Oxford Medicine

THE MAGAZINE OF THE OXFORD MEDICAL ALUMNI

University of Oxford Alumni

UNIVERSITY OF OXFORD

Summer 2024

Prof Sir John Bell. - 22 Years as Regius

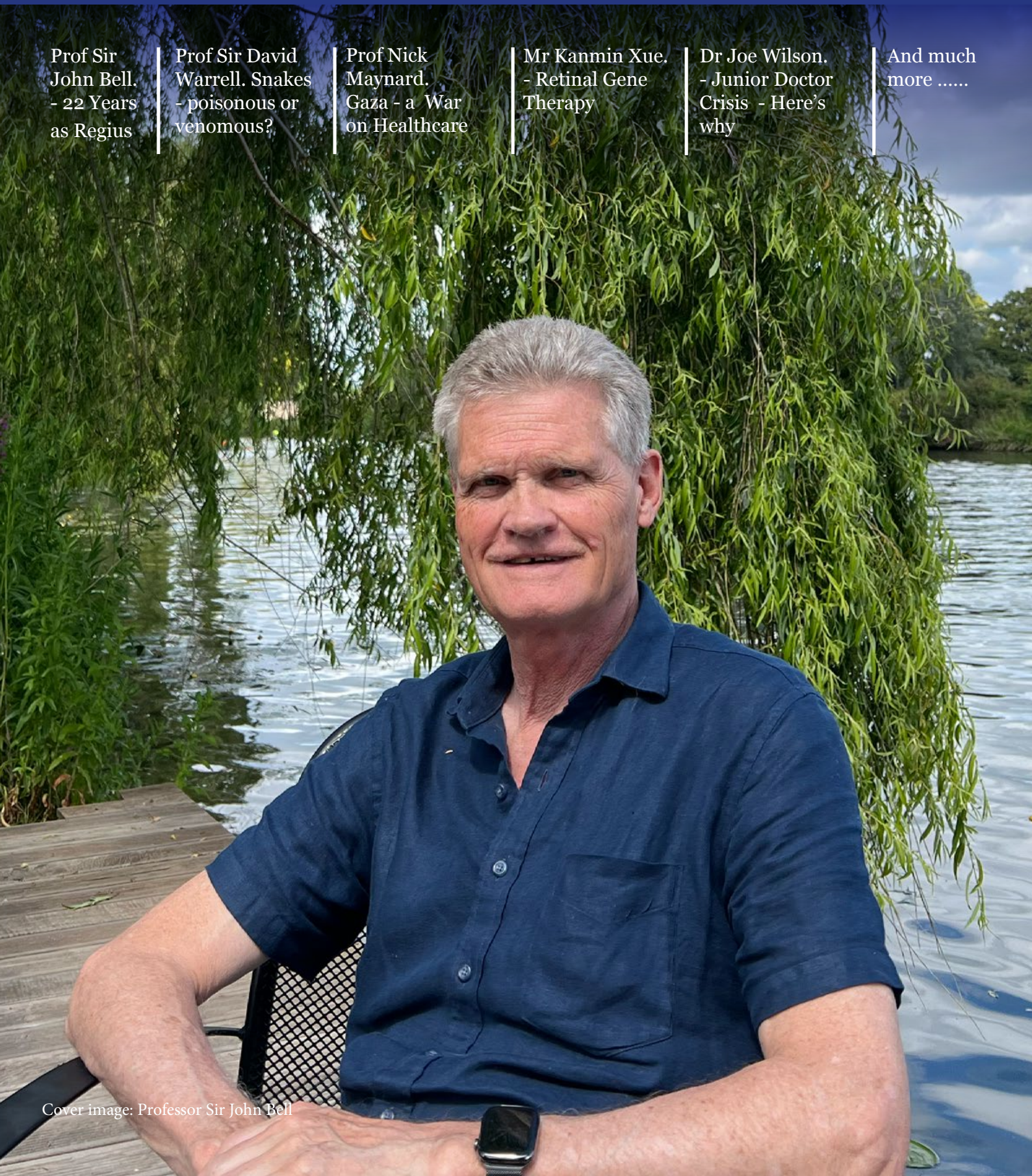
Prof Sir David Warrell. Snakes - poisonous or venomous?

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 Update

OXFORD MEDICAL ALUMNI (OMA) promotes good fellowship amongst graduates from the Oxford Medical School by offering regular meetings for continued learning, exchange of ideas, networking, and socialising.

OXFORD MEDICINE - FUTURE EDITOR

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

Sept 21	**Professor Fergus Gleeson** **Oxford Meeting Minds* - 2024 Osler Lecture** **'Artificial Intelligence and Imaging, running before we can walk?'**
Oct 28	**Professor Lawrence Impey Perinatal Mortality**
Nov 25	**Professor Nick Maynard Gaza – a War on Healthcare**
Dec16	**Dr Prasanna Puwuanarajah** **OMLC Christmas Lecture**

*** Meeting Minds Oxford 2024. website: https://cvent.me/EPrBoD**

Graduation Reunions

The popular graduation reunions are one of the mainstays of OMA activity. Successful reunions require volunteer help from year champions. Dr Shelley Hayles is OMA lead for reunions. Please contact her for information about 2024/2025 graduation reunions. **Shelley.hayles@nhs.net**

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, 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@gmail.com** and we will aim to make a suitable introduction for you.

RECOLLECTING OXFORD MEDICINE

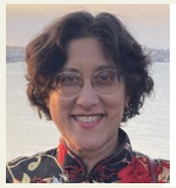
is a unique oral history collection about medicine at Oxford from the 1940s onwards, inspired by Dr Peggy Frith (former President of OMA). Through a series of skilful face-to-face interviews by Dr Derek Hockaday you can listen to this special collection of memories: Recollecting Oxford Medicine Podcast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

Editor: Dr Lyn Williamson, OMA President

Editorial Board: Dr 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



Dr Lyn Williamson
(St Anne's College, 1974)
OMA President

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 you 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 F1's, 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. More bravery in the Congo from where Liz Tissingh sends us a clear and unambiguous message to wake up. 'The tsunami of antimicrobial resistance is a global one and we will only solve it together'.

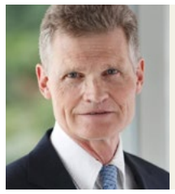
And for all this, we need a habitable planet. Our individual actions are important but really effective changes need to come from large institutions and governments. As doctors, we are a powerful and trusted social group and are well placed to advocate for change. Pulling together in the same direction,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

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

Lyn

Contents

22 Years as Regius



Professor Sir John Irving Bell BE FRS FREng
(Magdalen College 1973)
Regius Professor of Medicine, University of Oxford

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 surgery led by Peter Morris were parked. The University at one level was still confident, some would say complacent, and it was clear that its edge in both 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 afoot, however, and the move to Headington of the major clinical departments led to a recognition by the University that medical science, both clinical and basic, was a substantial component of any successful institution. The Medical School was poised for much greater things. At the time, the Regius was Sir Richard Doll, who had established an impressive population health programme in the University, arguably the strongest in the country. He was followed by Henry Harris from the Dunn School and then David Weatherall, who had pioneered molecular genetics at the University with his fundamental work in single gene disorders. Therefore, the Regius post had always had a key leadership role in the University, taking it to places that it perhaps would not otherwise have gone, but also leading nationally and internationally in some of the most important medical domains. Perhaps the most distinguished of the Regius Professors was a fellow Canadian, William Osler; Osler had done much to change the whole approach to clinical medicine, bringing to it scientific inquiry and experimentation, even though he did not have at

> **"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.**

hand the tools that have moved the field on so impressively today.

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 it 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 could see the importance of understanding the genetic basis of the immune response and how that might influence our susceptibility to a range of autoimmune diseases. However, I also had been exposed to some of the powerful technology that would lead to a molecular revolution in medicine and science; the range of these tools included the newly emerging Sanger sequencing technology and polymerase chain reaction. These

John Radcliffe Hospital.

> **"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.**

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 after 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 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 being 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 multiplicity of 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

> **"The Regius post had always had a key leadership role in the University, taking it to places that it perhaps would not otherwise have gone, but also leading nationally and internationally in some of the most important medical domains.**

Stamford University

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 on the wards; this occupied 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 "firm" 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


Wellcome Centre for Human Genetics.

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


Weatherall Institute of Molecular Medicine.

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

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 biomedical 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 in the Regius job and, although we didn't get it all right, we got 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 flagships 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 success in some of the league tables, for example the Times Higher Education league table, where Oxford medicine has led the world for the last nine years. This could not have been


Ellison Institute of Technology.

achieved without the support of many exceptional scientists, but also exceptional leaders. To be part of this enormous growth has been a real privilege.

Where is the future taking you?

I have now set off down the road to guide the new Ellison Institute of Technology and hope, from that position, we will be able to work in close concert with University scientists attempting to make major progress in health, green energy, global governance and food security. The model there is completely different but should allow us to achieve things that, in a university setting have been difficult to do; hopefully, it will be possible to do this in close collaboration with scientists across the University.

As I look back, I have spent most of my professional career in Oxford and have no regrets. The Regius Chair of Medicine has evolved around those who hold it but has always maintained global significance. I have no doubt my successor will continue that tradition and will make Oxford medicine even stronger.

> **The freedom to expand my horizons allowed me to engage in a variety of national and international programmes.**


John with wife Jenny.

Venomous or Poisonous?
Does it really matter?

Professor Sir David Warrell *(Christ Church 1958)*
Emeritus Professor of Tropical Medicine, University of Oxford. He was formerly Head of the Nuffield Department of Clinical Medicine, founder, in 1979, of the Oxford Tropical Medicine Research Network, and co-founder the Global Snakebite Initiative.

I was arguing with some friends about Agatha Christie's seemingly arbitrary and interchangeable use of the words "venom", "venomed", "poison", "poisonous", and "poisoned" in my favourite Poirot story, "Death in the Clouds" (1935). 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 audible and more familiar cause of sudden death (from anaphylaxis). I was surprised by the great novelist's imprecision. Her training as an apothecary's assistant had given her expert insight into the actions of drugs and poisons. However, my friends retorted: "Aren't you just being pedantic? Does it really matter whether the victim was envenomed or poisoned?"
I would argue that, in some circumstances, this difference might matter.

