address this issue, Oxford Medical Alumni (OMA) has been facilitating a career networking and mentoring program to match senior medical students and recent Oxford medical graduates with alumni experienced in a particular field, or with specific academic interests or perhaps knowledge of different career paths. The program is run on an informal basis.
Our experience so far suggests many alumni are keen to share their wisdom and knowledge and we now have an impressive database of mentors willing to be contacted. The group includes leaders from traditional NHS careers in hospital and community specialties, academia and medical education, non-clinical roles including in the public health, policy, pharmaceutical and / or biotech worlds, and those who’ve left the shores of the UK for all manner of destinations around the world.
So, whether it’s advice on what it’s like work in ICU, how to secure that coveted Histopathology registrar job, or how to balance a portfolio career including medical education, we have people who can help. Please get in touch with Dr William Seligman at seligmanw@ymail.com and we will aim to make a suitable introduction for you.

RECOLLECTING OXFORD MEDICINE
is a unique oral history collection about medicine at Oxford from the 1940s onwards, inspired by Dr Peggy Frith (former President of OMA). Through a series of skilful face-to-face interviews by Dr Derek Hudson, you can listen to this special collection of memories. Recollecting Oxford Medicine Podcast Series.

Oxford Medical Alumni Advisory Board (OMAAB)
Lyn Williamson (President) Roger Bodley (treasurer) Dr Zoe Alexopoulos, Professor Sir John Bell, Sir Michael Dixon, Dr Lawrence Leaver, Dr Tim Littlewood, Professor Calman Mackinnon, Dr David McCartney, Professor John Morris, Dr Andy Molyneux, Dr William Seligmann, Professor John Stein, Dr Catherine Swales, Dr Robert Wilkins, Miss Jewel Bennett; Dr Kevin Wedebank.

Editor: Dr Lyn Williamson, OMA President
Editorial Board: Neil Snowise, Mr David Williamson, Dr Alison Rickard and Dr Paul Morrish
Design: Joe Graham, Balancing Act Design. www.balancingact.org.uk

President’s Piece
Life is not fair. And we are the lucky ones. Regius, John Bell, reaches through time and leads us by the hand through half a century of changes that have transformed Oxford into one of the best medical schools and greatest academic institutions in the world. Au revoir and thank you John, for your vision, energy and inspiration.

Cures for the lame and the blind, beguiling serpents; poisons and poisoners; tumours treated by robots, ultrasound, gene therapy and vaccines; new therapies, old remedies; and a sprinkling of time travel. Enjoy this summer edition, with contributions from across the generations and around the globe. Our F1L, with their fearless predictions; and our medical students, bubbling over with enthusiasm, are ready to embrace these exciting advances in medicine.

But life is not fair. When our brightest and best shout about the realities of working in the NHS, it is in all our interests to listen.
Zoom out. Conflict, corruption and climate crisis. Nick Maynard’s report from the horrors of Gaza, and his brave work will move you to tears. Wore bravery in the Congo from where Liz Tissington sends us a clear and unambiguous message to wake up. ‘The tsunamis of antimicrobial resistance is a global one and we will only solve it together’.

And for all this, we need a habitable planet. Our individual actions are important but really effective changes need to come from large institutions and governments. As doctors, we are a powerful and trusted social group and are well placed to advocate for change. Pulling together in the same direction, change must be possible.

Enjoy this edition which I hope will entertain and inform, and reinforce a deep sense of belonging. Signing out before I need to use pronouns.

Lyn

Contents
FEATURES
22 years as Regius Professor Sir John Bell 4
Venomous or Poisonous? Does it Really Matter professor Sir David Warrell 8
INNOVATIONS IN SURGERY AND MEDICINE
High Intensity Focussed Ultrasound - a non invasive technology with great potential Professor David Grainger 10
Navigating Health Inequalities in the world of AI - Assisted Healthcare Dr Hannah Thudium 11
Gene Therapy for Retinal Disease Mr Xanmin Xue 12
CONTROVERSIES, POLITICAL COMMENTS AND LETTERS
Gaza – A War on Healthcare Professor Nick Maynard 14
Open Tibial Fractures in DRC – a question of justice Metka Li Zois-Straj 16
Doctors do not want to go into training anymore. Here’s why Dr Joe Wilson 18
Why is it always so difficult? Dr Rob Alocz 19
Letters, Two fast deliveries and a bouncer Mr David Burge 20
Yet another benefit of the Apple Dr Neil Gibbons 21
My Smart watch saved my life Dr Steve Rimmich and Dr Tom Hyde 22
F1 Predictions - Smart watches for mental health; vaccine for melanoma treatment; CRISPR/Cas9 gene editing for Sickle Cell Disease Dr Laura John and Dr Elizah Hartley 22
‘Not all who wander are lost’ – A return to Zambia Dr Shirley Hayles 23
The journey of David Bear Professor Richard De Slieger 24
Advances in the treatment of Perioperative Joint Infection Mr Ben Randick 25
Medical Murderers Dr Neil Snowise and Professor Catherine Watson 26
Poisoners’ Plants – Watercolour Dr Chris Macdonald 28
Oxford Medical Lecture Club 2024 Oxford Medicine 29
News and Congratulations St James College 30
FROM THE MEDICAL SCHOOL Tingewick Report Athena Hendy 37
OBITUARIES AND TRIBUTES Images by Professor Sir David Warrell 39
Tell us about your different roles over your 50 years in Oxford

When I originally took up the Regius Chair of Medicine in 2002, I had already experienced Oxford as a student in the 1970s, then as a senior fellow in the 1980s, and as Nuffield Professor of Clinical Medicine in the 1990s. Each of these episodes was significantly different from each other, but also gave me a perspective of Oxford over a 50-year time frame. Over that period, the buildings and atmosphere of the University have remained the same, but the level of ambition and achievement has moved on dramatically, making it one of the world’s greatest academic institutions. Since 2002, I have helped the Medical School evolve into one of the best in the world, but that has only been done with the support and collaboration of many outstanding academics, trainees and students who have chosen to spend part of their careers in this institution.

What are your Reflections on Oxford Medical School in the 1970s

When I arrived in 1975, the geometry of the University and the Medical School was completely different to today. The dominant component of the Medical School was South Parks Road, with a great legacy of outstanding basic scientists, Florey, Hodgkin, Porter, and Sherrington. The clinical and translational programme in the Medical School was parked in an obscure corner of the old Radcliffe Infirmary where the emerging departments of clinical medicine and biomedical science, compared to the great and powerful medical schools elsewhere in the world, was not at the level it needed to be. Change was about to happen.

When I left Oxford, funded by The Wellcome Trust and started to create my own lab and develop my own scientific research programme. I was intrigued by the combination of immunology and genetics. Having trained with Hugh McDevitt in Stanford, I started delving into new areas of science. One of my first moves was to obtain the funding for the Wellcome Trust Centre for Molecular Medicine (now the Wellcome Institute of Molecular Medicine) and set up my lab near Andrew McMichael. The newly emerging Sanger sequencing technology and polymerase chain reaction. These sorts of tools provided the ability to characterise molecular events in a way that even a decade before would not have been imagined.

The buildings and atmosphere of the University have remained the same, but the level of ambition and achievement has moved on dramatically, making it one of the world’s greatest academic institutions.

You left the UK for part of your Postgraduate Training – why was that?

I did postgraduate clinical training in London and then went to Stanford University to train in immunology and genetics with Hugh McDevitt throughout the 1980s. This made me realise that Oxford was some distance behind its North American competitors. Stanford was a hub of exciting new scientific endeavours, being at the heart of the revolution in molecular biology, gene cloning and sequencing, recombinant DNA technology and biotech. It was marvellous exposure to me, but also provided me with a model which I hoped I would someday be able to apply elsewhere. After six years of Fellowship training, I returned to Oxford, funded by The Wellcome Trust and began to create my own lab and develop my own scientific research programme. I was intrigued by the combination of immunology and genetics. Having trained with Hugh McDevitt in Stanford, I started delving into new areas of science. One of my first moves was to obtain the funding for the Wellcome Trust Centre for Molecular Medicine (now the Wellcome Institute of Molecular Medicine) and set up my lab near Andrew McMichael. The newly emerging Sanger sequencing technology and polymerase chain reaction. These sorts of tools provided the ability to characterise molecular events in a way that even a decade before would not have been imagined.

How did you establish yourself back in Oxford?

On returning to the UK for Stanford, I moved into the Institute of Molecular Medicine (now the Weatherall Institute of Molecular Medicine) and set up my lab near Andrew McMichael where I began to develop programmes in immunology and genetics. In 1992, when David Weatherall became Regius Professor, I was encouraged to look at the Nuffield Professorship of Clinical Medicine, the head of the largest department, both clinical and research, in the Medical School. Much to my surprise, I was appointed to that position.

Tell us about your involvement with Genetic Research

The Nuffield Department of Clinical Medicine was emerging as one of the largest in the University and, when I took the helm of that Department, there were many opportunities to develop it further across many of the subspecialties of medicine, but also delving into new areas of science. One of my first moves was to obtain the funding for the Wellcome Trust Centre for Human Genetics with Peter Morris. At that time, little was known about the genetics of common disease, but it was clear that there might be a significant role for genetic determinants of common complex traits. As a result, we put together a powerful consortium of scientists to take this on. It was approved by The Wellcome Trust, which had just become a large charity when The Wellcome Trust had sold its stake in The Wellcome drug company. Taking this problem on was viewed by many as a high-risk experiment and, indeed, it did take much longer than we anticipated to get to the bottom of this problem. However, over time, it has emerged that all common diseases have a multiple-genetic determinants that, when you add them together, create a very significant risk of disease. The work done that underpinned this was largely contributed by the Wellcome Centre in Oxford and assets such as UK Biobank. The ability to apply Genome Wide Association Studies (GWAS) at scale rapidly led to the accumulation of genetic variants that contributed small but significant amounts to risk which, when added together, provided a powerful tool for the prediction of most chronic diseases. The work that underpinned this was great justification for the creation of the Wellcome Trust Centre for Human Genetics and Oxford was a major driver of this agenda globally.

How were research facilities developing in Oxford?

I also had the opportunity to begin to build a new research campus in Oxford at Old Road, the Wellcome Trust Centre for Human Genetics was the first of many buildings that have now gone into that campus, making it the largest aggregation of research scientists in Europe: the Richard Doll Building, the “Green Building” for Biomedical Engineering, Vaccines and Cancer, The Kennedy Institute, the Centre for Cellular and Molecular Physiology (CCMP), the Cryo-EM facility; the Big Data Institute; the Target Discovery Institute, and the Institute of Developmental and Regenerative Medicine. These are all new facilities that have developed on that campus over the last twenty-five years and have made it a thriving ecosystem for a wide range for a wide range of different types of medical science. Close at hand, of course, are the Botnar Institute, the Nuffield Orthopaedic Centre, the Oxford Centre for Diabetes, Endocrinology and Metabolism on the Churchill Campus, which are also important associated research institutes that form part of that research environment in Headington.

Tell us about your role as a clinical teacher

In those days of the Nuffield Chair of Medicine, it was traditional for the Nuffield Professor to spend time teaching the students acute medicine of the wards, this occurred about four months of the year for me. It was at a stage when acute hospitals had not been overwhelmed in their A&E departments and it was possible to teach effectively, as well as run a “not- run like structure which brought teams of trainees and clinicians together. It was the last chapter in our ability to teach effectively at the bedside in acute medicine and, by the time I stepped down from the Chair, the weight of patient pressures in the Acute Service was making this a challenging domain.

You were appointed to the Regius Chair. How did you develop that role?

After ten years in post as Nuffield Professor of Medicine, I felt it was time to move on and looked both in the UK and abroad for positions. As it happened, Sir David Weatherall was retiring from the Regius Chair, and I had an opportunity to step into that job. The advantage of this position is that it provided enormous scope for me to undertake a range of different activities without the burden of having a strong executive role. I could continue...
The ability to apply Genome Wide Association Studies (GWAS) at scale rapidly led to the accumulation of genetic variants that contributed small but significant amounts to risk which, when added together, provided a powerful tool for the prediction of most chronic diseases

to help shape and develop the Medical School’s strategy and its implementation but had only one direct report who was my PA who helped me through the next twenty-five years. The freedom to expand my horizons allowed me to engage in a variety of national and international programmes. On the national stage, I was very involved in the UK’s Life Sciences Strategy. I had the opportunity to participate in a range of biotech start-up companies when I was the Nuffield Chair and, in 2001, I joined the Board of Roche AG, the large Swiss biopharmaceutical company, and subsequently also joined the Board of Genentech, its major biotechnology affiliate in California. This experience gave me unique insights into the way the commercial side of Life Sciences was developing, and I was asked by Gordon Brown, the then Prime Minister, to take on the responsibility for the newly formed Office of Strategic Coordination of Health Research (OSCHR). This was a committee intended to bring together all the types of Government and charitable funding for biomedical research and attempt to coordinate it in an effective way. This, of course, was a challenging set of objectives, but there was emerging a set of leaders with the funding agencies that got on well together and had a shared ambition. The Government was clear that they would help with increased funding if we could coordinate our efforts, which we did. About the same time, I also took on the Presidency of the Academy of Medical Sciences, which is the Home of academic medicine in the UK. I spent time developing the platform for the Academy, identifying a new premises on Portland Place, and having it refurbished and established as our new home.

Tell us about developing Genomic Research I also had the opportunity of contributing significantly to some of the major UK projects that emerged in the first twenty years of this century. UK Biobank was one where I played a significant initiating role, chairing its First Science Committee and sitting on the Board for the first decade, during which time, 500,000 people were recruited. This has now become the deepest phenotyped cohort on the planet and has become an important resource for the understanding of disease biology and mechanism. In 2011, I had taken on the role of Life Sciences Champion, guiding Government decisions on how we could increase the capacity of the Life Sciences sector in the UK. I worked very closely with David Cameron and, with his support, we capitalised on the availability of very large scale, cheap, whole genome sequencing as a methodology for genetic diagnosis in both rare disease and cancer. The Genomics England programme started with the 100,000 Genomes Project, successfully completed in 2018, the programme continues to this day, having established genomics as a key part of the NHS. The final, big cohort project I became involved in emerged again from the Life Sciences industry which encouraged us to think about how the paradigm for healthcare could shift to the left and stop purely being a healthcare environment that treated people within a staged disease, at considerable expense in complex hospital settings. The idea behind this cohort – Our Future Health – was to identify and recruit 5 million people, 10% of the UK population, into a large cohort where genetic screening would be done automatically, and the cohort would be used to identify high-risk populations that then could be studied in the early, presymptomatic stage of their diseases. This project has been enormously successful and, indeed, in the large eighteen months, has recruited 1.5 million participants and continues to recruit at the level of 60,000 people a month.

