



**90th Anniversary of the
Postgraduate Medical Journal**

Medicine from 1925 to 2015

1st October 2015

Lettsom House, London

Welcome

The internationally renowned Coull Quartet will perform works by Haydn and Debussy in support of the children's cancer charity CLIC Sargent at the second in a series of annual charity musical evenings organised by the Worsted Weavers Guild.

The children's cancer charity [CLIC Sargent](#) is the UK's leading cancer charity for children and young people, and their families. [CLIC Sargent](#) provides clinical, practical, financial and emotional support to help them cope with cancer and get the most out of life. [CLIC Sargent](#) aims to help the whole family deal with the impact of cancer and its treatment. CLIC Sargent is active nationally, and locally in the Warwickshire and Coventry area.

Thank you for your support of the event.

We hope you enjoy the evening.

Donald Singer, Robin Fryer and Peter Law



PROGRAMME

8.20 **REGISTRATION**

- 8.50 **Welcome**
Professor Donald Singer, President of FPM, London
- Professor Bernard Cheung, University of Hong Kong
Editor-in-Chief, Postgraduate Medical Journal
- 1. HISTORY OF MEDICINE**
- 9.00 **Sir William Osler and his teaching**
Professor Terence Ryan, University of Oxford
- 9.20 **Early development of heart surgery**
Mr Wade Dimitri, University of Warwick
- 2. CLINICAL SPECIALTIES – I**
- 9.40 **Preventing and treating diabetes**
Professor Melanie Davies, University of Leicester
- 10.00 **Cancer - a disease of our time**
Professor Karol Sikora, Cancer Partners UK
- 10.20 **Development of anaesthesia over the past 90 years**
Dr David Wilkinson, President of the World Federation of
Societies of Anaesthesiologists, London
- 10.40 **COFFEE**
- 3. CLINICAL SPECIALTIES – II**
- 11.10 **Evolution of asthma and COPD therapy over 90 years**
Professor Peter Barnes FRS, NHLI, Imperial College, London
- 11.30 **Advances in managing tuberculosis:**
The White Plague, 1925-2015: a world of two halves
Dr Paul Nunn, London, former Co-ordinator
WHO STOP Tuberculosis Programme
- 4. MEDICAL PUBLISHING**
- 11.50 **Publishing medical journals**
Peter Ashman, BMJ, London
- 12.10 **5. Round Table – the next 90 years - I**
- 12.40 **LUNCH**
- 6. CLINICAL SPECIALTIES – III**

- 13.30 **Preventing heart disease**
Professor Donald Singer, President of FPM, London
- 13.50 **Advances in imaging the heart**
Professor Dudley Pennell, NHLI, Imperial College, London
- 7. PERSONALISING MEDICINES**
- 14.10 **New approaches to drug discovery**
Professor Andrew Marsh, University of Warwick
- 14.30 **Progress in Personalised Medicine**
Professor Sir Munir Pirmohamed, University of Liverpool
- 14.50 **Vigilance and risk management of medicines**
Dr June Raine, MHRA and EMA, London
- 15.10 **TEA**
- 8. CLINICAL SPECIALTIES – IV**
- 15.30 **Perspectives on neuroscience**
Lord Walton of Detchant
- 15.40 **Carotid surgery to prevent stroke**
Professor Alison Halliday, University of Oxford
- 9. PUBLIC HEALTH:**
- 16.00 **Opportunities to improve public health through a focus on health in the workplace**
Professor Dame Carol Black
Principal of Newnham College, Cambridge
- 16.30 **10. Round Table – the next 90 years - II**
- 17.00 **Reception**
- 18.00 **Close**

Speakers and abstracts



Professor Bernard Cheung
Editor-in-Chief, Postgraduate Medical Journal

Professor Cheung MB BChir, BA, MA, PhD (Cantab), MRCP(UK), FRCP (London), FRCP (Edin), FCP, FHKCP, FHKAM (Medicine) is the Sun Chieh Yeh Heart Foundation Professor in Cardiovascular Therapeutics and heads the Division of Clinical Pharmacology and Therapeutics in the Department of Medicine of the University of Hong Kong. Professor Cheung is an Honorary Consultant Physician of Queen Mary Hospital and the Medical Director of the Phase 1 Clinical Trials Centre. He is also the Director of the Institute of Cardiovascular Science and Medicine, and the President of the Hong Kong Pharmacology Society.