Some European languages have the same word for venom and poison, and for the verbs to envenom and to poison (German - der Gift, vergifter, Spanish - el veneno, envenenar, Italian - il veleno, avelenato, Russian - яд yad, отравлять otravlyat). Others distinguish venom and poison, but use the same verb for to envenom, and to poison (e.g. French - le venin, le poison, empoisoner; 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 jaws, stingers, spines, or other sharp organs. In the case of spitting cobras and some scorpions and blister beetles, venom spat or 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 can be lethal both by injection, and, at much higher doses, by ingestion; venoms are innocuous when ingested by mouth, providing that there is no breach in the gastrointestinal epithelium. This is because most venom toxins are polypeptides or proteins that are destroyed in the gut lumen by digestive proteinases, are inactivated by gastrointestinal pH, or are unable to penetrate cells.

The lethal potency of almost all chemical compounds taken by mouth is substantially lower than when given by injection. The reason is first-pass metabolism in the liver and other organs that reduces the amount of the toxic compound reaching its targets, and conversion to less toxic metabolites. An exception is chloroform, which is more toxic by ingestion.

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 "dipsades" or "thirst-snakes" (now known to be harmless colubrids, but which were then believed to have a venom that caused intolerable and insatiable 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 fangs 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 dipsas-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 juice of cursèd hebenon in a vial,
And in the porches of my ears did pour
The leperous distilment. . ."

Based on textual and etymological arguments, and the victim's mortal symptoms, David Huxstable (Huxtable RJ. On the nature of Shakespeare's cursed hebona. Perspect Biol Med 1993;36:262—80.) argues that "cursèd hebenon" was spotted hemlock (*Conium maculatum*), the agent of Socrates' judicial execution in 399 BC. Poured into the external auditory meatus, absorption of a lethal dose of its principal neurotoxin, coniine, would have been possible only if the king's tympanic membrane(s) had been perforated, perhaps from chronic otitis media, allowing the "leperous distilment" to trickle down his Eustachean tube to the nasopharynx, to be absorbed from the gastrointestinal tract (Eden AR, Opland J. Bartolommeo Eustachio's De Auditus Organis and the unique murder plot in Shakespeare's Hamlet. N Engl J Med 1982;307:259). Although coniine can be absorbed through the skin, a much larger dose would have been needed than could be accommodated in the king's external ear cavities.

Four poison dart frogs (Dendrobatidae) from the rain forests of Colombia, Ecuador, and Brazil
Top left *Phyllobates terribilis top right Dendrobates histrionicus*
Bottom left *Dendrobates tinctorius bottom right Epipedobates tricolor*
(copyright David Warrell)

Comment: *Claudius should not have assumed that his brother could be fatally poisoned through his ears. Spotted hemlock poisons have restricted bioavailable by this route, unlike aconitine from monkshood (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 Eleanor 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 *Abrus precatorius* which is more than 1,000 times more toxic than ricin from castor oil beans), she might have absorbed a fatal dose.

Comment: *Suction by mouth has proved ineffective in removing various noxious substances from wounds, notable snake venoms, but Queen Eleanor 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 Embará 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 Amapá, 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, pains 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 1986, the official medical diagnosis was more prosaic - hepatic cirrhosis associated with chronic hepatitis B. (Gurgel, Antonio de Pádua. Ruschi: o guardião da floresta. Espirito Santo, Vitória, 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 venoms 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 both venomous, and non-venomous snakes. "Venom" 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 venoms.

Comment: *Bites by venomous snakes would cause local and potentially fatal systemic envenoming, whereas bites by non-venomous species 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 snakes, snakebites, and venoms. 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 water and lipid soluble substances, some poisons; such as aconitine, coniine, 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

David Cranston
Emeritus Associate Professor of Surgery
University of Oxford
Emeritus Fellow Green Templeton College Oxford
Director of Oxford HIFU unit

JC200 Machine from Chongqing China currently in use at the Churchill Hospital.

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 burn at the focal point. This can be done with ultrasound if the usual diagnostic energy is increased 10,000 times. The ultrasound energy is generated under water and the energy passed non invasively into the body to a sharp focus where it destroys tissue.

The goal of HIFU treatment is to raise the temperature of a selected, isolated tissue volume (about the size of a grain of rice) 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 gas and the surrounding tissues. 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, ophthalmology, 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 and 1950s working in Illinois in the United States. Here after initial experiments on cats and monkeys, Frank Fry went on to develop a system for the treatment of patients with Parkinson's disease, ablating the globus pallidus after part of the skull was removed surgically. However this treatment coincided with the introduction of the drug L-dopa, which proved to be a more acceptable treatment for Parkinson's disease than crainiotomy followed by HIFU. The lack of sophisticated technology and imaging techniques restricted the development of HIFU applications at that time.

The 1990's saw the re-emergence of treatment as the technology improved, and China has been at the forefront in its development and clinical use. Over the last twenty years many thousands of patients have been treated in Asia, the largest group being women with uterine fibroids. Implementation in the West has lagged behind, and so clinical use is still in relatively early days. Early research in the UK was performed at the Institute of Cancer Research in Surrey by Professor Gail ter Haar and colleagues, and in 2002, a dedicated HIFU unit was founded in Oxford, after establishing links with China, through Professor Tim Mason, Professor of Ultrasonics at Coventry University. Oxford became the first hospital in the West to have a machine from Chongqing Medical University and the National Engineering Research Centre of Ultrasound there. After completing clinical trials on liver and kidney tumours in Oxford, the Chinese machine received the European CE mark in 2005. James Kennedy was the first HIFU surgical research fellow in Oxford, instrumental in setting up the Oxford programme and now remains in Oxfordshire in his new role of Vicar of St Mary's Church in Chipping Norton. Oxford continues to have a strong relationship with the National Engineering Research Centre of Ultrasound in Chongqing China, and currently has ongoing trials at the Churchill Hospital for the treatment of pancreatic cancer and sarcomas. The National Institute of Clinical Evidence approved ultrasound guided HIFU for the treatment of uterine fibroids in women in 2019, and in 2023 Oxford was designated a Centre of Excellence by the Focused Ultrasound Foundation of the USA.

Dr Paul Lyon, currently associate director of the Oxford HIFU unit, undertook the 'first in man' Tardox study to investigate the safety and feasibility of extracorporeally triggered drug release in oncology. This demonstrated the ability of focused ultrasound to cause non-ablative hyperthermia in tumours in the liver, allowing targeted release of thermally sensitive liposomes containing doxyrubicin within the heated tumour. This led to a two to nine fold increase in drug delivery specifically within the tumour. Further trials are planned in Oxford in the near future trials on advanced renal tumours looking at immunological evidence for a possible abscopal 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 to successfully treat essential tremor and the tremor associated with Parkinson's disease.

Oxford also has a thriving preclinical research programme led by Professors Constantin Coussios, and Eleanor Stride in Biomedical engineering based in the Botnar 3 building on the Nuffield Orthopaedic Hospital campus and they are looking at various further applications including neuromodulation, the opening of the blood brain barrier, and targeted drug delivery of both cytotoxic agents and antibiotics.

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, there will be a new generation of machines which will speed up the treatment and successful non-invasive surgical treatments will become increasingly important in the next decade.

Navigating Health Inequalities in the World of AI-Assisted Healthcare

Hannah Thould
(Exeter College 2009,
Green-Templeton College 2012)
Medical Registrar and Healthcare Service Modelling Associate,
NIHR PenARC

Balancing Healthcare in a digital world. Image generated using AI using Canva

Health inequalities are defined by the NHS as 'unfair and avoidable differences in health across the 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 accessing these 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 ethnicity data, poorly representative of certain populations (e.g. the homeless, LMIC populations, ethnic 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 small minority population. However, before we even get to healthcare, we must acknowledge that the reference data of who's who, often in the form of census data, is itself, biased. It is difficult to know who's missing if we don't know about them to start with.

Unless we set out to deliberately remove our own societal biases from datasets, we risk encoding historic, Western-centric cultural biases into future healthcare. However, as proven by Google's attempts, this is easier said than done (when asked to produce a picture of the American founding fathers, Google Gemini showed an image depicting them as black women).

The systems themselves may induce bias: digital healthcare risks excluding people based on digital literacy or access. We should be wary of creating a two-tier system for the 'haves' and 'have nots' of digital access. Outside the direct influence of medicine, AI plays a role in the spread of misinformation. Increasingly many rely on social media as their primary source of information and AI-generated influencers, deepfakes or the mass perpetuation of information hold the potential to create mass echo chambers, spread misinformation and extend the reach of conspiracy theories to potentially vulnerable users.

AI also has the potential for enormous good in equalising healthcare access. There are already AI algorithms which are producing personalised, optimised appointment times and massively reducing 'did not attend' rates; large language models have the potential to transform access to care for people who speak different languages; and we have already discovered new antibiotics thanks to AI-assisted drug development.

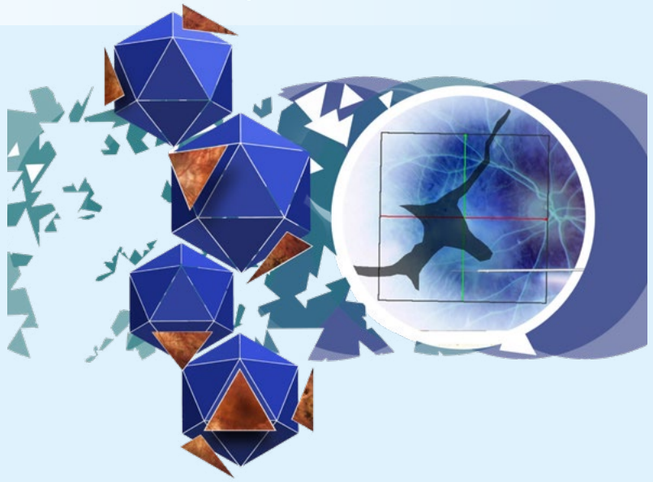
Going forward we should aim to strike a balance of harnessing the benefits of AI in healthcare whilst mitigating its risks and avoiding stifling innovation. By prioritising the curation of health datasets with inclusivity and diversity through representational transparency (clear and detailed reporting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

There is work already in progress. The Medicines and Healthcare products Regulatory Agency (MHRA) is currently reforming its 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 a co-design process alongside regular audit of 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 democratise access to healthcare across the board.