What developments did you oversee in the Biotech Sector? The UK has thrived as the home for biotech, medtech, and pharmaceutical development, and I have had the opportunity to participate in a range of different ways. I am very engaged in this side of developing the biotech sector. In Oxford, in particular, I made the observation that no major university on the planet exists without a large tech sector surrounding it, and Oxford was lagging far behind its peers in that domain. We have, however, largely turned that around with the ability to spin out more biotech companies than any other institution in the UK and, together with other institutions in the “golden triangle”, we have one of the strongest biotech and life sciences sectors outside Boston and Silicon Valley. One of my major achievements was to enable a company called Immunocore which had been spun out of my lab by Bent Jacobsen in 2001 to grow and develop into the world’s first T-cell receptor therapeutics company. The company has one successful product and a number of others following close behind and is the largest biotech company by market cap in the UK, employing 500 scientists in Milton Park. Creating that company illustrated the number of challenges we have in the UK in building successful, mid-sized companies and, as Chairman of Immunocore, I have observed and helped manage many of them.

What other research avenues did you explore? One of the most interesting things of the Regius job, however, has been trying to anticipate new trends and opportunities in biomedicine. Oxford has been good at predicting in which direction the field is going and investing heavily before others had thought about it carefully. The investments in common disease genetics were a good example, but we followed this with significant investments in biomedi cal engineering, in vaccines through the Jenner Institute, in immunology – particularly cancer immunology and autoimmunity in developmental biology and in Big Data which has now become one of the most exciting new subjects for biomedical science. Trying to predict where the field of biomedicine was going was one of the major roles of the Regius job and, although we didn’t get it all right, we get close on many occasions and managed to bring partners into play to allow us to lead in many areas.

How did Oxford interact with interests overseas? One of the areas that has had the most success of the time when I was both Nuffield Professor of Medicine and Regius Professor has been our large global health network. This has continued to thrive and, indeed, existed well before the introduction from the Gates Foundation and the multiplicity of other funders; it was one of the flagship’s that The Wellcome Trust created in the 1970s and 1980s. These units have had a major role in understanding and treating disease, and I have also had the pleasure of helping the Gates Foundation organise its priorities by chairing its Scientific Advisory Committee for the past fifteen years.

Which of your achievements are you most proud of? Watching the growth and expansion of medicine in Oxford has been a real pleasure. The team has had great support from all the Vice-Chancellors and senior management of the University and the success of the Medical School is well reflected by the level of 60,000 people a month.

One of my major achievements was to enable a company called Immunocore which had been spun out of my lab by Bent Jacobsen in 2001 to grow and develop into the world’s first T-cell receptor therapeutics company.

The freedom to expand my horizons allowed me to engage in a variety of national and international programmes.
Venomous or Poisonous? Does it really matter?

I was arguing with some friends about Agatha Christie’s seemingly arbitrary and interchangeable use of the words “venom”, “venomous”, “poison”, “poisonous”, and “poisoned” in my favourite Poirot story, “Death in the Green Room” (1930). A French moneylender and blackmailer, Madame Giselle, was murdered during a flight from Le Bourget to Croydon. Poirot cleverly worked out that she had been stabbed in the jugular vein with a dart imbued with the venom of a South African snake. The detective was not distracted by the murderer’s subterfuge of releasing a buzzing wasp into the cabin to provide an audacious and more familiar cause of sudden death (from asphyxiation). I was surprised by the great novelist’s precision. Her training as an apothecary’s assistant had given her expert insight into the actions of drugs and poisons. However, I would argue that, in some circumstances, this difference might not matter.

Some European languages have the same word for venom and poison, and for the verbs to envenom and to poison (German - der Gift, vergiften, Español - el veneno, envenenar, Italian - il veleno, avelenato, Russian - яд, отравлять, ukrainian - яд, вбивати). Others distinguish venom and poison, but use the same verb for to envenom, and to poison (e.g. French - le venin, le poison, empoisonner; Portuguese - o veneno, o tóxico, envenenar). The English language is unusual in distinguishing clearly between venoms and poisons, envenoming (American envenomation) and poisoning, and envenomed and poisoned.

Venoms are complex mixtures of peptides and proteins secreted by special glands possessed by some (venomous) animals. Venoms are injected through the skin of the animal’s prey or enemy using fangs, venom jags, stingers, spines, or other sharp organs. In the case of some cobras and some scorpions and blister beetles, venom spats or is squirted on the conjunctivae or skin may be absorbed, damaging underlying tissues. In contrast, poisons are noxious substances; chemicals, drugs, or toxins derived from bacteria, fungi and animals, that are harmful when swallowed, and are absorbed from the gastrointestinal tract to exert their injurious systemic effects.

The importance of these semantics is that, although poisons exert their injurious systemic effects, venoms are capable of penetrating the skin in a relatively low dose to produce systemic problems. The practical importance of this difference between venoms and poisons is best illustrated by some case histories, both ancient and modern, mythical and factual.

1-Cato the Younger crossing the North African desert in 47BC

During the civil war between Julius Caesar and Pompey (49–45BC), Cato the Younger led his army across the Libyan desert. Lucan, in his Pharsalia, describes how, faced with intensifying heat and thirst, they discovered a large spring. However, ‘ parched asps (cobras) had their station at its brink’, while thirsty “desert-dwelling” or “thirst-snakes” (now known to be harmless colubrids, but which were then believed to have a venom that caused intolerable and inextinguishable thirst) filled the pool itself. The soldiers were too terrified to drink the water, fearing lethal contamination. However, Cato reassured them: “Snake venom is deadly only when mingled in the bloodstream. The venom is in their bite, and the flames threaten death. There is no risk of death in the drinking cup.”

Comment: Cato was correct about ingestion of snake venom, but had he taken a greater interest in the snakes, he could have been even more emphatic in dismissing the risk of drinking dactis-infested water.

2-The murder of Hamlet’s Father.

In Act 1 Scene 5 of Shakespeare’s play, the ghost of Hamlet’s father explains to his son how, despite the public perception that he had died from an adder bite, his brother Claudius had murdered him: “...Upon my secure hour thy uncle stole With jace of cursed hebenon in a vein. And in the porches of my ears did pour The leprous determination.”

Based on textual and etymological arguments, and the victim’s mortal symptoms, David Huskisson (Husatol RJ) in Shakespeare’s Curset hebenon. Perpsect Biol Med 1993;36:262–80) argues that ‘curse hebenon’ was spotted hermlock (Conium maculatum), the agent of Socrates’ judicial execution in 399 BC. Poisoned through the external auditory meatus, absorption of a lethal dose of its principal neurotoxin, conine, would have been possible only if the king’s tympanic membranes had been perforated, perhaps from chronic otitis media, allowing the “leprous determination” to trickle down his Eustachian tube to the nasopharynx, to be absorbed from the gastrointestinal tract (Edan AR, Oglund J. Bartolommeo Eustachio’s De Auditus Organis and the unique murder plot in Shakespeare’s Hamlet. N Engl J Med 1982;307:259). Although conine can be absorbed through the skin, a much larger dose would be required than could be accommodated in the king’s external ear cavities.

Comment: Claudius should not have assumed that his brother could be fatally poisoned through his ears. Spotted hemlock poisons have restricted bioavailability by this route, unlike anticholinergic drugs of mankhood (genus Aconitum, Ranunculaceae), and some other agents such as organophosphates which can penetrate intact skin. Claudius was lucky to achieve his desired effect.

Queen Eleanora saving the life of her husband King Edward I of England.

While on his crusade in Palestine in 1772, Edward I was stabbed in the arm with a poisoned dagger while killing an assassin sent by Mamluk Sultan Baibars. In the current Angelica Kauffman exhibition at the Royal Academy in London, a dramatic painting of 1776 depicts Queen Eleanora sucking the venom from the wound of her husband, King Edward I. This was the selfless act of a devoted wife, but was she in any personal danger? If the dagger had been coated with a venom (e.g. of a Middle Eastern snake or scorpion), she would not have been at risk, provided that her oral epithelium was intact. But if a poison had been used (e.g. a plant poison such as abrin from the rosary pea or ricin from castor oil beans), she might have absorbed a fatal dose.

Comment: Scouring by mouth has proved ineffective in removing various noxious substances from wounds, notable snake poisons, but Queen Eleanora was admirable in her attempt to save her husband, without hesitating to debate whether the risk was envenoming or poisoning.

Death of an expert humming bird ornithologist in Brazil.

The brilliantly-coloured poison dart frogs (Dendrobatidae) of Latin American rain forests (Figure) protect their skin, through which they respire, against pathogens, using highly toxic batrachotoxins, that are probably derived from the frogs’ beetle diet. A few Amerindian tribes, such as the Emberá Chocó of Colombia, coat their hunting arrows with these frogs’ deadly skin secretions. While working in Brazil in 1989, I heard that a hummingbird expert, Augusto Ruschi, had died after collecting some poison dart frogs in Amazapá, North-Eastern Brazil. Soon after handling the “slippery frogs”, he had begun to feel sick, became tachycardic, and had to be admitted to a hospital.

Subsequently, he lost 14 kilos, and experienced “fevers constantly, pares all over my body, but I keep working.” His health continued to deteriorate, and finally, after 10 years, believing that he had been poisoned by the frogs, he resorted to traditional treatment by indigenous shamans, but to no avail. When he died in 1996, the official medical diagnosis was more prosaic – hepatic cirrhosis associated with chronic hepatitis B. (Gugel, Antonio de Fádua Ruschi, o guardião da floresta. Espírito Santo, 2021.).

Comment: Ruschi’s local guide had refused to handle the frogs. This should have warned him that the frogs’ skin slime might be poisonous as well as venomous.

Snake venom: the new drug of choice for Indian ravers

Since 1990, reports have been emerging from India about the use of snake venom as recreational drugs, especially by heroin (“brown sugar”) addicts. A recent Times article suggested that this practice was becoming epidemic in some Indian cities, among those desperate to enhance and expand their raving experience. The species mentioned in these case reports included some of the most dangerous snakes, “venoms.” “venomed” was administered either by inciting a snakebite on the recipient’s tongue or toe, or by swallowing venom in the form of a pill. The effects attributed to snake venom included almost immediate, sustained coma, calm, or ecstasy. Despite the alleged use of venom from deadly neurotoxic cobras and kraits, fatalities seemed to be rare, and the expected locally-necrotic effects of cobra venom were never mentioned. Although some snake venom toxins may stimulate central nervous system opioid receptors, the blood–brain barrier is impermeable to them, making this impossible in those injecting or ingesting snake venom.

Comment: Bites by venomous snakes would cause local and potentially fatal systemic envenoming, whereas bites by non-venomous snakes would be innocuous. Ingested venoms would not be absorbed and could have only psychological effects. These desperate Indian “ravers” are being exploited by unscrupulous purveyors of snake venom and snakebite kits. Snake venom pills may be spiked with psychedelic substances, or the effects may be mainly attributable to heroin.

But what about Novichok? Is it a venom or poison?

Inevitably, some noxious substances defy my simple definitions as venoms or poisons. Although intact skin is generally resistant to both snake venom and updated substances, some poisons, such as aconine, conine, a variety of drugs, such as nicotine, chemicals responsible for occupational exposure, and organophosphates, including the notorious nerve agents Sarin, VX and Novichok, can penetrate skin. Despite these exceptions, I maintain that observing the basic difference between injected venoms and ingested poisons can be important in everyday life, particularly if you are attempting to write plausible crime fiction.
High Intensity Focused Ultrasound
A non-invasive technology with great potential

Introduction

High intensity focused ultrasound (HIFU) is a non invasive treatment for an increasing number of cancers and benign diseases. The principal is similar to focusing the sun's rays with a magnifying glass, causing a hot spot in the focal point. This can be done with ultrasound if the usual diagnostic energy is increased above 55°C and to maintain this temperature for one second or longer. This will lead to coagulative necrosis and immediate cell death. By treating one area and moving the focus very slightly the tumour can be ‘painted out’ without affecting surrounding tissue. Side effects are uncommon, however it is important to keep bowel out of the field as there would be potential perforation due to the interface between bowel and the surrounding tissue. Occasional skin blisters or burns have been reported, especially if treatment is carried out through a previous surgical scar.

The clinical applications for HIFU that have been widely explored lie in neurosurgery, urology, gynaecology and oncology. Accurate placement of the lesions within the target volume depends on guidance with ultrasound or magnetic resonance imaging (MRI).

History

The biological effects of high-intensity ultrasound were first described by Woods and Loomis in 1927 and developed by the aptly named Fry brothers in the 1940s. Fry machines were working in Illinois in the United States. Here after initial experiments on cats and monkeys, Frank Fry went on to develop a system for brain surgery and the first HIFU machine, which is now called the ‘Frank Fry’ machine.

Further trials are planned in Oxford in the near future trials on advanced renal tumours looking at immunological evidence for a possible ablative effect from treatment of the primary tumour. Other machines are in use for the treatment of prostate cancer, which is also NICE approved, and following on from the early work of the Fry brothers, more sophisticated technology has made it possible to place a focused ultrasound into the intact skull without the need for a surgical craniotomy. An MRI guided machine produced by Insightec, currently at St Mary’s hospital in London is now being used successfully to treat essential tremor and the tremor associated with Parkinson’s disease.

Oxford also has a thriving preclinical research programme led by the University of Oxford and Churchill Hospital. The systems themselves may induce bias: digital healthcare technologies are supported by adequately representative data, including accuracy representation which is free from stereotypes and discrimination, and transparency over how data is used.

Inadequate data risks the creation of algorithms which produce a biased output, which may result in misdiagnosis, over- or under-dosing of medication or potentially miss the benefits of a treatment in a subset of population.

Health inequalities are defined by the NHS as ‘unfair and avoidable differences in health across population and between different groups within society’. The wider determinants of health (where we are born, live and work) all impact our day-to-day health as well as our ability to access care. In response to the COVID-19 pandemic’s disproportionate impact on certain communities, an NHS investigation highlighted that complete and timely datasets, along with digitally enabled care pathways that increase inclusion, must be central in initiatives to tackle health inequalities.

AI models typically need to be trained on large datasets and access to this is a challenge in healthcare. There are significant issues with current healthcare datasets which are split into inaccessible, un-integrable silos, missing crucial information such as those poorly representative of certain populations (e.g. the homeless, LMC populations, ethic minorities and the inconsistent inclusion of women in research trials) or consist of error-prone scribbled free text. Inadequate data risks the creation of algorithms which produce a biased output, which may result in misdiagnosis, over- or under-dosing of medication or potentially miss the benefits of a treatment in a subset of population.

Going forward we should aim to strike a balance of harnessing the benefits of AI in healthcare whilst mitigating its risks and avoiding stifling innovation. By prioritising the curation of health datasets with inclusivity and diversity through representational transparency (clear and detailed reporting on ‘who’ is included in healthcare datasets), accurate representation which is free from stereotypes and discrimination, and transparency over how data is used.

There is work already in progress. The Medicines and Healthcare products Regulatory Agency (MHRA) is currently reformatting its research and development guidance for Software as a Medical Device (SaMD). It aims to ‘balance appropriate oversight to protect patient safety with agility to ensure regulation does not present undue barriers to innovation’, through initiatives such as the ‘AI Airlock’. The Turing Institute recently published their ‘data justice’ approach, advocating for ‘applying the principles of social justice’ in data practices and the Standing Together project is developing recommendations to ensure AI healthcare technologies are supported by adequately representative data, amongst others. Ensuring stakeholder groups are involved in the design process alongside regulatory auditing, the effects on health inequalities, should help to minimise unintended consequences and further perpetuation of inequalities and marginalisation of large groups of people. Indeed, it may be that we are able to create algorithms that can do this for us.