Professor Cheung has wide experience in senior roles of editing national and international journals. His main research interest is in cardiovascular diseases and risk factors, such as hypertension and the metabolic syndrome. He is a principal investigator of the Hong Kong Cardiovascular Risk Factor Prevalence Study. He is ranked among the top 1% of researchers in his field.

Professor Cheung read Medicine at Magdalene College, Cambridge. He was a British Heart Foundation Junior Research Fellow at Cambridge before taking up lectureships at the University of Sheffield and the University of Hong Kong. In 2007-2009, he held the chair in Clinical Pharmacology and Therapeutics at the University of Birmingham, England.



Professor Terence Ryan
Emeritus Fellow, Green Templeton College Oxford

Professor Terence Ryan DM FRCP, is an Emeritus Professor of Dermatology at Oxford University and Oxford Brookes University. He is curator of 13 Norham Gardens, Oxford, the home of Sir William Osler and an emeritus fellow of its owner, Green Templeton College . He is widely travelled and holds professorial titles at Departments of Microcirculation in Beijing, and Dermatology in Nanjing and Jefferson Philadelphia, Physics in Limerick, Nursing in Missouri, Doctorates of Science Martin Luther University Germany and at Hull University. His current occupations include Chairman of Skin Care For All: Community Dermatology a subcommittee of the International Society of Dermatology of which he is Honorary President (www.skincareforall.org). At WHO he is from time to time adviser on wound healing, Buruli Ulcer, Lymphatic Filariasis and Leprosy. He has in excess of 600 publications relating to dermatology and public health, blood supply and lymphatic drainage.

Osler and his teaching: relevant today.

The concept and development of Post Graduate Medicine owes much to one outstanding physician- Sir William Osler (1849-1919). Born in Canada he trained as a physician in Montreal and established a reputation as a skilled and popular diagnostician and teacher . Invited as a young doctor to practice and teach at the Medical School in Philadelphia he was a few years later appointed as the first physician to St Johns Hopkins Hospital, Baltimore, a medical school founded with the objective of being the best and most innovative medical school in the United States . Osler's textbook, Principles and Practice of Medicine first published in 1892, and frequently revised and translated into several languages , was the leading medical textbook for half a century and in many respects it remains relevant to today's practitioners.

Medical students have long been taught through lectures, by reading books and journals and as "apprentices" by observing experienced practitioners .Osler, in contrast, took a patient centred approach to teaching. By teaching at the bedside, he was able to demonstrate, watch and assess students as they examined patients, blood and urine samples using ward microscopes, and, following death, he discussed post mortem findings. Such a student and patient centred approach contributed to his popularity as a teacher. He was also the author of many seminal papers and as an avid reader of medical texts his publications were richly referenced.