Gene Therapy for Retinal disease

Mr. Kanmin Xue, MA MB BChir PhD FRCOphth *(Brasenose College, 2000)*
Wellcome 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 College, Oxford



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 a thousand 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, ciliary 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 human 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 4.7kb.

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 for choroideremia and X-linked retinitis pigmentosa. In the early exploratory days of retinal gene therapy, there was much debate about the relative merits of intravitreal versus subretinal routes of administration of viral vectors (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].

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

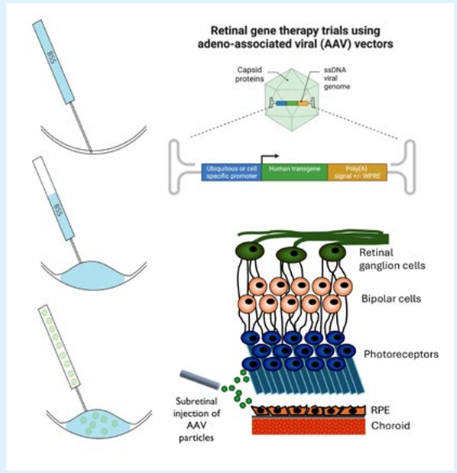


Fig.1. *Retinal gene therapy by subretinal injection of adeno-associated viral (AAV) vectors containing the expression cassette for a therapeutic human transgene. The viral particles transduce the target photoreceptors or retinal pigment epithelial (RPE) cells. The viral genomes form episomes within the cell nuclei, which are separate from the host genome and enable long-term expression of the transgene product in these non-dividing cells.*

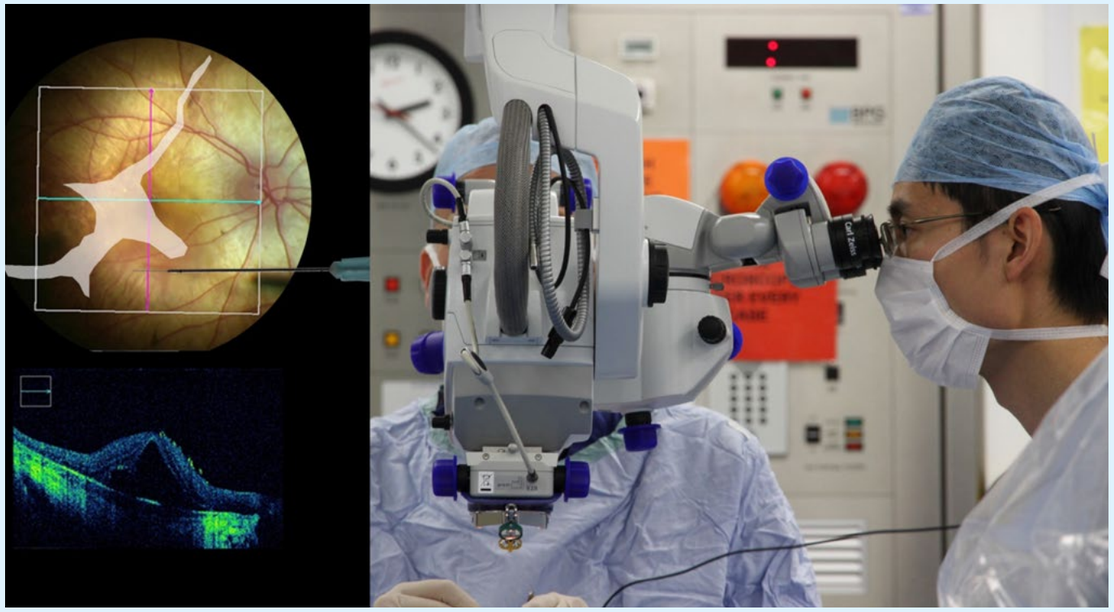


Fig.2. *Administration of retinal gene therapy into the subretinal space. The surgery consists of vitrectomy and subretinal injection of viral vectors through a 41-gauge cannula under the surviving island of photoreceptors (grey shade) in a patient with choroideremia. The precise injection process is guided by live optical coherence tomography (OCT) overlay seen through the microscope eye piece which shows successful iatrogenic detachment of the fovea (bottom left).*

> **"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.**

Subsequently, we extended our approach to X-linked retinitis pigmentosa in a dose-escalation retinal gene therapy trial. One of the most memorable days 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 neparvovec 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. Chiefly, 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

Chandler LC, , et al . Characterizing the cellular immune response to subretinal AAV gene therapy in the murine retina. Mol Ther Methods Clin Dev. 2021;22:52-65.

Cehajic-Kapetanovic J & Xue K, et al Initial results from a first-in-human gene therapy trial on X-linked retinitis pigmentosa caused by mutations in RPGR. Nat Med. 2020;26:354-359.

Xue K, et al . Beneficial effects on vision in patients undergoing retinal gene therapy for choroideremia. Nat Med. 2018;24:1507-1512.

Chandler LC, ,et al Enhancement of Adeno-Associated Virus-Mediated Gene Therapy Using Hydroxychloroquine in Murine and Human Tissues. Mol Ther Methods Clin Dev. 2019;14:77-89.

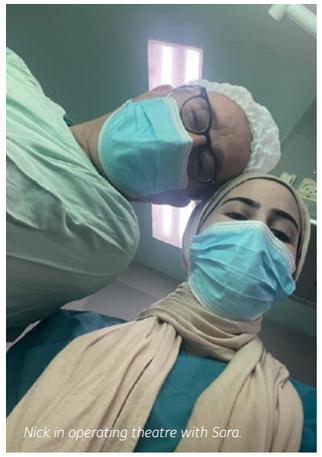
Xue K, et al. Technique of retinal gene therapy: delivery of viral vector into the subretinal space. Eye (Lond). 2017;31:1308-1316.

Gaza - A War on Healthcare

Professor Nick Maynard *(Exeter College 1980)*
Consultant Upper GI Surgeon
Oxford University Hospitals NHS Trust

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 horrifying 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 middle 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 explosive injuries involving the chest and the abdomen, but also some time in the Emergency Department. Al Aqsa Hospital was operating at 3 to 4 times normal capacity, and together with relatives and other Gazans who had been displaced from the north and who had sought refuge in the hospital or grounds, there were nearly 10 000 people there, in a hospital designed for 150. It is impossible to describe the overcrowding - every square foot of the hospital was covered by patients and their relatives, some in beds, most on the ground. I saw appalling injuries, particularly terrible deep burns and multiple traumatic amputations in children, the like of which I would never have expected to see in any health care setting. We had to operate with very limited instruments, suture materials and dressings, there was often no pain relief and antibiotics, and the infective complications we saw were appalling. On some days there was no running water, so we had to "scrub" up using alcohol gel, and on many days, there were no sterile drapes to use whilst operating so we had to make our own from gowns and other materials. 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.



Nick in operating theatre with Sara.

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 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 1 km 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.

Oxford Teaching Team in Gaza.

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 anastomoses leaking, and appalling fistulae developing. I treated many appalling infective complications 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.

Nick with Sara.

Nick in operating theatre Gaza.

I left Gaza via the Rafah crossing on May 6th, 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 rebuild. 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.

Professor Nick Maynard trained at Oxford University, Guy's Hospital, London, and Melbourne, Australia. He is a Consultant Upper GI Surgeon at Oxford University Hospitals NHS Trust, and Associate Professor of Surgery at Oxford University. He set up the Oxford Oesophagogastric Cancer Centre in 1997 and is the Senior Surgeon and Clinical Lead. From 2021 to 2023 he was President of the Association of Upper GI Surgery for Great Britain and Ireland (AUGIS), demitting in September 2023.

Nick first visited Palestine in 2008, and since 2010 he has been visiting Gaza regularly. Each October he leads a group of Oxford Consultants specialising in surgery, medicine, paediatrics, and obstetrics to Gaza to teach medical students from the Islamic University of Gaza and Al Azhar University. Nick also works with Medical Aid for Palestinians (MAP 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. In December 2023 with MAP Nick led the first UK medical mission into Gaza during the current conflict and worked at Al Aqsa Hospital for 2 weeks. He has just returned from his second Emergency Medical Team mission in Gaza, spending 2 weeks at Al Aqsa Hospital from April 20th to May 6th.

Nick joined the Board of Trustees of IMET2000 (International Medical Education Trust) in 2016 and has been Chairman of the Board of Trustees from 2018.

Open tibia fractures in the DRC: a question of justice

Miss Elizabeth K Tissingh, AKC MSc FRCS
Liz is an orthopaedic surgeon with a specialist interest in bone infection working in the Limb Reconstruction Unit at the Royal National Orthopaedic Hospital, Stanmore. She also leads the King's Kongo Central Partnership. She was a fellow in the Oxford Bone Infection Unit in 2022.

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 Kinkanda, in south-west DRC, the cost of treating an open fracture is more the 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 bread winners 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 that everyone, everywhere is able to receive the best care possible, is a matter of equity and justice.

> **"...we are asleep at the wheel. The tsunami of Antimicrobial Resistance (AMR) is a global issue; 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 is 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.

Open tibia fracture treated at the Hôpital Provincial de Référence de Kinkanda with a cardboard splint. photo © EKTissingh

Same patient with external fixator and cast, with window in the cast for wound care.

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 to 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. https://pubmed.ncbi.nlm.nih.gov/38534671/ The tsunami of Antimicrobial Resistance (AMR) is a global issue and we will only solve it together.

Orthopaedic sister Maman Chantal on the orthopaedic ward at Hôpital Provincial de Référence de Kinkanda with a patient. Photo © Zeke du Plessis

> **"We must find ways to support those like Maman Chantal who work in challenging environments.**

Initiatives for Action

Two initiatives I am involved in work to do just that: King's Global Health Partnerships (KGHP) and the African Bone and Joint Infection Network (ABJIN). KGHP works with health facilities, academic institutions and governments to strengthen health systems and improve the quality of care in five countries: Somaliland, Sierra Leone, the DRC, Zambia and The Gambia. In the DRC, the work has a particular focus on injury care. It is a country with immense wealth and beauty but enormous challenges due to ongoing conflict, poor governance and the legacy of colonialism. Our Safe surgery programme is working to improve surgical care (particularly for injuries like open tibia fractures) and working to develop a national quality of care strategy.