AI holds huge potential to radically change how we conduct healthcare. I am excited by the opportunity to examine how our systems affect different populations and radically democratises access to healthcare across the board.

Conclusion

Sir William Osler is reputed to have said that “diseases which harm require treatments that harm less”. Technology does not go backwards. There is no doubt that HIFU works and is now an accepted treatment for localised prostate cancer, and uterine fibroids. In due course, the development of machines which will speed up the treatment and successful non-invasive surgical treatments will become increasingly important in the future decade.
Gene Therapy for Retinal disease

Blindness has profound impact on quality-of-life and is often cited by patients as the second most feared condition after death. Inherited retinal diseases affect around one in 50,000 individuals. A major subgroup among these is retinitis pigmentosa, which typically presents with night blindness followed by progressive visual field loss leading to complete blindness. Clinically, it is characterised by degeneration of rod photoreceptors followed by secondary degeneration of cone photoreceptors. It was considered incurable until the advent of gene therapy.

Extensive genetic testing has revealed mutations in >200 genes that can cause inherited retinal diseases, which encompass all modes of inheritance. What is fascinating is that while some of these genes have well-understood roles in visual function (e.g. encoding enzymes involved in visual cycle), most have more generic roles in protein trafficking, cilary function, messenger RNA splicing, or unknown function. Inherited retinal diseases thus constitute a microcosm of cellular function defects, which disrupt the delicate balance within two of the most metabolically active cell types in the body: photoreceptors and their supporting retinal pigment epithelium (RPE) (Fig.1).

The retina is part of the central nervous system and is made of layers of non-dividing specialised neuronal cells. The eye is a surgically accessible while detailed assessments of the retina can be performed non-invasively through a range of imaging techniques and functional tests. These characteristics, along with autosomal or X-linked recessive inheritance of several forms of inherited retinal diseases made them ideal targets for gene therapy. In particular, RPE65- associated Leber congenital amaurosis (LCA), choroideremia, and RPGR-associated X-linked retinitis pigmentosa. Meanwhile, among various DNA delivery vehicles, the adeno- associated viral (AAV) vector has emerged as an ideal choice for therapeutic application due to its ability to transduce photoreceptors and RPE, very low rate of insertional mutagenesis, and relatively low immunogenicity. However, AAV does have the drawback of a limited cargo capacity of 4 kb.

As an NIHR Academic Clinical Lecturer, working under the mentorship of Professor Robert MacLaren, I had the privilege of running the world’s first clinical trials of retinal gene therapy with AAV vectors containing the expression cassette for a therapeutic human transgene (Fig.1). We developed the surgical technique for subretinal injection of gene therapy vectors with the aim of achieving the highest vector concentration at the target cells (i.e. photoreceptors and RPE) while taking advantage of relatively immune privilege of the subretinal space which is a potential space protected by both the outer and inner blood-retinal barriers (Xue et al, Eye 2018). In addition, we ventured into controversial territory by advocating iatrogenic detachment of the fovea during subretinal administration of gene therapy in order to treat the retinal cells responsible for central visual acuity (Fig 2). Our results later validated this approach, demonstrating that any negative effect from transient separation of photoreceptors from their underlying RPE can be more than overcome by the benefits of the gene therapy, thus enabling rapid recovery of retinal sensitivity and visual acuity gains in choroideremia (Xue et al, Nature Medicine 2018).

Subsequently, we extended our approach to X-linked retinitis pigmentosa in a dose-escalation retinal gene therapy trial. One of the most memorable moments of my career to date was when I had a ‘double-take’ over the retinal sensitivity map of a young patient who underwent unilateral gene therapy a few weeks before. I had initially thought the result from a different patient had been wrongly filed, but quickly realised that it showed a massive expansion of the field of vision in the treated eye. Further scrutiny of the data revealed that the retinal sensitivity gain was also accompanied by regeneration of photoreceptor outer segment structure on optical coherence tomography of the retina – the first time this had been observed in humans (Cehajic-Kapetanovic & Xue et al, Nature Medicine 2020). The gene therapy field has now gained great momentum, boosted by the first approval of a retinal gene therapy – voretigene narvarvec for RPE65-associated LCA. Pivotal trials of other gene therapies, including for X-linked retinitis pigmentosa, are ongoing with great hope to reach the clinic in the near future. However, new challenges have also emerged. Chieftly, retinal inflammation has been recognised as a critical determinant of clinical safety and efficacy of gene therapy, thus my lab has investigated the nature of the immune response to AAV vectors in the eye and developed novel immunomodulatory adjuncts to improve clinical outcomes (Chandler et al, Molecular Therapy-Methods & Clinical Development, 2019 & 2021). The recent discovery of programmable gene editing using CRISPR/Cas systems has greatly expanded the scope of gene therapy to include correction of mutations in autosomal dominant disease genes as well as treating recessive forms where the transgenes are too large to fit inside AAV vectors. With rapid technical advances, we could theoretically develop treatments for the majority of patients with inherited retinal diseases in the future. These individualised gene therapies challenge traditional drug development and approval processes, thus we will need to work with regulatory bodies to develop new paradigms for the treatment of these so-called ‘orphan diseases’.

References

“Blindness has profound impact on quality-of-life and is often cited by patients as the second most feared condition after death.”

Mr. Kanmin Xue, MA MB BChir PhD FRCoPth (Bristol Overseas College, 2000)
Welcome Trust Clinical Research Career Development Fellow, Nuffield Department of Clinical Neurosciences, University of Oxford; Honorary Consultant Vitreoretinal Surgeon, Oxford University Hospitals NHS Foundation Trust, Medical Research Fellow, Corpus Christi Oxford; Oxford Medicine | Summer 2024
I have been travelling to Palestine for many years, initially to the West Bank and since 2010 predominantly to Gaza. My first trip was in 2007 at the invitation of Nick Dudley, retired Oxford Surgeon, and together with Bruce George, Julian Britton and John Kenwright, we spent a week teaching medical students in the West Bank. Since 2007, together with Nick Dudley in the early years, I have led a group of Oxford doctors specialising in surgery, medicine, paediatrics, and obstetrics to Palestine each year to teach Palestinian medical students from Al Quds University in the West Bank and the Islamic University of Gaza and Al Azhar University in Gaza. In recent years I have also worked with Medical Aid for Palestinians (www.map.org.uk) as part of their surgical team to travel into Gaza to carry out and teach advanced upper gastrointestinal surgery for cancer and benign diseases. My last trip to Gaza prior to October 7th was in May last year.

Following the horrific events of October 7th I was asked by MAP UK to lead the first UK Emergency Medical Team (EMT) into Gaza to provide humanitarian aid. We entered via Rafah on Christmas Day last year and worked at Al Aqsa Hospital in Deir al Balah in central Gaza for 2 weeks. I struggle to find the words to describe the true horror of what I witnessed in Gaza. I spent most of my time operating on terrible injuries involving the chest and the abdomen, but also some time in the Emergency Department. Al Aqsa Hospital was operating at 3 to 5 times normal capacity, and together with relatives on many days, there was no running water, no electricity, no running water, and no medical supplies. The number of casualties coming in at times was so high that the "triage" process broke down completely, and patients died due to a lack of triage and capacity to treat them – patients who would have survived in a health care system which had not been systematically targeted and dismantled. Our work at Al Aqsa Hospital was cut short by two days after a missile attack by the Israeli Army on the Intensive Care Unit whilst I was operating.

We stayed in a building in Al Mawasi, west of Khan Younis. The land, air and sea attacks by the Israeli Military were continuous, and it was impossible to sleep properly at night because of the noise from the aerial attacks, often being woken when we had eventually fallen asleep by a huge explosion barely 2km away and the house shaking. On several nights we were kept awake by ground machine gun fights less than 1km away. A week after we left Gaza the house where we were staying in was directly targeted by an Israeli F16 aerial attack – miraculously the MAP team that had replaced my team suffered only minor injuries.

I returned to Gaza with MAP in April and May of this year and spent a further two weeks at Al Aqsa Hospital. We saw the devastating effects of the malnutrition and famine in Gaza which is now leading to many deaths. This has a particular impact on patients recovering from trauma surgery, with wounds breaking down, intestinal fistulae developing, and appalling infections of surgery, most of which were as a direct result of the severe malnutrition we saw. Two tragic cases illustrate the severity of the problem – Tala was a 16-year-old female with a shrapnel injury to her jejunum and Lama was an 18-year-old female with shrapnel damage to her duodenum, small bowel and colon. Both were very malnourished when they arrived at the hospital, both had laparotomies to repair the damage, both developed severe infective complications and bowel breakdown, and both died under my care. They both had clearly survivable injuries, and in my view, malnutrition was a major contributor to their deaths. It is likely that malnutrition will lead to many thousands of "excess" deaths over the next few months.

I left Gaza via the Rafah crossing on May 8th, surrounded by continuous bombardment by the Israeli air and ground forces – we were the last group to get out of Gaza before the Israeli army invaded the Rafah Crossing, and the crossing has remained closed since then, preventing the further entry and exit of any humanitarian aid or Emergency Medical Teams.

Friends I have made over many years have been killed, and most of the hospitals I have worked in over 14 years have been destroyed. The Gazans are a beautiful people. My wife Fionnuala and I have an "adopted" Gazan daughter Enas. She is a doctor whom I trained in Gaza and who managed to get out of Gaza 6 years ago to continue her training in the UK. She is part of our family, and in the absence of her real parents in Gaza (whom I visit every time I go there), we have been her substitute parents. At the request of Enas and her father (in Gaza) I gave her away when she got married, and Fionnuala looked after her when she was pregnant with her first child.

Rebuilding the healthcare system in Gaza will take many years and with MAP I will be helping with this rebui. We will need volunteers from all aspects of healthcare – all fields of medicine and nursing, physiotherapy, and other allied health professionals. Many Oxford healthcare workers have already volunteered to go out to Gaza with MAP – if anyone is interested, please feel free to contact me on nick.maynard@ouh.nhs.uk and I would be delighted to chat further.
Open tibia fractures in the DRC: a question of justice

We don’t talk about open fractures enough. They are a devastating, life-changing injury. Even with gold standard care, the treatment course is long, complex and outcomes are not guaranteed. In the Democratic Republic of the Congo (DRC), treatment for an open fracture may involve a cardboard splint (pictured) and then a long wait for an appropriate surgeon and for funds to be able to pay for antibiotics, the surgical kit required for fixation (if indeed it is available) and a prolonged hospital stay. At the Hôpital Provincial de Référence de Kirkanda, in south-west DRC, the cost of treating an open fracture is more than 200 USD. This cost has to be covered entirely by the patient, usually with family and community contributions. In a country where most people live on 2 USD per day, this cost of treatment is prohibitive. These injuries disproportionately affect young, active breadwinners in the family and are often an injury that impoverishes the whole family.

Orthopaedic sister Maman Chantal at the HPRK (pictured) provides the best care that she can for these patients. She, and the many healthcare professionals around the world, who work to provide compassionate and effective treatment, need all the support we can offer to ensure this happens. Work to ensure we will only solve it together.

Two patients cases from the DRC help illustrate some of the complexity:

A lady in her sixties came to see me with her daughter. She had fallen a month previously, still had hip pain, and needed a stick to walk. Her X-ray showed a displaced intra-capsular hip fracture and I felt pleased I could give her a diagnosis. I thought she wanted an explanation for her pain. But she was angry with me. She asked me what the treatment should be, and I said a hip replacement. I asked her why she was angry, and she said that she knew that if she had not been born in Congo, she would have received the treatment she needed. She told me to always tell her story, to tell people that the world is not fair.

The second case was a young man in his twenties, hit by a motorbike resulting in an open tibia fracture. He was brought to hospital with his leg splinted in cardboard boxes (photo). We were able to get him to theatres quickly and clean the wound and put on an external fixator and cast. The external fixator was decades old, left at the hospital by a previous charity organisation. It was not a combination of treatments we would use in the UK, but he was so grateful to have received treatment. He received timely care and could afford it. It was not ‘gold standard’ but it was the best with what was available.

Antimicrobial Stewardship

Appropriate antibiotics, in combination with good surgical care, is a vital part of treating open fractures. With limited access to effective antibiotics, wounds are very likely to become infected, leading to chronic osteomyelitis. When it comes to antibiotics, and good stewardship, we are asleep at the wheel. Our antimicrobial stewardship (AMS) will only ever be as good as our weakest link. Our efforts in high income countries will be futile if the world’s poorest do not have access to high quality antibiotics in regulated settings when they need them. MRSA accounted for 63% of fracture related infection cases in Cameroon. The tsunami of Antimicrobial Resistance (AMR) is a global issue, and we will only solve it together.

Improving outcomes for musculoskeletal injuries, particularly open tibia fractures, in low resource settings is a complex health challenge but there are solutions. Finding those solutions will require creativity, humility and a willingness to work together. We must find ways to ensure that treatment does not just improve surgical care (particularly for injuries like open tibia fractures) and working to develop a national quality of care strategy.

A lady in her sixties came to see me with her daughter. She had fallen a month previously, still had hip pain, and needed a stick to walk. Her X-ray showed a displaced intra-capsular hip fracture and I felt pleased I could give her a diagnosis. I thought she wanted an explanation for her pain. But she was angry with me. She asked me what the treatment should be, and I said a hip replacement. I asked her why she was angry, and she said that she knew that if she had not been born in Congo, she would have received the treatment she needed. She told me to always tell her story, to tell people that the world is not fair.

The second case was a young man in his twenties, hit by a motorbike resulting in an open tibia fracture. He was brought to hospital with his leg splinted in cardboard boxes (photo). We were able to get him to theatres quickly and clean the wound and put on an external fixator and cast. The external fixator was decades old, left at the hospital by a previous charity organisation. It was not a combination of treatments we would use in the UK, but he was so grateful to have received treatment. He received timely care and could afford it. It was not ‘gold standard’ but it was the best with what was available.

Antimicrobial Stewardship

Appropriate antibiotics, in combination with good surgical care, is a vital part of treating open fractures. With limited access to effective antibiotics, wounds are very likely to become infected, leading to chronic osteomyelitis. When it comes to antibiotics, and good stewardship, we are aslee...
Doctors do not want to go into training anymore: here’s why

I am reaching the end of my FY2 and find myself in a position where I have not applied for core training and am struggling to find a trust grade job. This, quite honestly, is a position I did not anticipate. There are multiple reasons for my situation, none of which make it any less uncomfortable. My position is not unique.

From 2012 to 2022, the proportion of FY2 doctors progressing immediately into higher training has declined sharply from 66% to 23%. This decline shows no sign of tailing off. In contrast, in 2012 only 3% of FY2 doctors entered service appointments, whilst in 2019 (the most recently publicly available data) almost 25% of FY2 doctors started trust grade roles, a staggering increase. Extrapolating forward, it is likely that approximately 40% of current FY2 doctors are looking for employment in a non-training role. However, securing these roles is not easy. I know of several positions attracting over a hundred applications within 24 hours, and the dire financial position of many trusts has certainly squeezed vacancies.

More concerning, in 2019 a third of FY2 doctors left the NHS completely for positions abroad, career breaks, or leaving medicine for good (1).

These data signify an enormous shift in the outlook of today’s young doctors. The ones that remain in training posts will become the NHS’s future consultants. What is driving this change?