Mr Wade Dimitri
University of Warwick

Wade R Dimitri FRCS is a cardiac surgeon. He is a Tutor at Warwick Medical School where he is a member of the Panel of Examiners. His main areas of interest are Beating Heart (Off Pump) Coronary Artery Bypass Grafting, Minimally Invasive Cardiac Valvular Surgery and developments in Cardiopulmonary Bypass Technologies. He went to a De La Salle school in Alexandria, Egypt and later graduated from Alexandria University Medical School in 1969 with Honours degree. His entire postgraduate training was acquired in the UK. This included several rotational posts in Cardiac surgery in major London teaching Hospitals leading to his appointment as Senior Lecturer and Honorary Consultant in Glasgow then NHS Consultant at the University Hospital in Coventry. He is a member of several Cardiac Surgical Societies including The Society for Cardiothoracic Surgery in Great Britain and Ireland, The Society of Thoracic Surgeons (USA), Scottish Cardiac Society, The Egyptian Society Of Cardiovascular and Thoracic Surgery and an Honorary fellow of The Indian Society Of Cardiovascular and Thoracic Surgeon. He is a Council Member of the Fellowship of Postgraduate Medicine and a member of the RSM. He is a reviewer for The European Journal Of Cardiovascular and Thoracic Surgery as well as Injury. Since retiring from active clinical work, he has increased his involvement with overseas training, teaching cardiac surgeons as well as operating.

Early developments of heart surgery

In the early part of the 20th century, a patient developing chest pain or a myocardial infarction would die within minutes, hours or days. There will be no treatment, simply Potions and Prayers. In the 21st century, the onset of chest pain will trigger a cascade of strategically planned, tightly coordinated sequence of events culminating in their direct admission to the cardiac catheter suite (bypassing all the hospital obstacles) within 20-30 minutes of the onset of pain.

Coronary angiography will be followed - if indicated - by PTCA (angioplasty) and stenting. If unsuitable, he will be transferred to the cardiac surgical operating room and an invariably successful coronary artery bypass grafting would be carried out. Thus his definitive treatment would have been completed within hours of its onset.

Ludwig Rehn, a surgeon in Frankfurt is credited with performing the first successful heart operation. In 1896, he successfully repaired a stab wound of the right ventricle in a 22 year old moribund man using an "Intestinal needle and Silk" Rehn's attempt at operating on the heart was considered bold and daring and was promptly denounced by eminent clinicians particularly Sir Stephen Paget and Theodor Billroth. The heart had reached the limits of surgical endeavours set by nature.

No further attempts were made for the next 3 decades until Mr Henry Souttar (later Sir) successfully performed a mitral valvulotomy in 1925 on a young girl in severe heart failure. His actions were deemed inappropriate, unacceptable and bordering on being immoral. He did not repeat the operation again because "He could not get another patient".

The next 3 decades witnessed a rapid increase in animal experiments and numerous extra cardiac attempts at dealing with cardiac trauma, stenotic cardiac valves and indirect approaches to revascularisation of the ischaemic myocardium. Many animal experiments were successful but failed in the human setting. Open Heart Surgery (OHS) appeared an impossible dream and the outer wall of the human heart was a barrier impenetrable to the surgeon's knife. Meanwhile, advances in other medical and surgical specialties including thoracic surgery progressed at a rapid pace.

Following decades of laboratory experiments, Dr John Gibbon developed a heart lung machine (cardiopulmonary bypass) and used it successfully in May 1953 to close an Atrial Septal Defect in an 18 year old woman in severe congestive heart failure. This pioneering work heralded a new era in cardiac surgery allowing surgeons to operate comfortably inside the heart repairing complex abnormalities while preserving myocardial function.

Today OHS is barely 63 years old- just 1 month older than H.M. Queen Elizabeth II's accession- and is regarded as one of the major medical and technological advances of the 20th century, performed effortlessly on all patients of all ages from neonates to octogenarians with advanced cardiac pathologies. It is estimated that more than 4000 procedures are performed daily worldwide with a mortality of less than 2% in the majority of patients.

Melanie J Davies

Professor of Diabetes Medicine

Profile

Professor Melanie Davies, MB ChB, MD, FRCP, is an Honorary Consultant Diabetologist in the University Hospitals of Leicester NHS Trust, Leicester, UK and Professor of Diabetes Medicine at the University of Leicester. She trained in Sheffield and then completed her training in Cambridge, Ipswich and Leicester. Her research work is around the cause of Type 2 Diabetes, screening and prevention of Type 2 Diabetes Mellitus, and self management, structured education and new therapies including the incretin based therapies.