ABJIN is a new multidisciplinary group that connects clinicians to share best practice, is developing context appropriate guidelines and will be a vehicle for teaching resources and training. It has been established with broad representation from across Africa and with the support of the European Bone and Joint Infection Society (EBJIS) and the AO Alliance. It will be formally launched at the December meeting of the College of Surgeons of East Central and Southern Africa (COSECSA).

A particular area of focus for ABJIN is the management of fracture related infection (FRI). FRI is one of the most devastating sequalae of poorly managed open fractures. It is resource intensive to manage and requires close multidisciplinary working between orthopaedic surgeons, plastic surgeons and microbiologists. As the number of injuries worldwide increase, we will continue to see increasing numbers of FRI cases that need considered management to ensure good outcomes for individual patients and to prevent huge societal impacts, including antimicrobial resistance from inappropriate antibiotic use.

Ellen McCourt , ED consultant volunteer with KGHP , teaching a research methodology class at the Universite Joseph Kasa Vubu, Boma, DRC.

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 involve a cardboard splint. We must find ways to support those like Maman Chantal who work in challenging environments. Failure to find these ways is an injustice to us all.

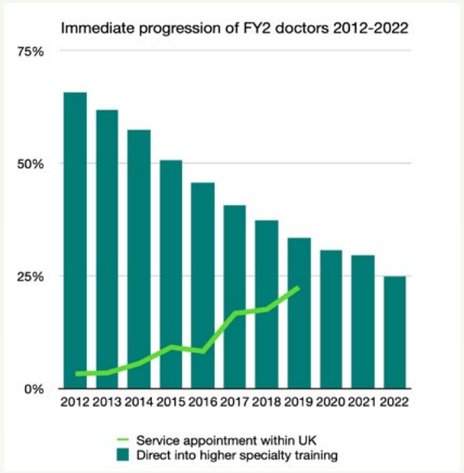
King's Global Health Partnerships: www.kcl.ac.uk/kghp

Doctors do not want to go into training anymore: here's why

Dr Joe Wilson
Oriel College (Matriculated 2016)
Academic FY2, King's College Hospital. Currently researching immunometablolism in liver failure in the institute for liver studies. Joe is keen to pursue a career in critical care and anaesthetics with an academic focus on immunology and inflammation in major trauma and organ failure.

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



UK Foundation Programme 2019 F2 Career Destinations Survey GMC: Education Data Tool, F2 recruitment into specialty visualisation v. 24/10/2023.

These data signify an enormous shift in the outlook of today's young doctors. Those 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 similarly declined. Sadly, this is not the case. Applications for core training outstrip available posts more than ever. Applications per post have risen from 1.88 in 2016, to 3.37 in 2023, an increase of almost 80%. In some pathways such as anaesthesia and core 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 consistently 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 multiyear positions in cardiology offering PhD and CESR application support [(4)]. 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 so poor. Healthcare and training is changing. I worry that when, or if, I become a consultant, I will have fewer colleagues, and we will be of diminished quality to those who came before us.

Sources:

1. UK Foundation Programme 2019 F2 Career Destinations Survey
2. Tomas Ferreira, Escalating competition in NHS: implications for healthcare quality and workforce sustainability, Postgraduate Medical Journal, 2024
3. GMC: Specialist applications and certificates statistics
4. http://www.cardionewsuk.org/imperial-college-healthcare-advertise-new-fellowship-position/

Why is it so hard?

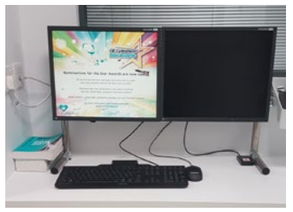
Dr Robert Allcock *(Green College, 1989)*
Consultant Chest Physician, Great Western Hospital, and former Chief Clinical Information Officer

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 their problems have been fixed, patients return to life outside. We all want this 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 strategies. 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.



Computer workstations in use in clinical areas – Queen Elizabeth Hospital Gateshead.

Doctors' roles may include manual tasks: operations and procedures require specialist skills. But diagnosis, treatment, communication, record keeping and handing 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.

Computer workstations in use in clinical areas – Queen Elizabeth Hospital Gateshead.

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 computers 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 myriad information in a new case, larger screen and desktop space (for associated old paper records) enables 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 treated as a high-risk novelty in another?

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**

Two fast deliveries and a bouncer

David Burge (*Pembroke 1967*)
Retired Paediatric surgeon

After qualifying in 1974 I was pre-reg House Physician to the Badenock/Hockaday firm. One day when I was on call (1:2 in those days) Derek Hockaday admitted a woman who was 36 weeks pregnant to the Private ward at the Radcliffe 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 that 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 perineum 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 the patient had confirmed his diagnosis on admission and was promptly discharged.

I hope these experiences are of interest.

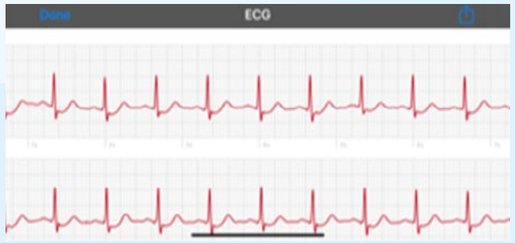
Neil Gibbons
University College 1974
Retired General Practitioner

Yet another Benefit of the Apple

Doctors are renowned for self-diagnosis, even if sometimes with misjudged 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 on my iPhone which gave me minute by minute readings. This led me to buying my new electronic gadget, an Apple Watch, which communicated with my phone to show the glucose in a less obvious way than opening up the phone.

This leads me to reveal how I tapped into the watch's resources to diagnose that 'back of the throat tightness upon exertion after a heavy meal'. The watch has an ECG facility to monitor for AF, and the QRS complexes are startlingly clear. Thus I interrogated this on pushing myself up a hill, and sure enough ST depression was evident, coincidental with my symptoms. A coronary angiogram a month later confirmed the diagnosis.

Although Apple doesn't promote the ECG facility for this purpose, it might be worth checking your own Smart Watch if you're wondering about your health.



Tracing from Smart watch showing ST depression

Tom Hyde (*St George's 1987*),
Steve Ramcharitar (*Linacre 1988, SEH 1993*)

Consultant Cardiologists, Great Western Hospital, Swindon.

My Smart watch saved my life – reply to ed 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)

Figure 1a *Apple ECG following symptoms.*

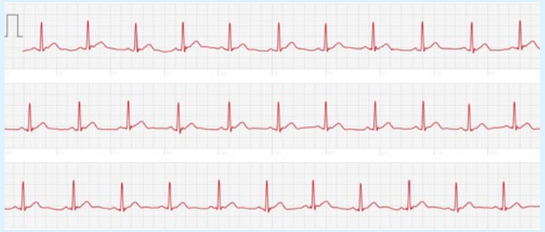


Figure 1b *Apple ECG at baseline*

Interestingly, a year previously he was evaluated for breathlessness while cycling and had an exercise tolerance test (image 2 showing some minor ST flattening but a CT coronary angiogram only showed soft plaque in the LAD which was eccentric at the level of a large diagonal branch and a small amount of calcium just distal to this. Evaluation of the flow using CT FFR algorithm a computer post processing software was reassuring showing no restriction (>0.80 normal) (figure 2). Blood tests showed a healthy lipid profile with no other obvious metabolic abnormalities.

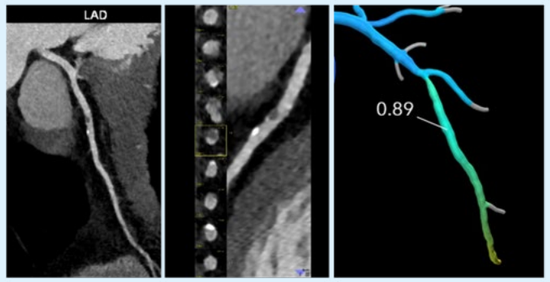


Figure 2 *CT evaluation 1 year prior to presentation)*

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.

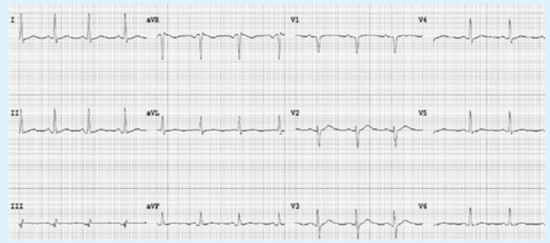


Figure 3a *Resting ECG*

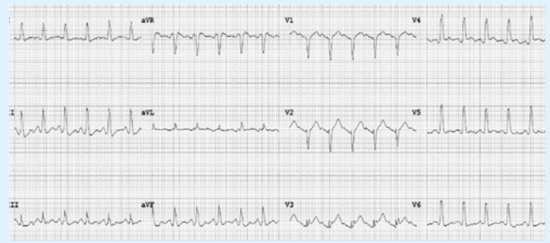


Figure 3b *Peak Exercise ECG*

Invasive angiography showed a critical LAD bifurcated stenosis with restricted flow (TIMI 2) which was successfully stented (Images 4a-c).

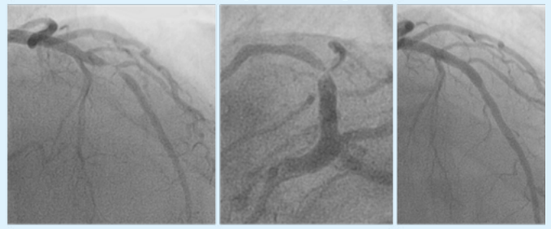


Figure 4a/b *diagnostic coronary angiogram,* **Figure 4c** *post stent.*

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 in 6 lead ECG machine eg Alivecor (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.

F1 Predictions: Three new therapies

Leasha John *(Oriel College, 2017)*
F1 in Psychiatry, Great Western Hospital, Swindon

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 increasing laden with health monitoring technology - step count, sleep pattern, cardiac rhythm, SpO2. These devices are now being introduced into the mental health space for both diagnosis and symptom monitoring.