Firstly, given the steep decline of doctors immediately entering higher training, one might hypothesise that competition for training positions has significantly declined. Sadly, this is not the case. Applications for core training outreach available posts more than ever. Applications per post have risen from 1.88 in 2016, to 3.17 in 2023, an increase of almost 66%. In some pathways such as anaesthesia and cancer surgery, the greater number of applications is compounded by fewer training numbers being funded by NHS England. Increasing competition for training posts is also an issue for specialties in which we are constantly told there is a paucity of doctors, such as general practice and psychiatry (2).

This sorry set of circumstances is complicated by the national nature of training allocation. Anecdotally, including in myself, there is profound reticence amongst doctors to move across the country for a training post far away from family and friends to then face the possibility of relocating again two to three years later as they enter specialty training. My old clinical tutor was surprised by this attitude when I bumped into them recently in an Oxford pub, suggesting a change in behaviour and attitudes between generations of doctors. Personally, I would rather spend an additional year bolstering an application, with the research, teaching, audit, and quality improvement experience now required, in order to improve my chances of staying in my preferred geographical area. Increasingly, national training pathways supported by Royal Colleges are not the sole route to becoming a consultant. Over the ten years from 2013-2023 the number of doctors successfully entering the specialist register via the portfolio pathway has increased by 110%. It should be noted, however, that last year this route only accounted for just over 10% of those progressing to the specialist register. (3)

The portfolio pathway has seen recent endorsement by major NHS trusts, such as Imperial College NHS Foundation Trust, who advertised multi-positional places in cardiology for just over 10% of those progressing to the specialist register. (3)

These positions providing training continuity and geographical certainty are undoubtedly attractive and will see further expansion.

Fewer doctors than ever are entering training, yet paradoxically, applications are more competitive than ever. In the context of the government-mandated expansion of physician and anaesthesia associate roles, this represents a crisis that will affect us all. Trainees feel that they are being asked to sacrifice more with ever-vanishing returns, and may go some way to explain why retention of doctors after FY2 is poor. Health and training is changing. I worry that when, or if, become a consultant, I will have fewer colleagues, and we will be diminished quality to those who came before us.

Sources:
1. UK Foundation Programme 2019 F2 Career Destinations Survey
3. GMC. Specialist applications and certificate statistics

Immediate progression of FY2 doctors 2012-2022

Why is it so hard?

Thousands of doctors are leaving the UK, unhappy with working conditions (GMC). Despite increases in the number of hospital doctors, “productivity” in hospitals is worse (HM Treasury). Trust boards try to avoid suggesting that we must all “just work harder” – because they recognise that consultants are struggling to cope.

What is going on?

In 2013, with others, I went to Japan to study Toyota Production System (TPS) alongside doctors from Virginia Mason Hospital, Seattle. Over subsequent years, applying what we learned, working in the hospital became more fun and efficient. The CQC rated us outstanding. Focussing on continually improving processes and trying to eliminate wasted time, gradually made the hospital better. The secret? Search for everything that wastes time, and find ways to stop doing things that don’t add value. It’s called process engineering.

Hospitals are complicated factories with a “production line” of patients. When the systems have been fixed, patients return to life outside. We all want to happen without delays. Many people contribute to the production line, and coordination is the key to providing outstanding care. The doctor’s contribution is primarily to find and process all the information associated with a patient in order to make the correct diagnosis, and decide the most effective treatment strategy.

Some information comes from taking a history and examining the patient, but, in modern medicine, most comes from records, charts, lab results, imaging and other digital (and paper) sources.

Doctors’ roles may include manual tasks: operations and procedures require specialist skills. But diagnosis, treatment, communication, record keeping and handling over require effective information flows. Information flows are critical to the running of a modern hospital. When the clinical IT systems in hospital fail, it must close its doors. In 2024, perhaps hospitals should no longer be defined as buildings with beds, but as complex information businesses.

Despite the importance of information, computer tools provided to help doctors are remarkably poor. Most UK hospital wards have computer equipment that is poorly designed, slow, anchored to inconvenient locations, or even non-functional. Computer hardware is provided with no apparent focus on reducing the time it takes to perform the tasks of providing care.

Is ineffective hospital IT inevitable? Is the problem a lack of engagement by doctors? Is it too expensive or complicated to solve?

No. One example—Providing effective hardware in clinical areas is easy and inexpensive. But it requires fresh thinking. Almost all UK hospitals buy computer on wheels (COWs) from just four companies that supply COWS to the NHS. None of these products match doctors’ needs on wards, and they are absurdly expensive. Queen Elizabeth Hospital in the North East took a different approach. They design and build their own computer workstations (using standard production line equipment). By building themselves, the equipment can evolve based on feedback from doctors. The workstations are simple, adaptable, and costing approx. 15% of commercially sourced options, every ward can have lots of them. They are popular with doctors because they make the work quicker and easier. Wards still use mobile COWs for computer functions at the bedside, but for reviewing my clinical notes, computer tools enable faster working. Reducing the time taken to work up a new patient by just 2 minutes saves £10,202 per year of consultant time per ward. So why is it so hard for innovation in one hospital to spread to others? Why don’t hospital IT teams share ideas and experience? Why is an established approach in one hospital not adopted in others?

These questions, it seems to me, perhaps stem from a lack of recognition of the importance of process engineering in hospital care. Do we need to start talking about process engineering in medical training? Is there value in some doctors becoming specialists in “hospital process coordination”?
Two fast deliveries and a bouncer

Neil Gibbons
University College 1974
Retired General Practitioner

Yet another Benefit of the Apple

Doctors are renowned for self-diagnosis, even if sometimes with misplaced enthusiasm. I am guilty of this I am sure, but as age advances we have a greater opportunity to evaluate which of those textbook conditions threaten our previous immortality. After 60 years of type 1 diabetes, monitoring of glucose changed my life radically with the Libre Sense patches, and the ‘Shuggah’ app for investigation of jaundice. I got a call from the ward in the night to say she had abdominal pain and so thought jaundice + abdominal pain = gall stones? but when the ward bleeped me to say the pain was every 3 minutes the penny dropped! She was in the final stages of labour. The ward staff managed to get a delivery pack from casualty and I had to do an episiotomy to delivered the baby in the bed. Following the delivery I booked theatre and repaired the episiotomy under local, then rang Derek at about 6am. I still remember the stunned silence on the end of the phone. After mother and baby were discharged he put in a bill for me for 10 Guineas which I later received! Apparently I had saved the family several hundred guineas, the price for the planned private delivery in London.

By an extraordinary coincidence during my next 6 months, this time as House Surgeon to the Till/Webster firm, I was called to casualty to see a 14 yr old girl with abdominal pain and a mass. The GP had diagnosed torsion of an ovarian cyst. When I examined her the baby’s head was in the pelvis and I delivered her on the trolley.

I doubt many House Officers delivered a baby during their house jobs, let alone 2!

Another experience I recall again as a House Physician involved the admission of a man complaining of chest pains and all the symptoms of a heart attack. He received morphine but the next day when his records arrived it was clear that this was a regular occurrence and there was never any evidence of cardiac pathology. I told the man on discharge that he had this important diagnosis of Munchausen syndrome and to be sure to let doctors know this in the future. A few days later I had a phone call from the medical registrar in Reading thanking me as to let doctors know this in the future. A few days later I had a phone call from the medical registrar in Reading thanking me as the patient had confirmed his diagnosis on admission and was promptly discharged.

I hope these experiences are of interest.

My smart watch saved my life — reply to ad and case report

Neil’s experience is far from unique and increasingly there are reports of the use of these smart technologies not only in the detecting AF or AV conduction abnormality but also for myocardial ischaemia which can be either symptom led as well as in asymptomatic individuals. Below we describe a recent case where a 45-year-old IT worker said “My Apple watch saved my life”. He contacted my colleague Tom after a short episode of chest discomfort on exertion and noted on his Apple Watch (AW) there was T wave inversion which concerned him and emailed them as an attachment with the usual ones. (figures 1a and 1b) He promptly discharged.

Tom Hyde (St George's 1987),
Steve Ramcharit (Linacre 1988, SEH 1993)
Consultant Cardiologists, Great Western Hospital, Swindon

Confirmation of ischaemia noted on his Apple Watch Series 4 (Apple Inc, Cupertino, CA, USA) was borne out on exercise ECG with transient ST segment elevation in the anterior leads (V2-3) (figures 3a and 3b) suggesting progression of LAD disease. HS troponin were elevated 385ng/L after the test requiring urgent angiography.

Indeed an ‘Apple a day may keep an MI away’ when used appropriately. But unlike arrhythmias Apple does not sanction its use for this purpose. The diagnostic accuracy of these devices are steadily improving with advance AI detection software. However, a word of caution in that a normal tracing should not be used as reassurance as a single lead ECG provides only a limited view of the heart’s electrical activity and cannot rule out regional abnormalities. Some postulate improving by recording multiple AW-ECGs from unconventional positions, including the left ankle or chest wall but better still investing recording multiple AW-ECGs from unconventional positions, including the left ankle or chest wall but better still investing in 6 lead ECG machine eg Alvecor (British Heart Foundation - Kardia £119) that links in with your smartphone. Moreover, clinicians may be likely to dismiss findings on these devices as simply artifact or non-diagnostic so needs expert involvement to rule out serious pathology.
The use of commercially available smart watches for monitoring behaviours in mood disorders

Smart watches have been around since the turn of the century and are now a staple in health monitoring technology - step count, sleep patterns, heart rate, etc. These devices are now being introduced into the mental health space for both diagnostic and symptom-monitoring purposes.

Ahmed et al (2022) completed a systematic review into the use of wearable devices in the assessment of anxiety and depression. They explain how studies are using the information gathered into personality and lifestyle habits, such as sleep activity levels, work-rest balance (all of which are highly impacted by mood disorders) to help monitor an individual’s therapeutic progress. The ability to monitor an individual’s activity at numerous points throughout the day as opposed to a subjective report at a weekly appointment is especially significant. This is a fascinating and rapidly expanding area of development, one can only imagine the scope of future applications.

mRNA vaccine targeting melanoma cells

Vaccines are in the limelight once more! The mRNA technology that was used to develop COVID vaccinations is now being repurposed to target cancer. Moderna and Merck have targeted melanoma cells with their personalised mRNA-4157 vaccine. 157 individuals were randomised to receive either 3-6 melanoma excision. The latter were found to have a longer recurrence-free survival of 79% compared to 62% at 18 months. The preliminary findings are incredibly exciting, and in fact the NHS is hoping to involve thousands of patients in these trials by enlisting them through the upcoming Cancer Vaccine Launch Pad (CVLP) scheme - which aims to match eligible cancer patients with possible vaccine trials from 2026 onwards. Whilst it may still be early days, these developments are certainly full of promise.

CRISPR/Cas9 gene editing technology to treat Sickle Cell Disease

Sickle cell disease (SCD) is a 8-haemoglobinopathy - a blood disorder characterised by production of defective haemoglobin. In SCD, single point mutations in the 8-globin gene result in haemoglobin S (HbS) production, rather than normal adult haemoglobin (HbA). Red blood cells carrying HbS are predisposed to sickle, causing haemolysis and vaso-occlusive crises. Since its first description in 1910, our understanding of SCD has advanced significantly. However, treatment options remain limited. Recent developments in gene therapy have provided hope in future management of SCD.

Exagamglogene automecel (exa-cel for short) is a cell therapy designed to stimulate HbF synthesis. It uses CRISPR/Cas9 gene editing technology to modify a patient’s own stem cells, so that upon transplantation, they engraft within bone marrow and produce fetal haemoglobin, allowing oxygen delivery without sickling. In doing so, need for regular blood transfusions and incidence of vaso-occlusive crises is greatly reduced.

A phase III clinical trial published in April 2024 demonstrated that 97% of patients experienced 12 months free of vaso-occlusive crisis, and 100% of patients were free from hospitalisations over this period. A safety profile similar to myeloid ablative conditioning and haematopoietic stem cell transplant has been shown in both adolescent and adult patients, although significant adverse effects have been reported. A phase IV study is currently enrolling, which will provide more information regarding the long-term effects of this treatment.

The novel gene therapy received approval in the US in December 2023, and received a positive opinion in the EU for treatment of transfusion dependent thalassaemia and SCD. NICE has not yet recommended exa-cel therapy in SCD patients that suffer from recurrent vaso-occlusive crises, due to concerns over cost-effectiveness. However, considering the possible cure exa-cel represents for SCD, and the potential for reducing health inequalities associated with the condition, the Sickle Cell Society is hopeful that with provision of additional evidence, exa-cel use will be approved. This is an exciting prospect not only for those with SCD, but also acts as a precedent for approval and integration of future CRISPR/Cas9 gene therapies.

CRISPR/Cas9 gene editing technology to treat Sickle Cell Disease

I was born in Northern Rhodesia and last October, 66 years to the day, I touched down on the now Zambian soil in Lusaka to start a placement as a medical volunteer with an NGO called African Impact (AI).

Nearly 24 hours after setting off I landed in the original capital, where I had to unpack my case and get my stethoscope out to prove to the customs officer that I was actually a medic. I collected the Dutch AI manager, Sander, in a typical African jeep but arrived safely at the Livingstone Backpackers retreat. Shelley AI is based in a house on the backpackers campus and sleeps about 50. Accommodation is basic, with dormitories and a couple of shower blocks around a central courtyard focused on a sitting room, dining area and communal outdoor seating but known as a Boma, that was a hundred years older than everyone else, but they were enthusiastic and sweet to me, and this was now home for 3 months.

On my first night I realise that putting up a mosquito net is akin to putting up a deckchair. Tomorrow I’m accompanying 19-year Elke from Australia to get my first taste of the medical side in baby clinic. It will be a shock to the system after Oxfordshire GP work, no doubt . . . but bring it on!

Wednesday mornings begins in the Linda community centre, which doubles as the antenatal and postnatal ward. Behind the centre is a half-completed large concrete structure. Originally sponsored by Timberland shoes, AI put some money into the centre is a half-completed large concrete structure. Originally sponsored by Timberland shoes, AI put some money into the centre is a half-completed large concrete structure. Originally sponsored by Timberland shoes, AI put some money into the centre is a half-completed large concrete structure. Originally sponsored by Timberland shoes, AI put some money into the centre. It is a wobbly wooden structure reminiscent of a hangman’s scaffold. When I ask the local nurses to measure the babies, to my amazement, there are no stethoscopes. Instead, the babies are dressed in their best clothes. Many have a woolly hat on their head! It looks suffocating, but most of them are very accommodating as they are pulled and pushed about to be weighed, measured, and then jabbed with appropriate vaccinations. Babies who are not gaining are referred to the senior nurse in the old building for conversations about feeding and illness, and there is enormous pride in a job well done if there is a large weight gain.

As well as having their weights documented there is an even less accurate process of measuring babies’ heights. This means pinning the child flat onto a large piece of board, with an inlaid ruler measuring scale and the odd nail sticking out for good measure. Many tears are shed in this pointless exercise, but the ritual is adhered to in a relentless pursuit of good motherhood.

After clinic I find the clinic officer to get her permission to repair the Ministry of Health.