Melanie Davies is a clinician with over 25 years experience. She is an NIHR Senior Investigator, one of only a handful in diabetes in the UK, Director of a Clinical Trial Unit, Director of the Diabetes Research Network in the South East Midlands and PI on a number of large global studies in the field of diabetes, obesity and cardiovascular disease. Including 4T, ORIGIN, ATLANTUS and DESMOND. She has been an expert for NICE on a number of their guidelines groups.

She has published over 300 original articles including in high impact journals such as Lancet, New England Journal of Medicine and the BMJ. She has over 350 published abstracts and 10 book chapters including Co-Editor of the diabetes section in the 'Oxford Textbook of Endocrinology and Diabetes' in 2011.

In the last three years she has had more than 170 peer review publications and has been awarded, in the last five years, over £30,000,000 of external reviewed grant funding. Professor Davies is based at the Leicester Diabetes Centre hosted by the University of Leicester and University Hospitals of Leicester where she is the Co-Director and has over 140 research staff working in the Unit.



Current and Previous Posts

2014	Lead for Division 2 - Diabetes, Stroke, Cardiovascular Disease, Metabolic & Endocrine Disorders and Renal Disorders NIHR Clinical Research Network: East Midlands
2012	Clinical Lead for Long Term Conditions Diabetes East Midlands Strategic Health Authority
2012	Director Leicester Clinical Trials Unit
2011	Director NIHR Biomedical Research Unit (BRU) in Diet, Lifestyle & Nutrition
2010	Professional Member National Institute for Health and Clinical Excellence (NICE) Type 2 Diabetes - Preventing the Progression from Pre-Diabetes
2009	Senior Investigator National Institute for Health Research (NIHR)
2009 - 2014	Co-Director South-East Midlands Diabetes Research Network (SEM DRN)
2008 - 2012	Deputy Director Collaborations for Leadership in Applied Health Research & Care (CLAHRC)
2006 - 2007	National Institute for Clinical Excellence, member of Type 2 Guidelines Consensus Reference Group
2006	Professor of Diabetes Medicine Diabetes Research Unit, University of Leicester
2006	Honorary Consultant Physician University Hospitals of Leicester NHS Trust
2006	UK National Screening Committee's Vascular Board Executive Committee
2004	Department of Health Steering Group on Structured Education of Diabetes in England and Wales
2003 - 2006	Diabetes UK Research Committee
2003 - 2004	National Institute for Clinical Excellence, member of Type 1 Guidelines Consensus Reference Group

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Leicester Diabetes Centre
Committed to Growing International Research, Education & Innovation

Pathophysiology of Type 1 and Type 2 Diabetes Mellitus: a 90 year perspective

Diabetes mellitus is a complex metabolic disorder associated with an increased risk of microvascular and macrovascular disease and whose main clinical characteristic is hyperglycaemia. The last century has been characterised by remarkable advances in the understanding of the mechanisms leading to hyperglycaemia. The central role of insulin in glucose metabolism regulation was clearly demonstrated during the early 1920s, when Banting, Best, Collip, and Macleod successfully reduced blood glucose and glycosuria in a patient treated with a substance purified from bovine pancreata. Later, during the mid 1930s, clinical observations suggested a possible distinction between “insulin-sensitive” and “insulin-insensitive” diabetes.

Only during the 1950s, when a reliable measure of circulating insulin was available, it was possible to translate these clinical observations into pathophysiological and biochemical differences and the terms “insulin-dependent” (indicating undetectable insulin levels) and “non insulin-dependent” (normal or high insulin levels) started to emerge. The next 30 years were characterised by pivotal progress in the field of immunology that were instrumental in demonstrating an immune mediated loss of insulin-secreting β -cells in subjects with “insulin-dependent” diabetes.