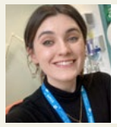
Ahmed et al (2023) completed a systematic review into the budding use of **wearable devices in the assessment of anxiety and depression.** They explain how studies are using the information gathered from these devices to infer lifestyle habits i.e., sleep, activity levels, work-rest balance (all of which 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.

Whilst this all initially feels like a lovely breath of fresh air, the implications of this constant monitoring start to sour the taste. Will energy drink companies direct advertising towards those with poor sleep scores? Will insurance companies start targeting the chronically stressed with higher premiums? Will artificial intelligence start diagnosing movement disorders in the community? The latter has already begun with Schalkamp et al (2023) providing evidence of machine-learning models detecting prodromal Parkinson's disease via data collected through smart watches. We can only hope that by blurring the line between a commercially available product and therapeutic monitoring that we don't lose sight of the ultimate aim; to improve healthcare outcomes for all.

References from author **Leasha.john1@nhs.net**

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 assigned to either having immunotherapy monotherapy (pembrolizumab) or the vaccine alongside pembrolizumab after stage 3-4 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.



Dr Elizabeth Hatton
(St Catherine's College, 2017)
F1 Great Western Hospital, Swindon

CRISPR/Cas9 gene editing technology to treat Sickle Cell Disease

Sickle cell disease (SCD) is a ß-haemoglobinopathy- a blood disorder characterised by production of defective haemoglobin. In SCD, single point mutations in the ß-globin gene result in haemoglobin S (HbS) production, rather than normal adult haemoglobin. 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. Recently, 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 crisis is greatly reduced.

A phase III clinical trial published in April 2024 demonstrated that 97% of participants experienced 12 months free of vaso-occlusive crisis, and 100% of participants were free from hospitalisations over this period. A safety profile similar to myeloablative 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.

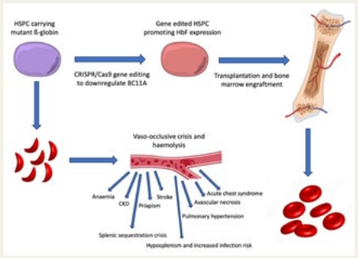


Figure 1. *Overview of pathophysiology of sickle cell disease and use of gene therapy to promote healthy red blood cell production. Diagram by EH*

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.

Not All Who Wander Are Lost

A Return to Zambia

Shelley Hayles *(St Hilda's 1987)*
General Practitioner Oxford

> ***"Fathers have the right to come to the head of the queue. . . at odds with girl empowerment and womens rights***

I was born in Northern Rhodesia and last October, 66 years to the day, I touched down on the now Zambian soil in Livingstone 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 capitol, 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 was collected by the Dutch AI manager, Sander, in a typical African jalopy 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 a communal outdoor seating hut 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 Ellie 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 project to get the building started. However, the funding fell away with a new CEO, so the building stands as a weird piece of modern art, with no purpose, and a grim reminder of a malfunctioning infrastructure in this country.

Young mothers come early to baby clinic and form a long snake of a queue (in the rising 38oC heat) with babies of all sizes and temperaments, until there are 30 or 40 people waiting. Mothers clutch their blue and pink centile charts (identical to ours) to have their babies measured.

Made obsolete in England years ago, due to their notorious inaccuracy, the spring balance weighing scale hangs from a wobbly wooden structure reminiscent of a hangman's scaffold.

The scales are so obviously broken that after several pointless attempts to make them work, I cross the dusty courtyard to see the caretaker. The conversation stops abruptly as this Mzungu (Bantu for white person) appears in the packed office doorway and asks for a replacement.

Hung from mothers' backs, in colourful chitenge cloth wraps, 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 theirs is a large weight gain.

Apparently, the Zambian department of health has issued an edict that should they come to any health checks or clinics, fathers have the right to come to the head of the queue, in order to encourage them to become more 'responsible' and to 'participate' in family life. This seems slightly at odds with all the work that is going on with girl empowerment and women's rights here. Someone, I suspect, has not thought this one through at the Ministry of Health.

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 rusty 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 board. She is dealing with a very large group of post-natal mothers, but we have to go through the mandatory ritual of polite introductions. Sister is most pleased at the offer, and with senior approval, we confiscate the board to try and make it slightly safer for tiny wriggling children.

Full of contradictions and struggling to come into the 21st century, Africa is still amazing.

The Journeys of David Bear

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

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 ostectomy, which removed an infected or damaged femoral head, usually as a result of tuberculosis 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.

David Bear and his clinical notes issued by Wingfield-Morris Orthopaedic Hospital and Professor Girdlestone in 1947. Hospital records of 4.5.47 state admitted to Sturges Ward under Mr. Girdlestone as Emergency and indicate that patient "while climbing a tree in search of honey, slipped and after bouncing three times, fell with body on gorse bush and leg firmly fixed in weasel hole." Further "Patient has a speech defect and can only grunt but is cuddly and affectionate".

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 nevertheless factual attempt to diagnose David Bear (c 1918 German Steiff bear) and to show her David's course through her treatment. The bear went missing for decades and was purchased at a charity auction in Australia by RDS. The collage then travelled back to the Oxford by way of Melbourne to Bergen, Norway (where it was briefly misplaced by the airline) and finally back home to the Nuffield Orthopaedic Centre in 2017. This little bear had a diagnosis of osteomyelitis. When he returned, he found a very different world of orthopaedics, and indeed health service from that of 1947.

Osteomyelitis is a devastating disorder of infection of bone generally occurring in children with open physes, though it can occur in immunocompromised adults. Nowadays the most common organism is staph aureus. But 1947 it was tuberculosis.

The outdoors treatment in the snow....

..... and in the rain. During this era, it was thought that patients recovered better outside in the fresh air.

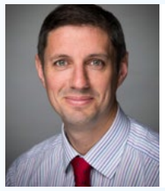
Children were kept on bedrest, away from their families, for months and sometime years. They were nursed outdoors, even in the snow! (figure 2 Children with Spinal Tuberculosis nursed outdoors, even in the snow). The Girdlestone procedure, first described in 1943, is a femoral head ostectomy, which removed an infected or damaged femoral head, usually as a result of tuberculosis 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.

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. Collaboration between manufacturers, biomaterial scientists and biomechanical engineers have led to enormous changes in implantable devices and patients who undergo this surgery can confidently expect that their joints will not wear out in 25 years.

Fracture treatment has been revolutionised by techniques of open reduction and internal fixation and intramedullary nailing, and the days of patients spending 3 months in traction following long bone fractures have completely disappeared. New techniques to lengthen long bones with external wire fixation and correction of deformity are now commonplace. Bone and soft tissue sarcomas, once uniformally fatal, can now be managed with adjuvant chemotherapy and limb sparing surgery. The advent of 3D-printing devices has enabled orthopaedic surgeons to reconstruct limbs with components that are personalised to the patient's anatomy.

Advances in the treatment of Periprosthetic Joint Infection (PJI)



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

The focus on research established by Professor Girdlestone continues to the present day, but with a greatly increased consultant body and hugely expanded Nuffield Department of Orthopaedics, Rheumatolgy and Musculoskeletal Sciences (NDORMS). The aging population, with increased co-morbidities, coupled with a high prevalence of joint replacement results in periprosthetic joint infection (PJI) continuing to be a considerable problem.

PJI has a high level of morbidity and mortality and is exceptionally costly to the NHS. 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 arthroplasty 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 resoprtion. 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.*

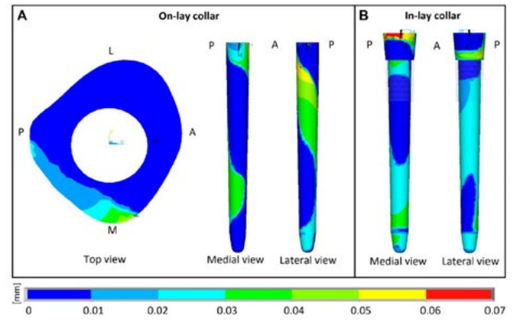


Fig 2. *Finite element analysis was utilised to optimise the design of the collar, with significantly increased areas of bone growth as reduction in areas if bone resorption.*

Treatment of PJI has also been augmented at the NOC by use of the latest antibiotic carriers. The first method is a defensive antibacterial coating (DAC) as an applied hydrogel with a chosen antibiotic added as guided by the sensitivity spectrum of the pathogenic organism. The second method is highly refined calcium sulphate beads that, due to normothermic curing, can have most antibiotics added and then elute them over the next three to six weeks as the beads dissolve entirely (Stimulan). The NOC now has the largest known series of cases using Stimulan with over 1300 patients treated.

In combination with the infectious diseases physicians based at the NOC's bone infection unit (BIU), there is now an extensive research programme aimed at improving the diagnosis and treatment of PJI.

Fig 3. *Cross section of a retrieved collar demonstrating the amount of bone in-growth throughout the porous structure.*

As well as PJI research the NOC continues to expand in new research areas, including several un-related to orthopaedics. There are several collaborations with teams from haematology in the Nuffield Department of Medicine (NDM) and neurology in the Nuffield Department of Clinical Neurosciences (NDCN) by providing stem cells obtained during primary arthroplasty to look at pathologies as diverse as leukaemia and autoimmune encephalitis.

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 Brookes University*

Hopefully, nearly all doctors enter the profession to become carers or curers (or both). A very small number transform to become killers; or possibly the medical profession attracts some people who have a pathological interest in controlling the thin line between life and death. A few doctors have become serial killers, although the vast majority of healthcare serial killers are nurses, whereas others have misused their medical knowledge to murder their spouses. This review examines how the choice of poisons and drugs has changed over the last two centuries, focussing on some of the more notorious examples where medical doctors have murdered their spouse.

The motives of the perpetrators varied, but common reasons included lucrative financial gain (from an inheritance or life insurance policy on the victim) or the involvement of a mistress (the convicted medical murderers are largely male). Doctors are in a privileged position, and their specialist knowledge, access to medicines and informed attempts to avoid suspicion may make medical murderers difficult to detect.

The 19th Century: a heyday for poisoners

Poison was considered one of the simplest and most effective ways to commit a murder and became an epidemic 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 relatively easy. While arsenic was preferred by most poisoners, it appears to have been least selected by medical professionals. Several murders perpetrated by doctors used other poisons, perhaps because they had easier access and believed they would not be suspected of wrongdoing. Devious behaviour, using their professional knowledge and status, allowed some medical murderers to try and avoid suspicion, not always with success. Aconitine, an alkaloid from the Aconitum plant, was used as a medicine in the 19th century. At low doses, it has analgesic, antipyretic and local anaesthetic effects but is highly toxic and has a narrow therapeutic index, producing cardiotoxicity and neurotoxicity.