Fathers have the right to come to the head of the queue. . . at odds with girl empowerment and womens rights
The Journeys of David Bear

Richard de Steiger
Epworth Victor Smorgen Chair of Surgery, University of Melbourne
Former Chairman of the Girdlestone Orthopaedic Society

The outdoors treatment in the snow...

Girdlestone Orthopaedic Society
Gathorne Robert Girdlestone (1881-1950) was the first Nuffield Professor of Orthopaedic Surgery for the University of Oxford. The Girdlestone Orthopaedic Society is named in his honour and includes members who have spent all or part of their training at the Nuffield Orthopaedic Centre in Oxford. The Girdlestone procedure, first described in 1943, is a femoral head osteotomy, which removed an infected or damaged femoral head, usually as a result of tuberculous or other pyogenic infections. This relieved patient’s pain and allowed fibrous tissue to fill the socket. Nowadays it is a salvage procedure used for failed, infected hip replacements.

The Travels of David Bear
This collage was put together by Professor Girdlestone and given to a small child whilst she spent many weeks in hospital at the Nuffield Orthopaedic Centre. It was a lighthearted but thoughtful gift. "I thought that patients recovered better outside than inside.”

Children were kept on bedrest, away from their families, for months and sometime years. They were nursed outdoors, even in the snow! (figure 2 Children with Spinal Tuberculosis recovered better outdoors in the fresh air.

Advances in Orthopaedic Surgery
Orthopaedic surgery has undergone rapid development of all disciplines in the last 70 years. This most exciting of surgical disciplines now treats patients from birth through to very old age. A successful total hip replacement procedure, was deemed to be the most successful operation of the twentieth century, and along with cataract surgery, the most cost-effective.

The focus on research established by Professor Girdlestone continues to the present day. Research at the NOC has demonstrated that the quality of life with PJI is poorer than most other pathologies (including most cancers and cardiovascular diseases). Therefore, the research focus has been both prevention, with a dedicated academic arthroplasty surgeon with a specialist interest in peri-operative care, and treatment, with multiple areas of development of new technology and operative techniques.

NOC surgeons, both from the orthopaedics and sarcoma teams, are on the development panel for a novel endoprosthetic design that uses the latest in 3D-printing technology in titanium, with development of the optimum porous structure and macroscopic morphology to promote bony ingrowth for long term biological fixation (fig1). Previous on-lay designs, utilised mainly in limb salvage surgery for sarcoma as well as in massive bone loss following failed arthroplasty, have had a high failure rate, particularly by mid-term loosening. The design of the novel porous endosteal collar (in-lay) was perfected using finite element analysis (fig 2). There is a significant difference, when using the new collar compared to the old design, in the load passed to the host bone, promoting bone growth rather than resorption. Retrieval of an implanted implant following an amputation for vascular insufficiency in the limb was analysed through sectioning of the implant with a diamond-tipped saw showing the extent of the bony ingrowth (fig 3). 200 proximal femoral replacements have now been implanted at the NOC as it has become the highest volume revision arthroplasty centre in the UK.

Fig 1. Proximal femoral replacements utilising the new 3D printed porous endosteal collar for better long term fixation

Mr Ben Kendrick
President Girdlestone Orthopaedic Society
Consultant Orthopaedic Surgeon, Nuffield Orthopaedic Centre (NOC), Oxford

Fig 2. Finite element analysis was utilized to optimize the design of the collar, with significantly increased areas of bone growth as well as reduced collar pathologic.

Fig 3. Cross section of a retrieved collar demonstrating the amount of bone ingrowth throughout the porous structure.
Medical Murderers: how doctor perpetrators have changed their choice of poison and drugs over the centuries

Neil G. Snowise (Corpus Christi College 1974) Retired General Practitioner, Pharmaceutical Physician and Visiting Senior Lecturer, Centre for Pharmaceutical Medicine Research, Faculty of Life Sciences and Medicine, King's College, London

Katherine D. Watson | Professor of Criminal Justice History, School of Education, Humanities and Languages, Oxford Brooks University

Poison was considered one of the simplest and most effective ways to commit murder in the Victorian era. It was less apparent than other methods of murder, due to the absence of visible injuries and, before forensic toxicology was established, more difficult to detect and prove. Arsenic had a longstanding reputation as an effective poison, but cyanide gained popularity towards the middle of the century, along with opiates, strychnine and other alkaloids. The symptoms of arsenic poisoning mimicked a variety of gastrointestinal illnesses, so acquiring a death certificate was the strongest evidence. He was convicted and hanged in 1856.

The 19th Century: a heyday for poisoners

Drug hygiene was used by Dr. Hawley Crippen to murder his wife in London, in 1910, before he disembowelled her and disposed of her body in a nearby cellar. The toxicology in the form of her sleeping pills before leaving her to drown in the bathtub of their home in Utah, hoping to make her death look like an accident. Although traditional poisons have largely been superseded by other drugs, they are still used, perhaps with more subtle routes of administration.

Doctors and medical professionals have had expert knowledge on the presence of morphine. Both Harris and Buchanan were executed for the murder of their respective wives.

An American physician, Dr. Milton Bowers, had three wives who all died of mysterious illnesses in suspicious circumstances. He was only charged with the murder of his third wife – having claimed that she died of a liver abscess, a post-mortem provided evidence of phosphorus poisoning. A mixture of aconite and antimony was used in a notorious ‘Towards the end of the 19th century, morphine became more popular amongst doctors as a method of murder, perhaps because it was relatively easy for them to obtain it and they knew the exact quantity to use to mimic natural symptoms and death. In addition, with forensic science and toxicology still evolving, it was difficult to detect over 100 years ago and might be missed in a post-mortem. This was certainly the belief of American medical student Carlyle Harris who murdered Dr. George Crippen on 25 January 1910 with a morphine overdose in the form of her sleeping pills. Suspension of Harris had arisen partly on the observation of his wife’s pinpoint pupils, a clinical feature of poison administration all doctors are aware of. A year later, Dr. Robert Buchanan, who had posed as an opium’ simplistic approach, administered morphine to murder his wife, along with topical atropine eye drops to prevent pupil constriction. However, her exhumed body confirmed the presence of morphine. Both Harris and Buchanan were executed for the murder of their respective wives.

The 20th Century: Medical Murderers Chose Newer Drugs

During the twentieth century, other substances gradually replaced the Victorian vermin killers and obtaining poisons became more difficult. Morphine continued to be misused to murder unwanted spouses. Dr. Robert Clements was able to avoid suspicion for several years between 1920 and 1947, while he allegedly murdered his three first wives for lucrative inheritances. His undoing came when he poisoned his fourth wife, the only murder for which he was tried.

Other drugs with legitimate uses in anaesthesia and other branches of medicine started to be used for murder. The anthocinergic

drug hyoscine was used by Dr. Hawley Crippen to murder his wife in London, in 1910, before he disembowelled her and disposed of her body in a nearby cellar. The toxicology in the form of her sleeping pills before leaving her to drown in the bathtub of their home in Utah, hoping to make her death look like an accident. Although traditional poisons have largely been superseded by other drugs, they are still used, perhaps with more subtle routes of administration.

Bizarre method was used by Dr. Khaw Kim Sun, an anaesthetist at the Chinese University of Hong Kong, to murder his wife and daughter in 2015. He placed a yoga ball filled with carbon monoxide in the boot of his wife’s car, which gradually deflated and lethally poisoned them. Some doubt on the trial reliability has been since made and in 2023 a re-trial was ordered.

Conclusions

Although rare, murder perpetrated by doctors against immediate family members is well recognised. The methods have changed over the years, but motives have remained the same – often an affair or financial gain. Doctors have been able to misuse their specialist knowledge of, and access to, drugs and poisons. For many years, they have been able to avoid early suspicion by creating factitious illnesses and, in earlier days, signing their victims’ death certificates when there was less scrutiny. A high degree of suspicion is required to consider that a “trusted” doctor and member of the community could be a murderer, so it is likely that the convictions are the tip of an iceberg.

Finally, it appears that all the doctor perpetrators who murdered their spouses by poisoning were men. This is not surprising in the 19th century, since the first woman to qualify as a doctor in the UK was Elizabeth Garrett Anderson in 1865. But what of the female perpetrators of such crimes? Women have been less likely to murder or were they more subtle and undetected?

A longer version of this review with full references is available from the author neil.snowise@kcl.ac.uk

Towards the end of the 19th century, morphine became more popular amongst doctors as a method of murder.

An American physician, Dr. Milton Bowers, had three wives who all died of mysterious illnesses in suspicious circumstances. He was only charged with the murder of his third wife – having claimed that she died of a liver abscess, a post-mortem provided evidence of phosphorus poisoning. A mixture of aconite and antimony was used in a notorious “Towards the end of the 19th century, morphine became more popular amongst doctors as a method of murder, perhaps because it was relatively easy for them to obtain it and they knew the exact quantity to use to mimic natural symptoms and death. In addition, with forensic science and toxicology still evolving, it was difficult to detect over 100 years ago and might be missed in a post-mortem. This was certainly the belief of American medical student Carlyle Harris who murdered Dr. George Crippen on 25 January 1910 with a morphine overdose in the form of her sleeping pills. Suspension of Harris had arisen partly on the observation of his wife’s pinpoint pupils, a clinical feature of poison administration all doctors are aware of. A year later, Dr. Robert Buchanan, who had posed as an opium

drug hyoscine was used by Dr. Hawley Crippen to murder his wife in London, in 1910, before he disembowelled her and disposed of her body in a nearby cellar. The toxicology in the form of her sleeping pills before leaving her to drown in the bathtub of their home in Utah, hoping to make her death look like an accident. Although traditional poisons have largely been superseded by other drugs, they are still used, perhaps with more subtle routes of administration.

Bizarre method was used by Dr. Khaw Kim Sun, an anaesthetist at the Chinese University of Hong Kong, to murder his wife and daughter in 2015. He placed a yoga ball filled with carbon monoxide in the boot of his wife’s car, which gradually deflated and lethally poisoned them. Some doubt on the trial reliability has been since made and in 2023 a re-trial was ordered.

Conclusions

Although rare, murder perpetrated by doctors against immediate family members is well recognised. The methods have changed over the years, but motives have remained the same – often an affair or financial gain. Doctors have been able to misuse their specialist knowledge of, and access to, drugs and poisons. For many years, they have been able to avoid early suspicion by creating factitious illnesses and, in earlier days, signing their victims’ death certificates when there was less scrutiny. A high degree of suspicion is required to consider that a “trusted” doctor and member of the community could be a murderer, so it is likely that the convictions are the tip of an iceberg.

Finally, it appears that all the doctor perpetrators who murdered their spouses by poisoning were men. This is not surprising in the 19th century, since the first woman to qualify as a doctor in the UK was Elizabeth Garrett Anderson in 1865. But what of the female perpetrators of such crimes? Women have been less likely to murder or were they more subtle and undetected?

A longer version of this review with full references is available from the author neil.snowise@kcl.ac.uk

Towards the end of the 19th century, morphine became more popular amongst doctors as a method of murder.
Having read Neil and Cassie’s article on medical murderers, my inner botanist wanted to learn more about the plants they refer to, and my inner botanical artist decided to paint them! It is interesting that plants this beautiful are the source of such deadly poisons. Alkaloids of plant origin are not always easy to detect on toxicology screening.

The self-deception of surgeons.  
December 18th 2023

Henry Marsh CBE, FRCS  
Henry Marsh is a well-known neurosurgeon as a result of his trenchant views on bureaucracy and lack of vision in the NHS, his pioneering advances with craniofacial awareness patients, his neurosurgery teaching in Ukraine. His 3 bestselling books can arouse fury in some of his colleagues but awake admiration both in his legions of readers, and also in many fellow doctors.

The power of narrative in Medicine  
April 29th 2024

Rachel Clarke  
Rachel Clarke specialises in palliative medicine and is author of three bestselling books about medicine. Breathtaking (2021) was adapted into an acclaimed 2024 ITV series revealing how she and her colleagues confronted the Covid-19 pandemic. Dear Life (2020), on her NHS hospice work, was a BBC Radio 4 Book of the Week. Your Life in My Hands (2017) documents life as a junior doctor. Before medical school, Rachel was a journalist who produced and directed current affairs documentaries on Al Qaeda, the Iraq War and the civil war in the Democratic Republic of Congo. Inspired by a visit to Ukraine in 2022, she founded the charity Hospice Ukraine to support local palliative care teams in Ukraine.

The gut-brain connection: recent advances and future perspectives  
January 29th 2024

Heidi de Wet  
Heidi-de-Wet is an Associate Professor of Physiology and Fellow of St Catherines College, Oxford. Her research focuses on gut brain connections and transporters involved in the regulation of glucose homeostasis, particularly the ATP-binding cassette transporters in gut endocrine K- and L-cells involved in nutrient sensing in the small intestine and the secretion of the peptide hormones GIP and GLP-1 that regulate postprandial insulin release and appetite suppression. Her talk focused on advances in the field of nutrient sensing.

How the Boer War 1899-1902 made the RAMC fit for purpose  
March 25th 2024

Anthony Bradlow  
Anthony Bradlow is a retired rheumatologist/general physician who continues as part of a group researching machine learning in triage of GP referral letters. Son of two historians he has long had an interest in the history of war, particularly the Boer War.

What exactly is Long Covid?  
May 27th 2024

Charles Bangham MRCP, FRC Path, F Med Sci, FRCS  
Charles Bangham is Co-Director of the Institute of Infection in Imperial college. Like many viruses, SARS-CoV-2 can cause either asymptomatic infection or a disease ranging widely in severity from a mild head cold to life-threatening pneumonia or multi-organ failure. A specially pernicious outcome of this infection, in some cases, is the persistence or recurrence of a bewildering variety of symptoms for months or years. This condition - Long Covid - is now imposing a huge burden on the health system and the economy. But what exactly is Long Covid: what are the symptoms, how common is it, and what is known about its pathogenesis? And is there any effective treatment?

The aetiology of ‘senior moments’ and other ‘funny turns’  
February 26th 2024

Peter Rothwell FRCP, F Med Sci  
Peter Rothwell is a clinical neurologist who is the director of the Wolfson Centre for the Prevention of Stroke and Dementia, and Action Research Professor of Neurology in Oxford. This talk explores the increasingly broad clinical phenomenology of TIA and minor stroke. Can we extend the dramatic improvements of acute stroke treatments of the past decade to ‘funny turns’ and atypical TIAs?

Future 2024 lectures:  
Meeting ID 993 5688 8975; Passcode 886561

June 24  
Professor Ben Goldacre  
From Bad Science to Better Data

Sept 21  
Professor Nick Maynard  
From Bad Science to Better Data

Oct 28  
Professor Lawrence Impey  
Pernatal Mortality

Nov 25  
Professor Nick Maynard  
Gaza – a War on Healthcare

Dec 16  
Dr Prasanna Puwuanarajah  
OMLC Christmas Lecture

For individual links to the videos of the lectures, please visit https://www.medsci.ox.ac.uk/get-involved/alumni/events-and-reunions/oxford-medical-lecture-club and click onto each lecture title for access to the video.
Honours, Awards and Congratulations

Oxford Medical People in the 2024 New Years Honours List

Professor Molly Morag Stevens, John Black Professor of Biobaniscoace, Oxford, and Professor at Imperial College London, has been appointed Dame Commander of the Order of the British Empire (DBE), for services to medicine. She has described her work thus: “Imagine a world where diseases such as cancer, malaria and heart failure could be detected as simply, quickly and cheaply as pregnancy is today. We are harnessing the power of nanomaterials to make this dream a reality.”