This was the method used by Dr. Alfred Warder to murder his third wife Helen in Brighton, in 1866. Warder was a lecturer in medical jurisprudence at St George's medical school in London, so would have had expert knowledge on poisons. Aconitine was also used by Dr. George Lamson: to fund his morphine addiction he murdered his brother-in-law Percy, to gain control of family assets. He was convicted at the Old Bailey andhanged at Wandsworth Prison.

Hawley Harvey Crippen and Ethel Le Neve, on trial at the Old Bailey.

Strychnine, from seeds of the plant Strychnos nux vomica, has been used primarily as a rodenticide. Its use is now restricted by law and it has largely been replaced by safer alternatives. Strychnine has profound and rapid toxic effects: it is a potent convulsant, leading to death from asphyxia.

Dr. William Palmer, known as the Rugeley Poisoner, was convicted of murder in one of the most notorious cases of the 19th century. His trial at the Old Bailey – the first in the U.K. for murder by strychnine – attracted huge public interest. The first of several suspicious deaths connected to Palmer was that of his mother-in-law, followed by the deaths of his wife and brother in 1854 and 1855. Eventually he was arrested and tried for the murder of his racing crony John Cook, where there was the strongest evidence. He was convicted and hanged in 1856. Dr Thomas Cream was another infamous serial medical murderer who used strychnine. Between 1877 and 1892 he murdered at least five women, mainly prostitutes.

In Europe, the widespread use of rodenticides proved especially dangerous because they often contained arsenic, strychnine, or phosphorus, which was also used in the manufacture of matches, fireworks, fertilisers, and rodenticides. Phosphorus is a potent hepatotoxin and death results from acute liver failure.

> *"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 from 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. case in Glasgow, in 1865, when Dr. Edward Pritchard was convicted of poisoning his wife and mother-in-law. His was the last public hanging in Scotland. From 1868, following a Royal Commission report, all executions in Great Britain were carried out in prison. 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 his wife in 1891 with a morphine overdose in the form of her sleeping pills. Suspicion of Harris had arisen partly on the observation of his wife's pinpoint pupils, a clinical feature of opiate administration all doctors are aware of.

A year later, Dr. Robert Buchanan, who had poured scorn on Harris' 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

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 first three wives for lucrative inheritances. His undoing came when he poisoned his fourth wife with morphine, 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 anticholinergic

drug hyoscine was used by Dr. Hawley Crippen to murder his wife in London, in 1910, before he dismembered her and hid her body in the cellar. This notorious case was the first to use Marconi's wireless telegram to apprehend a criminal, as both Crippen and his mistress were making their escape by liner to Canada. He was convicted at the Old Bailey and hanged at Pentonville Prison.

Anaesthetist Dr. Carl Coppolino killed his wife in Florida, in 1965, with a lethal dose of succinylcholine, a muscle relaxant used during anaesthesia.

21st Century methods: more subtle attempts to avoid detection

The last twenty years have seen doctors using new and old products to poison their victims, often with increasingly sophisticated attempts to disguise the method.

Insulin has long been favoured as a murder weapon by healthcare professionals: once considered the perfect crime due to lack of toxicology evidence, insulin could not be accurately measured until the invention of immunoassay in 1960. The toxicology remains challenging, not least due to rapid haemolysis of insulin in blood, although it can be detected in vitreous humour for a few days after death.

These difficulties were reflected in the 2016 case of Sydney GP Dr. Brian Crickitt who killed his wife with a lethal injection of insulin so that he could claim her life insurance and start a new life with his mistress. No traces of insulin were found in Mrs Crickitt's body, but circumstantial evidence was deemed strong enough for a conviction. Crickitt had viewed webpages outlining the dose required for a lethal injection, and written a prescription for fast-acting insulin under another patient's name. Despite the lack of post-mortem evidence, his appeal also failed.

Cocktails of drugs have also been used more recently, sometimes to mimic symptoms of a disease or make the death appear to be accidental. Dr. Colin Bouwer, a psychiatrist in New Zealand, was convicted of murdering his third wife in 2001, having drugged her with a combination of sedatives and hypoglycaemia-inducing drugs, including insulin, obtained with forged prescriptions.

In the USA, Dr. Martin MacNeill was convicted of murdering his wife in 2007. He drugged her with analgesics, diazepam and 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 by doctors.

Dr. Yazeed Essa was convicted in Ohio, in 2010, of killing his wife with calcium capsules (ostensibly to prevent osteoporosis) emptied and refilled with cyanide. Cyanide was also the murder weapon used by Dr. Robert Ferrante, a medical researcher in neuroscience at the University of Pittsburgh. In 2013 he suggested that his neurologist wife take creatine as a supplement to improve fertility, but gave her cyanide instead. Both were given life sentences without parole.

A 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 since been made and in 2023 a re-trial was ordered.

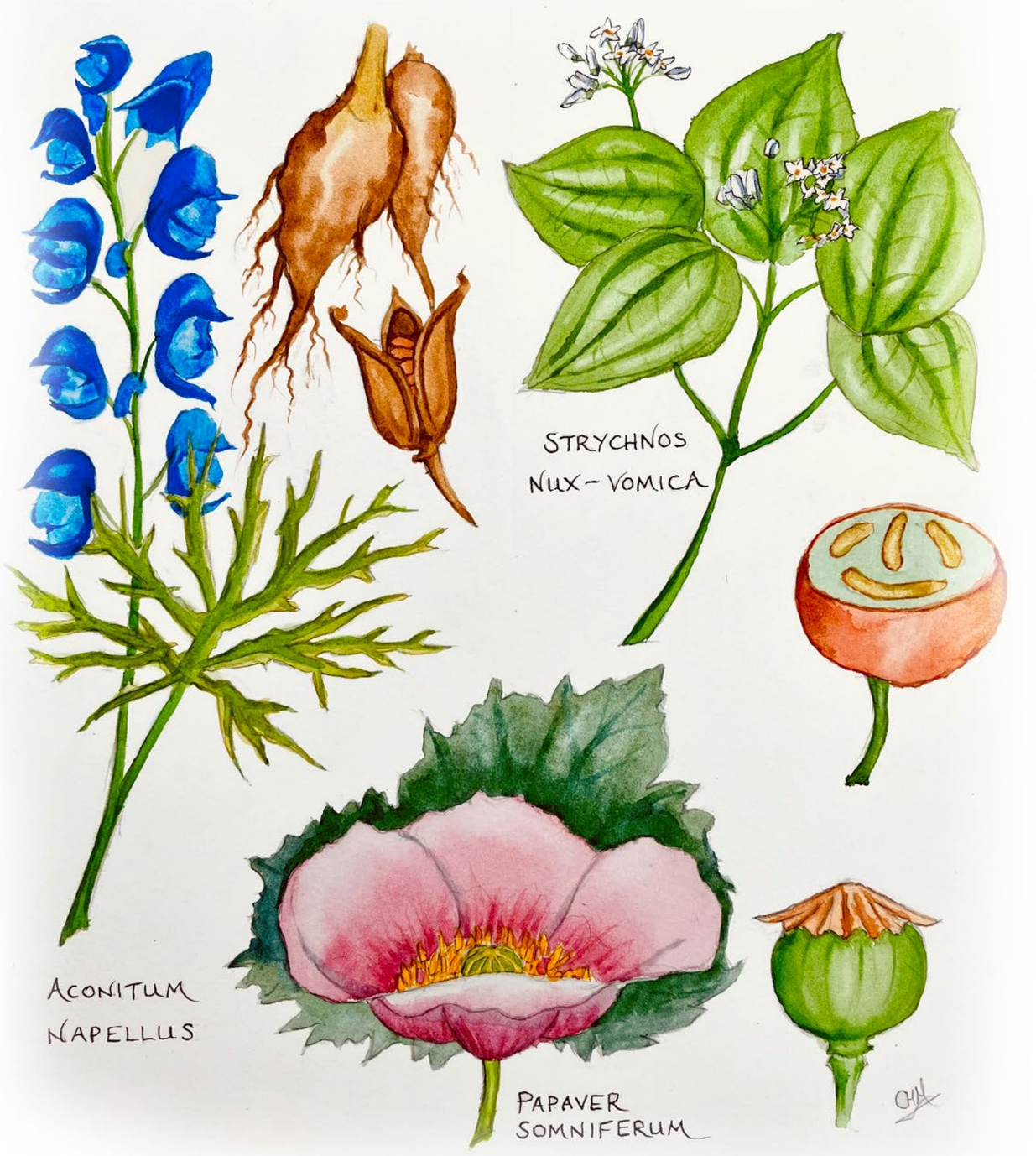
Conclusions

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 about subsequent centuries – were women 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**



Watercolour Illustration by:
Dr Chris Mason *(Worcester College 1977)*
Retired Consultant Histopathologist, Exeter.

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.

OMLC 2024 Lecture Series

John Morris
Emeritus Professor of Human Anatomy,
Emeritus Fellow of St Hugh's College,
Oxford Acting Secretary OMLC

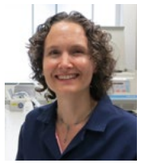
The Oxford Medical Lecture Club series of monthly lectures are mostly held at St Hugh's College, Oxford and are made available on line. Alumni who wish to receive information about future OMLC lectures should contact **john.morris@dpag.ox.ac.uk** to be added to the mailing list.

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 craniotomy in awake 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 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 Catherine's College, Oxford. Her research focuses on gut brain connections and transporters involved in the regulation of glucose homeo-stasis, 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.

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 and atypical TIAs?'

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.

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.

What exactly is Long Covid?
May 27th 2024

Charles Bangham MRCP, FRC Path, F Med Sci, FRS

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?

Future 2024 lectures:

Meeting ID 993 5688 8975; Passcode 886561
(for all OMLC lectures)

June 24	Professor Ben Goldacre	**From Bad Science to Better Data**
Sept 21	Professor Fergus Gleeson	**Oxford Meeting Minds - 2024 Osler Lecture 'Artificial Intelligence and Imaging, running before we can walk?'**
Oct 28	Professor Lawrence Impey	**Perinatal Mortality**
Nov 25	Professor Nick Maynard	**Gaza – a War on Healthcare**
Dec16	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.

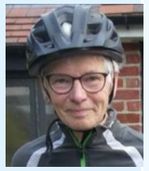
Honours, Awards and Congratulations

Oxford Medical People in the 2024 New Years Honours List

Professor Molly Morag Stevens, John Black Professor of Bionanoscience, 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 OCCTOPUS 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 'chickling' surgeons, develop into proper, 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 Cyclox, the cycle campaign group for Oxford, and was chair of the Bikeability Trust from 2017 to 2023. 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 that this emphasises 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 democratisation 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 "TIMEs 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 "I [got] 3,000 papers published last year without picking up a pen."

Dr Ashwin Jainarayanan has been awarded a prestigious 2024 Schmidt Science Fellowship (https://schmidtsciencefellows.org/). Described as a dynamo by his 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 common (5 per 100,000 per year) malignancy.

Dr Rachel Clarke wrote the book, and co-wrote, with another Oxford Medic **Prasanna Puwanarajah** (and a non-Oxford Medic Jed Mercurio) the screenplay for Breathless, this years' 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 hellish 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."

News of Trials of Vaccines 'Nipah Virus' and 'LungVax'

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 Clinical Tropical Medicine and Global Health in 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."

The University of Oxford, the Francis Crick Institute and University College London have been granted funding to develop a lung cancer vaccine. Developed by scientists from the University of Oxford, the Francis Crick Institute and University College London, the **'LungVax'** vaccine uses technology similar to the highly successful Oxford/AstraZeneca COVID-19 vaccine. Tim Elliott, Kidani Professor of Immuno-oncology at the University of Oxford, and research lead for the project said: 'This research could deliver an off-the-shelf vaccine based on Oxford's vaccine technology, which proved itself in the COVID-19 pandemic. If we can replicate the kind of success seen in trials during the pandemic, we could save the lives of tens of thousands of people every year in the UK alone.'

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 Upthegrove, MBE *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*

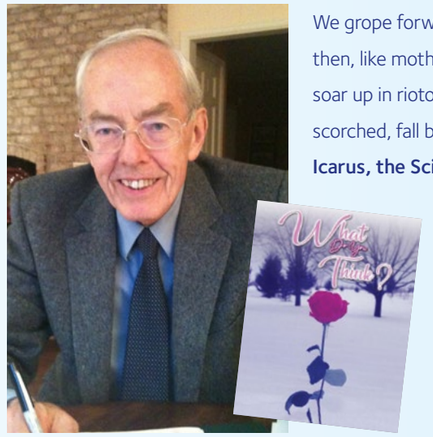
What do You Think?

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

Comments on 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, thank you for your intellectual generosity.'

'This is a collection of poems that, as the title indicates, are meant to be provocative. Some are dark, some are bright, some are about the past, present and future, and some are reflections on relationships, science, medicine, politics, religion, and philosophy. Despite this diversity of topics, the poems are beautifully 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
scorched, fall back into the night.
Icarus, the Scientist

About Oxford Medicine's News, Awards and Congratulations:
The alert will note that the news, as above, is culled from press releases or department internet sites or the official government honours list. We feel there may be many more honourable achievements, awards and news concerning Oxford medical people that will pass us by unless we are alerted, by email, phone call or letter.

Flash Back

Dr Lyn Williamson
(on behalf of 1977-1980 Graduates) (St Anne's 1974)
Hon Consultant Rheumatologist, Great Western Hospital, Swindon. OMA President

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 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.

May 17th 2024 – Jewel Bennett's report reassures us that 46 years on, (thanks to generous anonymous alumni donations), the clinical students have a new nurturing Osler House. During the evening of garden party, held on the site of so many previous fabulous Osler Parties, Osler Balls and the infamous Brompton Cocktail Parties, I was captivated again by the buildings, the gardens and the wonderful students. Complete acceptance finally arrived.

1. Alastair Buchan and P H Brown - move that Mini! **2.** Osler House Garden **3.** The Great JGGL has done his best **4.** Lockers - ironic label **5.** Jam Butties, Tea Coffee and Squash - always available **6.** Bar footie, pool and darts **7.** In converstation with the gardener **8.** Recovery drinks after rowing **9.** The Epicentre - The Bar -. Not Mr Gabbitas nor Mr White **10.** Pathology specimens for teaching and exams **11.** Tower of the winds with 70's cars **12.** A young squash playing Chris Winearls **13.** Canteen menu with date

Flash Forward

A Flash of Inspiration - Da Vinci's Day Out

Annabelle Bath *(Magdalen 2020)*
Year 2 Preclinical Student

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 life as 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 2019 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 advancements 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

Matthew Fuller *(Corpus Christi 2019) Year 5*

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 fifth 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.

Runners start the road mile outside Christ Church college. Luke Gribbin 218; Matthew Fuller 948

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 pain-stricken face looks down, unloads a heavy stack of pages. "Help me to end this chapter".

Feebly, "I'll try".

Flash Fiction -2

Ariana Minea *(Pembroke 2020)*

Great Western Hospital
Glittering on the horizon
My north star

News Flash
Net Zero for Osler House

Chris Albertyn *(Green Templeton 2019)*

Osler House's Summer VIIIs campaign began with an exciting turn of events in Rowing On, with Osler House 'tying' with Exeter M3 (despite Osler being 0.5s faster). A subsequent 'erg-off' led to Osler 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, Osler 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

Sustainable Healthcare for Planetary Health

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.

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 also have to embrace the aims of Planetary Health, which relates the health of humans to the health of the earth's natural systems that so far have supported life on our only home.

Cover of the Medical Schools Council ESH curriculum designed by SUMT.

Supporting this paradigm, the GMC has added a new sustainability duty to Good Medical Practice, effective from 30 January this year. It's in 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.'[1]

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 seek 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.

1. Tun S. 2019. Fulfilling a new obligation: Teaching and learning of sustainable healthcare in the medical education curriculum. Medical Teacher. 41(10):1168-1177 DOI: 10.1080/0142159X.2019.1623870

Clinical School News

Dr Catherine Swales *(1997 Wadham College)*
Director of Clinical Studies, Oxford The Oxford

The concept of an intercalated DPhil 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 can 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 smooth return. Five years ago, the Oxford MB DPhil program was launched to address these barriers. This combined initiative between the School of Medicine and Biomedical Sciences and two Departments (Oncology and NDORMS) offers 8 DPhil places each year for our medical students to hit 'pause' after FHS or Year4/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 Doctorial 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 Josephine Carnegie

Mortensen Prize in Surgery
awarded to Alexandra Shipley

George Pickering Prize
best overall performance in finals examinations: Rebecca Howitt

Meakins Maclaran Gold Medallist
best overall performance throughout the clinical school: Rebecca Howitt

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 forgoing 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.

Graduate Entry Medical Students at May summer fundraising singalong.

"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, joining societies, and having an 'Oxford experience', or 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 rest.

No longer shackled by hefty fees,
Bright minds find their expertise.
Through AccessGEM's widened gate,
New voices rise, challenge fate.

From all corners, they convene,
Fulfilling dreams, this unseen scene.
In Oxford's halls, they find their place,
AccessGEM, a saving grace.

Let today's steps light the way,
For future doctors, come what may.
In AccessGEM's reach, they blend,
Opportunity, without end.

OSLER HOUSE *Behind the Scenes...*

Miss Jewel Bennett (Lady Margaret Hall)

President of Osler House Club, University of Oxford

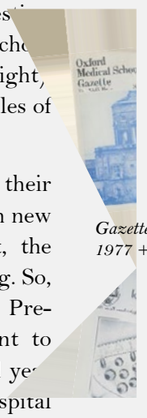
"I am extremely grateful for all the support from this hard-working committee! The sustainable foundation we worked hard to restore will last decades and I am confident Osler House will continue to thrive! "

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 it's 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 compliment 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 Iffley Road Sports Centre and a new secure keycard system is in the works. Osler House has been working to establish new connections with the University's Sports Federation, to provide input on sports risk assessments and adherence to national governing guidelines.

Osler House has almost 20 other sub-societies including academic speciality groups that organise lectures and annual conferences e.g. Paediatric Society. We also have an Osler House Orchestra, Osler Choir and an Acapella group which build friendships that span across the clinical school. Tingewick is the largest sub-society under Osler House and serves the performance and charitable aspects of the Club. This year Osler House has begun to integrate the Tingewick team into collaborative socials to deliver safe socials that raise money for charity and reinvestment back into the student community.

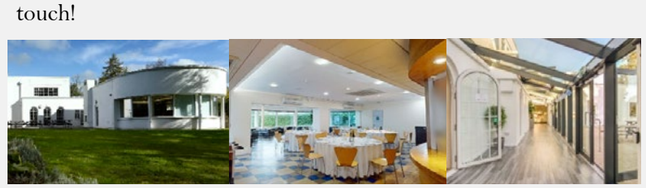
Major administrative tasks include securing the proctor's registration, bank account mandate and DPS licence for the bar. These protect the Club's building and finances under the University and local council and enable alcohol sales and live music in the venue. A new socials conventions procedure has been created to assess and mitigate risks for all events, whether large BOPs or small sparklers nights. Osler House building has also been cleared out for the first time since Covid ready for future refurbishments. Amidst the old social decorations, sports kit, and leftover sub fuscs, some interes history was spotted including a Medical Sch Gazette from 1977 + 1981 (pictured on the right, The clear-out aimed to be sustainable with piles of recycling and clothes for charity donation.



Gazettes from 1977 + 1981.

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 ye 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.

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!



Osler House; photo credit to OUEV website.

Tingewick Society

Scafell Pike

Athena Henderson
(Magdalen College, 2020)

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 raffle this year saw some immense generosity from local Oxford businesses with a few prizes further afield. We are so grateful, as a society, for the continued kindness of those who donate money, prizes or time to this society and we could not run without you. We hope all who won prizes enjoy them! I know within the committee there was certainly some jealousy of the winners of the Chelsea FC tickets, Kurt Geiger vouchers and most importantly, GPEC vouchers. Nevertheless the £1,500 from ticket sales motivated us to put aside our jealousy and keep on with efforts.