Professor Neil James McCready Mortensen, Professor of Colorectal Surgery at Oxford University Medical School has been appointed Knight Bachelor, for services to surgery. He founded the Kangaroo Club, the first patient association for those with ileoanal pouches and the charity OCCITUPOSI supporting education and research in colorectal diseases. As President of Royal College of Surgeons of England he commissioned the Kennedy Review and Action Plan 2021, looking at Diversity, Equity and Inclusion within the profession. In his words: “What makes me most proud is seeing some of my disciples, some of my little ‘chickening’ surgeons, develop into properly grown, huge, forceful, successful surgeons themselves - male, female, from every racial background. That is the most important achievement ever - it’s the succession planning in bringing on the next generation of surgeons.”

Professor Liz Robertson, of the Sir William Dunn School of Pathology has been appointed Commander of the Order of the British Empire (CBE), for services to Medical Sciences. Her work in developmental genetics pioneered the introduction of mutations into the mouse germ line using genetically altered stem cells. It was a big surprise and extremely gratifying to have received this honour”, said Professor Robertson, “especially considering the long history of developmental biology at Oxford, including the pioneering work by Richard Gardner and Rosa Beddington carried out here at the Dunn School. Awards really are for team work so a huge big thank you to all my past and present group members, as well as to all my wonderful colleagues here at the Dunn School!”

Dr Alison Hill has been appointed MBE, for services to cycling. A former public health doctor, Dr Hill has promoted the physical and mental health benefits of cycling, as well as its environmental benefits. She has worked with cycling charities and has been recognised for her efforts over the past 18 years. She chairs Cycle, the cycle campaign group for Oxford, and was chair of the Bikeability Trust from 2017 to 2022. The Bikeability Trust manages the flagship national cycle training programme for schoolchildren, and more than four million children have received Bikeability training since 2007. She said she was touched and emotional to be honoured, adding: “This has been my life’s passion for many years now.”

Professor Matthew David Snape, Professor in Paediatrics and Vaccinology, Oxford Vaccine Group, University of Oxford has been appointed MBE, for services to public health, particularly during Covid. His principal areas of research relate to vaccines against meningococcal, pneumococcal, and influenza. He says: “It is especially rewarding to contribute to the importance of Public Health, given the vital role that immunisation has in maintaining the health of the population. My gratitude to my colleagues and friends at the Oxford Vaccine Group is profound and heartfelt.”

Other Awards, Distinctions and Achievements:

Professor Sir Rory Collins, Head of Nuffield Department of Population Health and BHF Professor of Medicine and Epidemiology, has been selected for the TIME100 2024 Health List, for the democratization of health data. As CEO and Principal Investigator of UK Biobank, for the past 19 years, he has instigated and managed large scale and hugely influential epidemiological studies. He says that “TIME100 recognition reflects the enormous collective effort of the extraordinary teams at UK Biobank and Oxford University’s Nuffield Department of Population Health who, alongside others who appear in this first ever TIME100 2024 Health list, are helping to shape a better future for the health of people everywhere.” and also “[1] 3,000 papers published last year without picking up a pen.”

Dr Ashwin Janarayan has been awarded a prestigious 2024 Schmidt Science Fellowship (https://schmidtsciencefellows.org/). Oxford, UK, D Phil supervisor, Professor Michael Dustin (at the Kennedy Institute of Rheumatology), his expertise will be used to search for innovative immunological therapies in Glioblastoma Multiforme, a devastating and cunning (5 per 100,000 per year) malignancy.

Dr Rachel Clarke wrote the book, and co-wrote, with another Oxford Medic Prasanna Puwarranajah (a non- Oxford Medicine student) the screenplay for Breathless, the young’s must-see ITV drama, alongside her continuing work as a Consultant in Palliative Care. She said “Especially in the first wave, with that beautiful spring, we could hear birdsong and the skies were bluer than ever.” “I’m not suggesting it was easy for people. But it was the most helsh experience I’ve ever had as a doctor.” “I wanted people to feel and hear and smell and inhabit that world.” “Even though your heart was breaking, you were losing your mum, your dad, your spouse, you stuck to the rules simply to try and protect other people.” The contrast, between that and partygate, was the absolute best and worst of Britain, side by side. It made my blood boil then, and it always will.

The First In-Human vaccine trial for ‘Nipah Virus’ (a disease with 75% fatality) has been launched in Oxford. Professor Brian Angus, the trial’s Principal Investigator and Professor and Reader in Infectious Diseases at the Centre for Gene Therapy at the University of Oxford’s Nuffield Department of Medicine said: “Due to the high mortality rate and the nature of Nipah virus transmission, the disease is identified as a priority pandemic pathogen. This vaccine trial is an important milestone in identifying a solution that could prevent local outbreaks occurring, while also helping the world prepare for a future global pandemic.”

At the time of going to press we received news that the following were recognised in the King’s Birthday 2024 List:

Professor Freddie Hamdy, CBE for services to Surgical and Cancer Care
Professor Rajesh Thakker, OBE for services to Medical Science and to People with Hereditary and Rare Diseases
Professor Rachel Uphedgegrove, OBE for services to mental health research and life sciences
Professor Claudia Turner, OBE for services to Children’s health in Cambodia and Thailand
Professor Paul Turner, OBE for services to Children’s health in Cambodia and Thailand

What do You Think?

Ken Weir (Pembroke 1961)
Retired Consultant Cardiologist, specialist in Pulmonary Hypertension

Ken Weir’s book of poetry entitled ‘What do You Think?’

Your verse has brought me many gratifications. Namely, for its versatility of thought. I feel that What do You Think? is testament to years of splashing in life's puddles, each poem a little pool of light that refracts a lifetime of experience. Above all, What do You Think? is an exercise in vulnerability. So many of your works are reflections. As some are dark, some are bright, some are insights, some are musings on the human condition. This is the essence of poetry. The poems are beautiful and expertly written. The author has kindly provided a few footnotes to explain meanings of phrases and some of the historical contexts. This collection is worth reading and re-reading.

We grope forward in the dark, then, like moths, perceive the light, soar up in riotous flight but scorch, fall back into the night.

Icarus, the Scientist
Flash Back

Happenstance. Whilst decluttering I found a little yellow box of slides, unopened for 45 years. On the same day, Jewel emailed me her President’s report, bubbling with pride and affection for ‘William Osler House’, and that evening I attended the Access GEM Garden Party at Green Templeton College, formerly Osler House.

July 26th 1978 – Osler House was finally closed to the clinical school. In those buildings and gardens, we had felt nurtured and protected with a deep sense of comfort, belonging and control. During that day we went through the stages of grief together. Anger, Denial and Bargaining had all failed, so our only option was to move rapidly through depression to reluctant acceptance. Some key players posed for my camera, before we were moved into Osler Portacabin in the car park, and then into Osler Cubicle in the new JR Hospital.

May 17th 2024 – Jewel Bennett’s report reassures us that 46 years on, (thanks to generous anonymous alumni donations), the JR Hospital. Osler House was finally closed to the clinical school. In those buildings and gardens, we had felt nurtured and protected with a deep sense of contentment, belonging and control. During that day we went through the stages of grief together. Anger, Denial and Bargaining had all failed, so our only option was to move rapidly through depression to reluctant acceptance. Some key players posed for my camera, before we were moved into Osler Portacabin in the car park, and then into Osler Cubicle in the new JR Hospital.

Flash Forward

A Flash of Inspiration - Da Vinci’s Day Out

I am inspired. Magdalen College Sherrington Society recently hosted a da Vinci XI surgical robot, giving preclinical students the opportunity to trial this innovative technology. This unique event gave us a taste of clinical students and potential future surgeons. The Da Vinci system was first used in the USA in 2000, and has greatly expanded since then, enabling minimally invasive urological and laparoscopic procedures to trans-oral otolaryngology in adult and paediatric cases. In 2023, Vall d’Hebron Hospital, Barcelona, achieved the first fully robotic da Vinci lung transplant, avoiding breaking the patient’s ribs. Since 1990 over 10,000 UK and European surgeons have been trained to use this system. The North-East of England have newly introduced da Vinci training, allowing trainee surgeons, not only consultants, to gain experience. This was personally incredibly inspiring. What other medical will change how we will practice in the future, and how must our training develop to reflect this?

Quick as a Flash - Medical Students Sub-4-Minute-Mile

Monday 6th May saw the 70th anniversary of Sir Roger Bannister’s an Oxford medical student sub-4-minute mile which took place at Iffley Road track. To celebrate this occasion, hundreds of runners participated in their own mile races both on the track and down the high street, running alongside current world record holder Hicham El Guerrouj, and several former world record holders including the BBC’s Steve Cram.

Amongst many others, current Oxford sixth year medical students Matt Fuller and Luke Gribbin came in second and eighth place respectively in 4.23 and 4.39. In the elite mile race, sixth year medic Alexandra Shipley ran the mile in 4.37 to finish in 4th Place. It was inspiring to celebrate the historic achievement of Sir Roger Bannister, and witness the same grit and determination from current Oxford medics 70 years on.

News Flash Net Zero for Osler House

Oxler House’s Summer Vllls campaign began with an exciting turn of events in Roaring On, with Oxler House ‘tying’ with Exeter M3 (despite Oxler being 0.5s faster). A subsequent ‘erg-off’ led to Oxler being declared the winners, and off to the main event we went. Wednesday went wonderfully, with a row over at the top of Div VI, followed by an overbump on Univ M3 – a dream start! Could this be a blades campaign? Unfortunately, Oxler were bumped on Thursday, Friday, and Saturday, resulting in a net zero campaign. Despite making no net progress up the river, this was a resounding success for Osler House – congratulations to all involved.

Flash Fiction -1

Joseph Layzell (Corpus Christi 2019) Year 5

Patients on Paper

Ten-minute appointments, an editor receives her clients. Their manuscripts presented with vulnerability: “What’s the prognosis? Is there anything you can do?”.

Conjunction consultations, prescribed punctuation. Something to ameliorate their story.

A pam-stricken face looks down, unloads a heavy stack of pages. “Help me to end this chapter”. Feeble, “I’ll try”.

Flash Fiction -2

Ariana Minea (Pembroke 2020)

Great Western Hospital Glittering on the horizon
My north star

---
Sustainable Healthcare for Planetary Health

Is what we are doing in practising medicine harming the planet, and thereby our patients’ health, and what is changing and how is medical education recognising this?

Education for Sustainable Healthcare and Planetary Health (ESH) is an emerging paradigm that has parallels with the patient safety movement of a generation ago. Knowing that healthcare contributes 5% of the greenhouse gas emissions of the UK, what are we to do, as professionals devoted to the wellbeing of our patients? How and when and in what direction will the profession change? And how can this be achieved with the speed and scale needed to avert the worst of the climate and ecosystem crisis that is already affecting patients and communities through violent weather events impacting long-term mental health, floods and droughts affecting food production, and infectious diseases that were until recently unimaginable in our practice?

As the lead for ESH at Oxford medical school I have been advising colleagues in integrating this new learning into their own teaching. There’s a huge number of educators involved in producing a rounded doctor, and a rapid way for established clinicians to learn is to have to teach a less familiar subject. Doctors and other professionals involved in medical education will be seeing a requirement to both understand the principles of sustainable healthcare and model this in their practice. They will be seeing a requirement for first hand experience of the speed and scale needed to avert the worst of the climate and ecosystem crisis that is already affecting patients and communities through violent weather events impacting long-term mental health, floods and droughts affecting food production, and infectious diseases that were until recently unimaginable in our practice?

Supporting this paradigm, the GMC has added a new sustainability duty to Good Medical Practice, effective from 30 January this year. It’s two parts, the first mandating the good use of resources taking account of both the immediate patient and the wider population, and the second requiring sustainable practice and consideration of the environmental consequences of healthcare. The accompanying Q&A document highlights my definition of sustainable healthcare, which focuses on the improvement of health and better delivery of healthcare, rather than late intervention in disease, with resulting benefits to patients and to the environment on which human health depends, thus serving to provide high-quality healthcare now without compromising the ability to meet the health needs of the future.

Clearly, sustainable healthcare is good medicine that is good for the patient and the planet. What is not widely recognised is that it is also good for the practitioner, because after the first two essential principles, namely prevention and patient agency over their own care, comes lean care systems – changing structures and systems to avoid unnecessary and unhelpful, even harmful, processes and clinical activity – which would align better with professional ethos. Only after addressing these would we see low carbon alternatives to current interventions which, although accounting for a small proportion of total potential impact compared to prevention, should also become second nature.

To help embed this into the training of doctors, my national working group developed Education for Sustainable Healthcare – A curriculum for the UK which is endorsed and published by the Medical Schools Council, the representative body of all the UK medical schools. It is now on the GMC’s list of documents that support its Outcomes for graduates, which sets out what students must know and be able to do in order to qualify as a doctor in the UK. And lately under the umbrella of the MSC we have set up a network, on which every UK medical school has named representatives, to share ideas for how to incorporate these themes into curriculum and assessment. This curriculum has also informed allied health professions education initiatives, and is being well received internationally.

If you have an involvement or interest in medical education, I hope this gives a sense of what is in progress, with ESH affecting all branches of medicine and healthcare.

Dr SanYuMay Tun
Lead for Education for Sustainable Healthcare, Medical Sciences Division, Fellow of Green Templeton College, University of Oxford
Principal Fellow of the Higher Education Academy

Clinical School News

The concept of an intercalated DPH is not a new one to Oxford. Year on year a small handful of students have paused their clinical training to undertake an extended period of research either locally or nationally. However, to step off the carousel may require escape velocity, opportunity (which may not be necessarily equitable) and funding; there is also the concern about ‘leaving’ the medical school and preparation for a postgraduate return. Five years ago, the Oxford MB DPH program was launched to address these barriers. This combined initiative between the School of Medicine and Biomedical Sciences and two Departments (Oncology and NDDOAMS) offers 8 DPH places each year for our medical students to hit ‘pause’ after FHS or Year 4/GE2 and delve into postgraduate research. Through grants with Cancer Research UK and the Kennedy Trust, the program covers all project costs and funding along with a stipend, educational supervision and return-to-training tutorials. The program is competitive and at full capacity each year, and has generated a new and exciting community of practice – with combined open days and social/scientific activities, supplemented also by OUCAGS and the Doctoral Training Centre. In the midst of growing concern over the threat to the clinical academic pipeline, our program at Oxford is holding the line, inspiring and supporting the next generation of stellar clinician scientists and future leaders.

Congratulations to the 2024 Final Year Prize Winners:

Ledingham Prize in Medicine awarded to Josephaine Carnegie
Mortensen Prize in Surgery awarded to Alexandra Shapley

Bursary for Graduate Entry Medical Students by Access GEM Committee

AccessGEM recently celebrated its 2nd Annual Spring Garden Party. The student-led fundraising campaign was started to create a need-based bursary for graduate entry medical students. Many graduate entry medical students, including this committee’s members, must tutor or work to do the very basics – make rent and buy groceries. This means forgone opportunities which make Oxford the special place it is, including balls or Formal Hall at one’s college. But even more fundamentally, it takes time away from studying, which is critically important to succeeding in an already academically challenging course. AccessGEM aims to change that by creating a new, £5,000pa bursary to enable students to take up the course who otherwise would not be able to do so.