This led us to one of our real challenges of the year: The Three Peaks. Following in the footsteps of firms before, we drove to Scotland and started our ascent. In an unbelievable turn of 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 Scafell Pike 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 patietns that take the time to educate us in this way. 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

Snowden

Ben Nevis

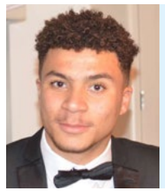
rehabilitation. A group of us were lucky enough to visit the site as a part of our course and so to be able to choose to support this charity this year was a wonderful opportunity.

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 **Tingeaid** 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.

Oxford Medical Students' Society



Bhargava Govardhana *(New College 2021) Third-year medical student*
Esele Okondo *(Magdalen College 2021) Third-year medical student*

Oxford Medical Students' Society Co-Presidents

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 reintroduction 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 aid communication between the medical student body and the faculty.

Since the current executive committee (Co-presidents: Bhargava Gorvardhana and Esele Okondo, Secretary: Maria Nozdrina, Treasurer: Hasan 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 have welcomed a new access and outreach representative and LGBTQ+ 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.

The Oxford Medical Students' Society Committee 2023-24 at the annual Oxford MedSoc Ball.

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 in Manchester's 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 a 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 Guttman 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, Guttman 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, while at weekends he took up gliding and made friends with many experts in that sport.

Ritchie Russell, the neurologist, (who disliked Guttmann), the pioneer plastic Surgeon Pomfret Kilner and others such as Leo Wollner were all at Stoke Mandeville with their own somewhat isolated units and each like Trevor with the hope of a future in Oxford.

As jobs in Oxford became available Alasdair Robb Smith had got in 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 Spriggs, Gwyn MacFarlane, Rosemary Biggs, Peggy Pickles, and Janet Vaughan, all internationally famous. In 1960 Trevor became Oxford's Neuro pathologist. After Morag died from cancer he married Betty Brownell who was as 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, Walpole, Lewin and John Potter, and neurologists Ritchie Russell, John Spalding, Honor Smith and Charles Whitty they became an important and formidable teaching unit for the region and internationally. Trevor provided histological slides 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 NHS Pathology and Radiology and eventually had a great role in helping to set up the John Radcliffe and as 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 finally find funding 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 fellows 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 needs met both on the new JR2 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"

but offered to the college a property owned by the authority on the JR2 site. “I as Senior Bursar had to negotiate the purchase”. A difficult and expensive negotiation followed. The opposition deprived the college of some of its income as very few students joined the college in its first year.

When Sir Richard Doll’s role as Warden came to an end, Trevor did much to secure his friend John Walton as the next Warden. He was Vice Warden throughout John Walton’s seven-year term. It was his responsibility to search for the next Warden, who was Sir Crispen Tickell, British Ambassador from the United Nations, but he could not come for one year.

Trevor did not want to take up what would be a full-time job as acting Warden because, having built an excellent neuropathology department, the idea to him and to those for whom he provided a service was very unsatisfactory. His wife Betty Brownell was very sick with cancer and died a couple of months later.
He decided to retire from his NHS job, and because the college’s finances were modest, to take up only half the university salary of an acting Warden. He would no longer live in the Warden’s House but would live alone in the house he shared with Betty in Kingston Bagpuize . He retained a room and access to his department in the neighbouring Radcliffe Infirmary. He was disappointed that a year as Acting Warden would not be recognised as The Warden by the Governing Body. They decided such title could not be considered without an election process. He retired in 1989, when Crispin Tickell took up the post of Warden.

Trevor was a skilled writer of very readable English. One book in1992 for the general public was about Alzheimer’s dementia and the doubtful and debated cause of aluminium ingestion. He had always enjoyed medical history and got much pleasure in researching the lives of Sir Thomas Willis and then Sir Thomas Browne after his retirement. Still later he wrote a third book about Henry Power of Halifax. He also wrote short articles on neurosurgeons Sir Victor Horsley, Hugh Cairns and on Montpellier’s medical school. His German expertise allowed him to write about the appalling physicians promoting eugenics and executions of the disabled under Hitler.

He met his third wife Catherine, Principal of Somerville College at an Oxford University function, the first at which he represented Green College. They met frequently at University and College events during the winter 1990-1991. They became engaged and married at Somerville College. Trevor was able to support Catherine during the difficult manoeuvre of switching Somerville from an all-female to female and male college. Catherine retired early in the hope of having a long and happy retirement together. Catherine and Trevor together were popular diners at both Green Templeton and Somerville. Sadly, she developed cancer which initially responded to intense therapy. They had five years of great times but Catherine died in December2014.
Trevor thus had much sadness but great loves of wives who died of cancer. In his late years he seemed lonely and probably was more welcome at Somerville than at Green Templeton where few knew how great his contribution to the college had been. He valued many great friends and shared sports such as sailing and jobs such running colleges or the writing of medical history and a long time had passed since his important role as a close colleague and contributor to a famous neurology department was known to all.

Professor Terence Ryan

Professor Christopher Bulstrode CBE 1951 – 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 inescapable 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, Katherine, 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 a budding orthopaedic surgeon) and he had come to Oxford to discuss his project with Terence Ryan. In retrospect it was perhaps typical of Bulstrode to choose such a neglected field of study.

Our paths crossed 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 alongside his knowledge of educational matters would help us all 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 all lead clinical teachers attended one of their 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 core skills 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 the confusing ward 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 surprise. 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 passing 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 for services to humanitarian medicine. Commenting on this recognition, he said ‘Getting involved in humanitarian aid work is the dream for many of us doctors and nurses. It has been an honour to contribute what I can. Certainly, helping those less well off than ourselves, especially when war or disaster has struck, feels like one of the most useful things that we can do.’

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 Wheatley at the top of Witts Lane was fittingly called Witt’s End. Bulstrode had dammed the stream running through the bottom of their garden to create a substantial lake, much to the consternation of neighbours downstream who were very reasonably 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 one-off – a Tigger, a maverick, fiercely intelligent and convivial. He will be remembered by both his families and by a wide circle of friends and colleagues. His legacy is considerable.

Dr Susan Burge (St Anne’s 1972)

“Bulstrode” was a Marmite person who excited strong 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 to from Medicine after he had become fascinated by the work of Konrad Lorenz on animal imprinting. He joined a group of exciting and talented students, including his first wife Kathy Homewood, who later made their mark on British science and whose 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 in 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 skilful, 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 hang glider in D Block, then the junior 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 skilful teacher who was very interested in and concerned for junior doctors’ welfare - to the point where he became an “incognito” 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 students: Anna Karenina, The Citadel, The Story of San Michele, life and the real world. He was upset that the administrators would only consider reimbursing medical text books.

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.

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 company. I don’t know if he has a memoir but it would be a cracker of a read. He was that sort of a person.

Dr Roger Bodley (Worcester 1966)

Obituaries: BMJ 2024;384:q133

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 boxed for the University, a Blue in 1973 and 1975, rowed for Pembroke, and later for Osler House, winning blades (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 Bow Four". Our crew, cox Barbara Rushton (nee Mounsey), Ray Dawes, John Chadwick and me (GR) 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 Python's 'Philosophers song' 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 (GR) spent our three-month elective (1977) in Kenya at a mission hospital in 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 our shared experiences had been life-changing, showing us how to practise good medicine with limited resources. After Tumu Tumu Mark and I travelled to the coast in a series of scary matatu rides packed with children, mothers and various animals. Mombasa back then was a fine destination offering respite from hospital routine and the harsh and often violent reality of local life. We slept on beaches and would occasionally slip unseen into 4-star hotels to shower! We hiked one day across a desert to a distant coast in tropical heat to the point of near exhaustion. Truly a case of "Mad dogs and Englishmen out in the midday sun."

Beyond Osler House Mark chose Family Practice in Bedfordshire. Son Tom and daughter Jessica soon brought great joy, but life dealt him an unfair hand. Multiple Sclerosis condemned Mark to dysphasia and a wheel chair long before an Osler House 40th anniversary reunion in 2018.

Despite the devastation of his MS diagnosis in 1997, Mark continued to work from his wheelchair until finally retiring in 2007. He later noted that "in many ways being in a wheelchair showed patients that Doctors can become unwell too."

In 2009 Mark moved into a Leonard Cheshire Care Home to receive the full care he needed and became 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 to the top of the Millenium Dome!

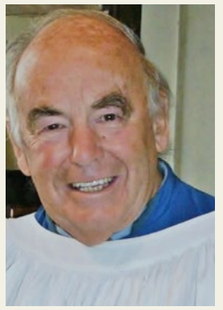
In his later years Mark found delight in the arrival of three granddaughters. Affectionately referred to as "Grandpa Doc," Ferne, Phoebe and Willa became his new vocation, one to which he was completely devoted. The countless messages of love and remembrance that our family received demonstrated just 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 mens' 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

Mark as Stroke with the 'Tin Potter's' 1976.

Reginald Brian Tidy
1930-2024



Brian passed away at the aged of 93, in February 2024.
Brian was born in Uckfield in Sussex, his mother Winnie was from a farming family, and his father Reg was a dental 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 airport.

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 July 1995. He had a long partnership there with David Messer - the names Tidy and Messer lending themselves to a variety of paraphrases 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 paper files, 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 vaccination, he happened 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, Neill 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 whenever they came close. 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

Brian's daughter Gemma, paying Dad a visit at the Medical School Office!

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 David Messer), followed by 1A Observatory Street and finally moving in 1979 to its present home in the John Radcliffe Hospital.

Mr David Messer

Brian Tidy was a pillar of the Oxford Clinical School for nearly 50 years. With Peter Brown and David Messer he guided and befriended the students and successive Directors of Clinical Studies with great efficiency and kindness. His skills as a musician also led him to assist with Tynchewycke and other musical activities of the students.

By happy chance, Brian's father Reg was our Radium Custodian at the Churchill 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-digitised world Brian produced many long hand written 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

Photo taken in Saigon - milking a Malayan Krait of its venom for research, watched by Vietnamese and Oxford Colleagues

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 Embará 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 use 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.

Designed by Joe Graham, Balancing Act Design. **www.balancingact.org .uk**