“I don’t come from an affluent background. I’ve worked since I was 16 to support family, and to pull myself through the last few years as a gem. The loans aren’t the same as undergrad. I’m incredibly grateful to be here and gem is essential to diversifying medicine, but it’s also become clear that it’s a choice between focusing on my studies, paying my rent and buying food. I’m not the only grad med who’s gone through this. I wish the AccessGEM bursary existed when I started. It would make it so much easier to focus on my own wellbeing and studies.”

Anonymous current GEM student

The committee offers this poem:

In ancient halls where dreams aspire, AccessGEM ignites a fire.
For graduate medicine, a costly quest, it breaks down barriers, opens the rent.
No longer shackled by hefty fees, Bright minds find their expertise.
For future doctors, come what may, Through AccessGEM’s widened gate, New voices rise, challenge fate.
In Oxford’s halls, they find their place, AccessGEM, a saving grace.
Fulfilding dreams, this unseen scene.
Let today’s steps light the way.
For future doctors, come what may.
In AccessGEM’s reach, they blend.
Opportunity, without end.

The cover of the Medical Schools Council, Spring 2024 issue. In AccessGEM’s 2nd Annual Spring Garden Party, five poetry homeworks were submitted by AccessGEM’s member society, and these were combined into a single poem by the committee. It has been inspired by a Michael Ondaatje poem, which is presented as follows:

images and text
Most articles nowadays feature the flashy front face of a group, with platforms such as Instagram, geared towards celebrating the filtered favourites or 60-second highlights. As well as being profoundly misleading, it means you miss the growth and gratitude for the work behind the momentary glory. Therefore, this edition of the Osler House Alumni Article aims to spotlight the backstage work of the Osler House Committee and its support network. Welcome to Osler House, Behind the Scenes.

As most of you know, William Osler House is a beautiful and highly valued property on the John Radcliffe Hospital site, with facilities that many students would dream of. We have an open-plan lounge area, modern meeting rooms, office space, a gym and a bar. Some furniture items cost over £10k, specifically chosen and shipped from abroad to complement the contemporary architecture. The recently refurbished Osler gym encourages students to be active while maintaining the high standard of Osler House’s Sports teams including cricket, rowing, football, netball, squash, and basketball. To ensure student safety, inductions are conducted by staff from the Tingewick team into collaborative socials to build relationships. Osler House has almost 20 other sub-societies including academic speciality groups that contribute to the Clinical School, Osler Choir and an Acapella group. The Paediatric Society. We also have an Osler House Museum, new international relationships forming and many other events the skies smiled down on us without a drop of rain or storm and barely a cloud in sight. With 23 of us taking on the challenge we were quite a site to behold, trudging up the hills displaying a variety of emotions. And whilst we didn’t quite make the 24 hour time frame we were definitely euphoric to complete the challenge. It served as a fantastic bonding task for the firm, seeing each other quite literally at our worst trekking up Ben Nevis at 5am with 2 hours of sleep. But thanks to generous contributions from friends and family, and even one hiker that we befriended on the way, we raised over £5,000.

Exciting front-facing aspects of the club in this final quarter of the year include the Graduation Ball, this year taking place at the Natural History Museum, new international relationships forming between medical schools across the world, and Academic lectures such as the Clinical School Distinguished Lecture. If you would like to sponsor new developments at Osler House, please do get in touch!

Finally, Osler House committee have turned their attention to the next cohort of students. With new teaching locations, structures, and support, the transition into Clinical School can be daunting. So, we have been in communication with the Pre-Clinical Medical Society and the department to consider creating a transition day where 3rd year students can travel up the hill to see the Hospital site and Osler House, meet the core team, and get an insight into clinical skills.

With the task of Tingewick 2024 Producer ahead of me I shed my ego, some of my black clothing, and prepared myself to embrace the very thing I swore to destroy... Rita Tingewick. After a detailed and gracious handover from the wonderful previous producer, Tolu, I was full of excitement and trepidation as to the task ahead. Whilst we have some big shoes to fill, a new Tingewick year has begun and what a start it has been! Since the allocation of the committee in January we are now up and running and are proud to have three fundraising events in the bag including the raffle and Three Peaks Challenge.

The Tingewick Society is a society under Osler House and serves the clinicians in training. This year Osler House has begun to integrate the Paediatric Society and serve the children under Osler House and serve the medical school. Tingewick is the largest sub-society under Osler House and serves the teaching community. Therefore, this edition of the Osler House Alumni Article aims to spotlight the backstage work of the Osler House Committee and its support network. Welcome to Osler House, Behind the Scenes.

Most articles nowadays feature the flashy front face of a group, with platforms such as Instagram, geared towards celebrating the filtered favourites or 60-second highlights. As well as being profoundly misleading, it means you miss the growth and gratitude for the work behind the momentary glory. Therefore, this edition of the Osler House Alumni Article aims to spotlight the backstage work of the Osler House Committee and its support network. Welcome to Osler House, Behind the Scenes.

As most of you know, William Osler House is a beautiful and highly valued property on the John Radcliffe Hospital site, with facilities that many students would dream of. We have an open-plan lounge area, modern meeting rooms, office space, a gym and a bar. Some furniture items cost over £10k, specifically chosen and shipped from abroad to complement the contemporary architecture. The recently refurbished Osler gym encourages students to be active while maintaining the high standard of Osler House’s Sports teams including cricket, rowing, football, netball, squash, and basketball. To ensure student safety, inductions are conducted by staff from the Tingewick team into collaborative socials to build relationships. Osler House has almost 20 other sub-societies including academic speciality groups that contribute to the Clinical School, Osler Choir and an Acapella group. The Paediatric Society. We also have an Osler House Museum, new international relationships forming and many other events the skies smiled down on us without a drop of rain or snow and barely a cloud in sight. With 23 of us taking on the challenge we were quite a site to behold, trudging up the hills displaying a variety of emotions. And whilst we didn’t quite make the 24 hour time frame we were definitely euphoric to complete the challenge. It served as a fantastic bonding task for the firm, seeing each other quite literally at our worst trekking up Ben Nevis at 5am with 2 hours of sleep. But thanks to generous contributions from friends and family, and even one hiker that we befriended on the way, we raised over £5,000 which made the sore legs mostly worth it.

This has been a stellar start to the year and I am so proud of the commitment and dedication the whole team has shown. I hope this will continue and we can continue to help these vital local charities. We are, as for the past few years, supporting Oxford Hospital Charity. It is always such an honour to be able to support the hospitals that form the core basis to our clinical education and be able to give back to the staff and patients that take the time to educate us in this field. Additionally this year we have chosen to support Restore. This is another Oxfordshire charity that focuses on practical therapies such as art, woodwork and gardening to support mental health rehabilitation. A group of us were lucky enough to visit the site as a part of our course and so to be able to choose to support this charity this year was a wonderful opportunity.

Next we are onto preparations for an alumni garden party. We welcome all Tingewick alumni members on the 20th of July to Osler House for an afternoon of food, drink, music and pure Tingewick reminiscence. We will be sending out further information for tickets soon. For any queries or specific desires to be kept informed, email publicity@tingewick.org

If you are more moved by the classic Tingewick showmanship then look ahead to our Tingead and Tingewick productions. These take place on the 6th–7th of September and the 27th–30th of November respectively. I can assure you that writing is well on its way and it looks like it will be another show you can’t forget.

Overall, we hope this year is a success but you know what they say... it ain’t over till the pink elephant sings.
This is the first edition of our alumni newsletter, at Oxford Medical Students’ Society we want to keep you up to date and informed on what the society is getting up to!

As a brief introduction to the society:

Oxford Medical Students’ Society (MedSoc) is the society for all Oxford students in their first three years of medical school. The society is run entirely by the committee, all of whom are currently in their 2nd or 3rd year studying medicine at Oxford. The committee is elected via an election by members of the society each year.

Our main aim is to bring together students for social and supra-curricular events, as well as provide the student body with representation and visibility of industry leaders in the medical field. Our events are well-attended not only by our members but also by biomedical science students and interested students from various other disciplines. We also have a responsibility to cater for the welfare of medical students during their time here, as well as to communicate between the medical student body and the faculty.

Since the current executive committee (Co-presidents: Bhargava Govardhana and Esele Okondo, Secretary: Maria Nazionale, Treasurer: Hakan Al-Sattar) a list of our full committee can be found on our website below) has taken over, we have since welcomed a new generation of medical students to Oxford MedSoc. It has been a successful year thus far, and below is a summary of some of the things we have achieved so far:

• We hosted academic speaker events with the Nobel Prize winning Sir Peter Ratcliffe and the president of the Royal College of Surgeons, Dr Tim Mitchell
• We held our annual MedSoc Ball, hosting over 200 students at the Oxford University Museum of Natural History.
• This year, we ran a catalogue of social, welfare, academic and charity events (20+ across the academic year).
• Oxford Medical Students’ Society ran our first access event in collaboration with Cambridge Medical Society, delivering a mock interview workshop to over 150 prospective students, working alongside Dr. Chris Norbury and Dr. Fraz Mir. We have an access conference planned for an additional 100+ students at the start of June.
• We raised over £350 for our selected charities Ronald McDonald House (provides accommodation, free of charge, to parents of sick children at the local John Radcliffe hospital) and Médecins Sans Frontières (provision of medical professionals and resources to the areas most in need such as those affected by war and poverty).
• We recruited a team and have produced the first edition of the Oxford Medical Students’ Society Journal, run completely by members of our undergraduate medical student body.
• We also welcomed a new access and outreach representative and LGBT+ rep to the MedSoc committee.

If you would like more updates of what the society is involved in, please follow us on Instagram @oxfordmedsoc or check out our website www.oxfordmedsoc.com

If you would like to collaborate with the society or want any more information we would be happy to address any queries via our emails president@oxfordmedsoc.com / treasurer@oxfordmedsoc.com

Thank you for reading this and being part of a historic year of firsts for Oxford Medical Students’ society.

Obituaries

In Memoriam

The following deaths have been notified to the alumni office since the winter edition of Oxford Medicine:

Dr Jennifer Dennis (nee Pearson) 1955 St Hugh’s College (1936-2023) Consultant Paediatrician

Dr Gordon E. Sladen 1954 Merton College (1936-2023) Consultant Gastroenterologist

Dr Gareth J. Shellard 2008 Exeter College (1989-2024)

Dr Dumaresq M. Child 1956 St Edmund Hall (1938-2024) General Practitioner, Ontario

Dr Jill E. Brock (nee Lewis) 1956 Somerville College (1937-2024) Clinical Oncologist BMJ 2023;383:p2575

Dr David A. Sturgeon 1965 St Peter’s College (1947-2024) Consultant Psychiatrist

Dr. John Trevor Hughes (Green Templeton College) 1928 – 2023

A graduate of Manchester University he qualified MB,ChB in 1951. He did his house jobs in the Manchester Royal Infirmary and enjoyed working very long hours with no days off. As a Manchester expert pathology departments a rota for emergency anaesthetics found him providing this service to a surgeon Morag Stewart who was to become his wife.

His National Service in the RAMC followed. During it this quiet man showed his capacity for deep love, his need for and the making great friends, his energy and ability to learn and pass milestones requiring medical expertise, and for multiple achievements in short time. As a pathologist in the Queen Alexandra Military Hospital (QAMH) he found time for para-troop training near Oxford and learned to fly in Hampshire. He states in his autobiography that the para-troop regiment required “selection of physically and mentally tough soldiers.” The training he describes was indeed tough. While at QAMH he obtained his MD by thesis, the MRCP, and both the Diploma in Clinical Pathology and the Diploma of Pathology. He made the most of being in London, visiting and sometimes assisting in other London hospitals. Based in London he saw most of the London Theatre shows. He also married Morag and then they both went skiing.

His next job was as a pathologist at Stoke Mandeville where he had well known senior colleagues with a well-run laboratory who let him do all the post mortems including work with Sir Ludwig Gutmann providing a wealth of material from the spine. There were several colleagues from whom to learn, and as several were German and the Stoke Mandeville library was mostly in German, Trevor learned German and joined the network of experts in this field in London and further afield. However, Gutmann would not allow him to take any of his laboratory’s histology slides to any observer outside Stoke Mandeville. It was one reason why he opted to apply for a post in Oxford, even though he was happy with his home and a growing family in Buckinghamshire, but at weekends he took up gliding and made friends with many experts in that sport.

Ritchie Russell, the neuropathologist, (who disliked Gutmann), the pioneer plastic Surgeon Pemfret Kline and others such as Leo Wolner were all at Stoke Mandeville with their own somewhat isolated units and each like Trevor with the hope of a future in Oxford.

As a postgrad in Oxford became available Alasdair Robb Smith had got in as first as a pathologist in Oxford, monitoring the availability of positions in pathology. There was no neuropathology job, so Trevor took up haematology. This was a very well populated field of experts. There was the Nuffield Professor Leslie Witts, Sheila Calender, Arthur Spurges, Gwyn MacFarlane, Rosemary Biggs, Peggy Pickles, and Janet Vaughan, all internationally famous. In 1963 Trevor became Oxford’s Neuro pathologist. After Morag died from cancer he married Betty Browinel who was an Oxford neuropathology registrar well liked in neuro pathology. She was replaced by Trevor, and moved to bacteriology. Others who left their mark in Oxford by providing neuropathological expertise included Peter Daniels and Peter Oppenheimer. Together with neurosurgeons Cairns, Pennybacker, Wapole, Lewin and John Potter, and neuropathologists Ritchie Russell, John Spalding, Hon Smith and Charles Whitty they became an important and formidable teaching unit for the region and internationally. Trevor proved himself to be of great quality satisfying the requirement for such teaching. Through Charles Whitty who had become chairman of the Medicine Board, Trevor also joined that Board which ran the Medical School for many years. He claimed several members as close friends, including the Vice -Chancellor Rex Richards and Regius Professor of Medicine, Richard Doll. He became Chairman of NPS Pathology and Radiology and eventually had a great role in helping to set up the John Radcliffe as and a member of the Area Health Authority. Such roles indicated a capacity for yet another adventure which was a new largely medically orientated college.

Regius Professor Richard Doll needed reliable and significant experience in colleagues for creation of a new college which was to support pure science and social science and would be welcomed by senior medics. Sir Richard Doll worked hard to find the right mixture and to persuade many that such a college could be initiated. He appointed Trevor as Senior Bursar and in Trevor’s autobiography he writes “From the designated fellows, Richard Doll and I chose to occupy the important offices of the college to join me, now Senior Bursar. Our Vice Warden was Brian Bower and the first Dean Mike Kettlewell. Julian Britton was our first Senior Tutor. “Clearly, he saw himself as having a major role as a creator of the college. He found the opposition of a few senior medical staff “inexcusable.” He describes at some length the difficult planning and cost to the college of providing what the medical students required by having need met both on the new J2 site as well as on the Green College and Radcliffe Infirmary Site. “to meet this request required extensive negotiation with the Oxford Area Health Authority. Fortunately I was a member.” The Chairman of the Authority, Lady McCarthy “hated doctors and medical students”
Obituaries

Professor Christopher Bulstrode CBE 1928 – 2023

A personal view

I first met Chris when he joined the clinical school in Oxford in the 1970s. Bulstrode was never backward in coming forward and was fearless in expressing his views, which could get him into hot water, but he was always stimulating and entertaining. There was considerable noise and laughter if Bulstrode was in the room. His comedic talents came to the fore in the annual Tingwick pantomime. His most infamous escapade was surely masterminding the overnight switching of the traffic signs in Oxford’s temporary one-way system to generate an incapable loop when the system opened on April Fools’ Day.

Bulstrode reappeared in my life when I was a trainee dermatologist. After a spell in Africa, during which he met his first wife, Catherine, Bulstrode had returned to Edinburgh to take his FRCS and start his orthopaedic training. To my great surprise he was interested in venous leg ulcers (an unexpected research field for him) and he had much to contribute. Certainly, he was a keen bird-watcher and encouraged me to take binoculars when I went on a dermatology trip to Kenya—great habit to live on.

We crossed paths again in 1997 at “Educating Consultants”, the course he ran with his partner and later his second wife, Victoria Hunt. Bulstrode was an inspirational tutor and he completely changed my approach to teaching. His ability to communicate with and enthuse clinical teachers was recognised by his appointment as Director of Education by the Royal College of Surgeons of Edinburgh from 2010 to 2012.

Bulstrode with Vicky developed a series of courses for junior doctors, examiners, dentists and the Intercollegiate Boards of Surgery, which the College then commissioned them to run worldwide.

Bulstrode’s contribution to medical education in Oxford was invaluable when the medical school was facing an inspection – the “Subject Review” – by The Quality Assurance Agency for Higher Education (QAA). I had become Director of Clinical Studies in 1999 and I knew that Bulstrode’s energy and enthusiasm for clinical teachers and examiners would help us to prepare. The medical school commissioned Bulstrode and Vicky to provide training courses for our clinical teachers and examiners. These had a major impact on the quality of clinical teaching as demonstrated by the positive feedback we were now collecting routinely from the students.

Eventually some clinical teachers attended one of two courses (UNICON) which continued long after Subject Review had come and gone.

One of our most successful initiatives was a special study module on medical education “MedEd” introduced in 1999 for final-year clinical students. Bulstrode’s module, run with support from Vicky, equipped final-year students with teaching skills. After training, these final-year students introduced the course of history and examination to small groups of new clinical students and, perhaps even more importantly, helped these clinical novices to overcome the challenges of working in a contemporary environment and interacting with consultants. By 2000, all new clinical students had a trained final year “tutor” and mentor. “MedEd” became one of our most popular modules, not only enhancing the experience of new clinical students but also inspiring future generations of young doctors and potential leaders in medical education.

Bulstrode retired in 2010 but continued to surprises. It was clear to Vicky that he needed occupying, so she challenged him to find a new arena in which to practise medicine. The result – he joined the Territorial Army and after the onerous training, aged 56, he was a very mature recruit and he was proud that he was not last over the assault course at Sandhurst. He was deployed as a major to Helmand Province in Afghanistan where he worked for seven months in the field assessing medical and refugee problems. Later he worked with Médecins du Monde (MDM), an international humanitarian organisation providing medical care to populations affected by war, natural disasters, disease, famine, poverty and exclusion. He was sent to Gaza, Haiti and Ukraine and he set up and ran the UK Ebola Hospital in Sierra Leone. In 2016 he was appointed CBE Senator of Medical Education. Commenting on this recognition, he said “Getting involved in humanitarian aid work is the dream for many of us doctors and potential leaders in medical education. Certainly, helping those less well off than ourselves, especially when war or disaster has struck, feels like one of the most useful achievements possible.”

My memories of Bulstrode extend well beyond his professional life. He was a keen bird-watcher and encouraged me to take binoculars when I went on a dermatology trip to Kenya—great advice and fantastic birds. His home in Witley at the top of Witley Flats was fittingly called Witty’s End. Bulstrode had dammed the stream running through the bottom of his garden to create a substantial lake, much to the consternation of his neighbours downstream who were very much concerned about the potential for inundation should the dam fail. A terrifying zip wire (an expired helicopter winch cable) was suspended across the lake between two large trees, to the delight of children and concern of many parents.

Bulstrode died in December 2023 from complications associated with a degenerative neurological condition. He was a true Tigger, a man with a very sharp mind, a quick temper and a large heart. He will be remembered by both his families and by a wide circle of friends and colleagues. His legacy is considerable.

Dr Roger Bodley

“Bulstrode” was a Marmite person who excited emotions of either committed admiring support or frank exasperation.

I first met him through his sister Jane, who was my allocated lab practical partner, and separately through a non-medical group of my friends who were studying Zoology, a subject that Chris had changed from Medicine after he had become fascinated by the way that animals react upon animal impact. He joined a group of excited and talented students, including his first wife Homeywood, who later made their mark on British scientific and medical scene on a spare time seemed to me to be based around planning and analysing exotic sounding survey work they were doing on animals in the Kenyan rift Valley.

He changed back to Medicine and studied the preclinical subjects at Cambridge before coming back to Osler House (now Green Templeton College) for his clinical studies, when I came to know him much better. He was fearless, practically skillful, ingenious and had a particular sense of humour. There was always a wonder as to what the April 1st joke would be.

As well as the traffic vortex he created, one year there was a set of large black cardboard footprints striding up, over and down the Tower of the Winds. In a judgement of Solomon, the Director of Clinical Studies (Michael Dunnill) summoned Chris and said to the effect “Some wretched person has defaced the Tower of the Winds. I don’t know who the idiot was but I do know that you are the only person who can get them down so please would you oblige.”

I came to know him better after I qualified and stayed a couple of times with his very hospitable family in Guernsey, where his father was the radiologist. These contacts were very influential in my subsequent choice of Radiology as a career when the specialty suddenly exploded in the early 1980s.

While I was an orthopaedic SHO at the NOC, he and I built a large glass dome, Blackbrook, their doctors’ residence. Sadly, it didn’t survive a ground loop and I never actually got to try it myself.

After travelling the world, he returned to Britain for Orthopaedic training and became a professor at the NOC. He was a dedicated and skillful teacher who was very interested in and concerned for junior doctors’ welfare – to the point where he became an “inognito” SHO for six months and did a great deal to help resolve the plight of the SHOs – “The Lost Tribes” as he considered them – striving to introduce more organisation and less exploitation in their training programmes.

He went on to develop, with Vicky Hunt, who became his second wife, a superb and very popular teaching skills programme for all levels of health service staff.

I remember discussing what books should go into a library for his family, Anna and Katharine. Anna is the second wife of San Michele, life and the real world. He was upset that the administrators would only consider reimbursing medical textbooks.

Ever restless, he joined the army and did much humanitarian work in many different parts of the world for which he was rewarded with a CBE.

One asked him to tell me who the publisher would be, were he to write his memoirs, so I could buy some shares in the book. I once asked him to tell me who the publisher would be, were he to write his memoirs, so I could buy some shares in the book.

Dr Sue Burge (St Anne’s 1972)

Obituaries: BMJ 2024;384:e133
Dr. Mark Aiden Vincent 1954 – 2024

Mark Vincent was one of the finest, a gentleman who proved courageous in the face of adversity, especially in later years. As an undergraduate he had been selected for the University, a Blue in 1973 and 1975, rowed for Pembroke, and later for Osler House, winning bladers (four bumps) in our 1977 first VIII, and again for the 1980 Doctors VIII. Along the way he enjoyed playing Osler House rugby and stroked our 1976 Oxford Royal Regatta winning “Tin Pot Bowl Four”. Our crew, cox Barbara Ruthton (nee Moursay), Ray Dawes, John Chackwich and me (GRI) recently convened with Mark’s daughter Jessica at the Cherwell Boat House to celebrate Mark and our times on the river. Many will be moved to know that his children honoured his wish that his ashes be scattered from Folly Bridge to float past Pembroke and Osler House boat houses. This deep love of the Thames from nearly 50 years ago emphasises how much our shared water-borne exertions meant to Mark in his prime. Beyond athletic prowess Mark was a natural comedian with twinkling eyes and an infectious smile. Monty Pythons ‘Philosophers Stone’ was a favourite and Brian Gribben may remember Mark’s fine Tingewick impersonation and the Sound of Music’s “My ears are alive with the sound of murmurs…”

Mark and I (GRI) spent our three-month elective (1977) in Kenya at a missionary hospital at Tumu Tumu, north of Nairobi. We were supervised and befriended by a young Canadian physician (later Head of a University-affiliated department of Family Practice) who recalled after Mark’s death how his shared experiences had been life-changing, showing us how to practise good medicine with limited resources. After Tumu Tumu Mark and I travelled to with limited resources. After Tumu Tumu Mark and I travelled to Mombasa back with Mark as Stroke with the “Tin Potter’s” 1976.

In 2009 Mark moved into a Leonard Cheshire Care Home to receive the full care he needed and become a much-loved member of the community there. He did not let his disability hold him back and enjoyed many wheel chair–borne expeditions– holidaying on the Sandringham estate and trips into London to West End shows and exhibitions. One particularly memorable outing saw him climb to the top of the Millenium Dome!

In his later years Mark found delight in the arrival of three grandaughters. Affectionately referred to as “Grandpa Doc,” Ferne, Phoebe and Willa became his new vocation, one to which he was completely devoted. The countless messages of love and remembrance that our family received demonstrated just how well respected and cherished Mark was, as a friend, colleague and physician. Many attending his funeral on a dreary January day wore pink in honour of his love of Pembroke College. An astonishing array of men’s ties was testament to memories of an extraordinary life from his school days at Clifton College in Bristol, to Pembroke College, Oxford, Osler House, and Vincent’s Club, (In recognition of sporting prowess). My father did indeed achieve extraordinary things, with countless stories to tell, some of which his children are only now discovering! He bore his illness with phenomenal resilience, always remaining cheerful and positive. He was and remains an inspiration to us all.

Graeme Rocker, Halifax, Nova Scotia, Canada
Jessica Jacobs (neeVincent), London, England

Reginald Brian Tidy 1930–2024

Brian passed away at the aged of 93, in February 2024. Brian was born in Ilkley in Sussex, his mother Winne was from a farming family, and his father Reg was a local farm technician. They moved to Worcester and he became a chorister in Worcester Cathedral Choir. He left school for a job in the local department of taxation, then did his National Service in the RAF, serving in the HQ of the Middle East forces at Abu Sueir airbase. In 1952 he came to Oxford with his parents, when he played the organ part-time at Nuneham Courtenay and Kidlington, before joining the Cowley St. James Church in April 1954. He little knew that he would be on that organ stool for 65 years.

Brian joined the Oxford University Medical School in 1952 as an Academic Clerk, a job he thoroughly enjoyed, and remained in, until his retirement in 1995. He had a long partnership there with David Messenger – the names Tidy and Messenger lending themselves to a variety of parodies along the lines of the Mister Men – Mr Messy and Mr Untidy. Brian was famous (or perhaps infamous) for a hugely messy desk, with piles upon piles of papers. However, he was always able to find anything he needed in a moment’s notice.

What was particularly noticeable was his kindness, and his ability to handle things calmly, efficiently and with good humour. Many students remember him for his ability to resolve any query they had, offering a helping hand and becoming a linchpin as new undergraduates navigated their way to lectures and placements. Brian’s memory was photographic, and he remembered all the names of his colleagues and students over the years, he has watched many a student with pride as they became notable figures in the Medicine World. In one instance, while receiving his Covid jab in the local desk he was homed to be seen by a doctor and his wife, who had both come out of retirement to assist with the vaccination programme. They had both studied at Oxford together, and they remembered Brian, and he remembered them.

Brian was also a loving father (to David, Mark, Carol, Neil and Gemma) and stepfather (to Helen, Jenny and Chrissy), and took great pride in all the achievements of his children and five grandchildren. He was incredibly supportive, and his positive attitude and huge sense of fun meant childhood for them was an incredibly happy time.

Music was the abiding passion of his life, in particular opera, especially Wagner. He was a regular attendee at the Edinburgh festival, Covent Garden and Sadlers Wells in London, and attended the regional opera company local tours wherever they came. The BBC Proms was also a high point of the year for him, both on the radio/TV and in person. He collected a huge number of autographs and signed records – a familiar figure outside the stage doors after a performance. He always looked for the best in people, and he would always have something complementary to say. He always kept up with the goings on in the world, which made him a very good conversation maker. He had a keen sense of humour and an enjoyment of the ridiculous.

Sadly, his health began to decline during 2023, and in early 2024 he was diagnosed with Alzheimer’s disease with Vascular Dementia. He passed away peacefully in the John Radcliffe on 26 February, following a short illness.

There is so much more that could be said about Brian, he lived a long and fruitful life. He usually charmed anyone he came across with his friendly nature and winning smile. We will all miss him greatly.

Written by his son, David Tidy and daughter, Gemma Jacobs

Many past Oxford Clinical School graduates will recall having been helped by Brian Tidy who worked in the Medical School Office from the 1960s to the late 1990s, located first in the University Museum, Parks Road, then at Osler House, 43 Woodstock Road (Brian was joined there by his son Mark and Gemma), followed by 1A Observatory Street and finally moving in 1979 to its present home in the John Radcliffe Hospital.

Mr David Messenger

Brian was an excellent musician and knew his music. He was a regular conductor of many choirs and was the Director of Music at St Mary’s Church for many years. He also led him to assist with Tynchewycke and other musical activities of the students.

By happy chance, Brian’s father Reg was our Radum Custodian at the Church for many years, the Tidy family made a wonderful contribution to Oxford Medicine.

Sir Chris Paine

Brian Tidy was central to the Clinical Medical School for over 40 years. His role encompassed the whole of the clinical course administration (now undertaken by a team), from admission through to final year examinations and graduation. In a non-digitalised world Brian produced many long handwritten lists of student attachments, course dates and records. His distinctive handwriting can still be found in the current Medical School Office to this day. His knowledge of the course and memory for names and faces was unsurpassed, as was his kindness and support to many cohorts of medical students who were fortunate enough to have met Brian during their undergraduate careers.

Mrs Laura Morgan
Poison Dart Frogs
Professor Sir David Warrell

“Poison dart frogs” from the rain forests of Latin America
Top left: Phyllobates terribilis (Colombia), top right Dendrobates histrionicus (Bahia Solano, Colombia)
Bottom left: Dendrobates tinctorius (Brazil) bottom right Epipedobates tricolor (Bolívar, Ecuador)
(copyright David Warrell)

Skin secretions of the golden dart frog (Phyllobates terribilis family Dendrobatidae) (top left), are used by the Emberá Chocó Amerindians of Antioquia, Colombia, to coat their hunting arrows. Alkaloid batrachotoxins in these secretions are powerful Na+ channel agonists, that protect the frog's skin, its respiratory membrane, from pathogens. Although very few other species of Latin American dendrobatid frog, are used in this way, all are usually referred to as “poison dart frogs”. Most are barely 20–40mm in length, but P. terribilis is a giant at 55mm.