At the same time, new experimental techniques allowing the measure of insulin “impedance” showed a reduced peripheral effect of insulin in subjects with “non insulin-dependent” diabetes (insulin resistance). The difference between the two type of diabetes emerging from decades of observations and experiments was further formally recognised in 1979, when the definitions “Type I” and “Type II” diabetes were introduced to replace the former “insulin-dependent” and “non insulin-dependent” terms. In the following years, many studies elucidated the natural history and the temporal contribution of insulin resistance and β -cell insulin secretion in “Type II” diabetes.

Furthermore, a central role of insulin resistance in the development of a cluster of cardiometabolic alterations (dyslipidaemia, inflammation, high blood pressure) was suggested. Possibly as a consequence of the secular changes in diabetes risk factors, in the last 10 years the limitation of a simple distinction between Type I and Type II diabetes has been increasingly recognised, with subjects showing the co-existence of insulin resistance and immune activation against β -cells. With the advancement of cellular and molecular understanding of diabetes, a more pathophysiological classification that overcomes the historical and simple “glucocentric” view could result in a better patient phenotyping and therapeutic approach.



Professor Karol Sikora
Medical Director of Cancer Partners UK

Professor Karol Sikora is Medical Director of Cancer Partners UK which is creating the largest independent UK cancer network. He was Professor and Chairman of the Department of Cancer Medicine at Imperial College School of Medicine and is still honorary Consultant Oncologist at Hammersmith Hospital, London. He is Dean and Professor of Medicine at Britain's first independent Medical School at the University of Buckingham and a Fellow of Corpus Christi College, Cambridge.

Cancer - a disease of our time

In the field of cancer medicine, great strides have been made in understanding the fundamental biology of cancers and impressive treatments have emerged, resulting in markedly prolonged survival for many patients. These advances mean that cancer could well become a chronic disease within the next 20 years, but that promise depends on sustained investment in innovation, both in diagnostics and therapies, as well as on society's willingness to pay for continued increasing innovation.

The three great challenges facing cancer medicine in the future will be an understanding of the biology of the very wide range of cancers affecting different organs, the increased prevalence of the disease that can be expected in an aging population, and the optimal way in which to deliver care across a wide range of economic environments. How will biomedical science and health-care systems rise to these challenges? An understanding of the way in which advances have been applied in personalizing treatments in the past points a way ahead to address future challenges.

Our cancer future will emerge from the interaction of four factors: The success of new technology, society's willingness to pay, future health-care delivery systems, and the financial mechanisms that underpin them. The only way to reduce the costs of cancer care is to ensure that the right patient gets the right treatment. Investing in sophisticated diagnostics is a clear imperative in making personalized medicine for cancer a reality and delivering it as close to patients' homes as possible.

The age of the world's population is rising dramatically. This will increase the total burden of cancer, with many patients living with considerable co morbidity. At the same time, new technology in many areas of medicine is bringing improvements to the quality and length of life. Major innovations in the following six areas are likely to have the greatest impact on cancer:

- molecularly targeted drugs with associated sophisticated diagnostic systems to personalize care;
- biosensors to detect, monitor, and correct abnormal physiology and to provide surrogate measurements of cancer risk;
- our ability to modify the human genome through new, systemically administered targeted vectors;
- the continued miniaturisation of surgical intervention through robotics, nanotechnology, and precise imaging;
- computer-driven interactive devices to help with everyday living;
- the use of virtual reality systems, which, together with novel mood control drugs, will create an illusion of wellness.



Dr David Wilkinson

President of the World Federation of Societies of Anaesthesiologists

Dr David Wilkinson LRCP, MRCS, MBBS, DRCOG, FRCA, Hon. FCARCSI is Emeritus Consultant Anaesthetist in the Boyle Department of Anaesthesia at St Bartholomew's Hospital in London. He is President of World Federation of Societies of Anaesthesiologists. He was Wood Library Museum Laureate in History of Anaesthesia from 2008-2012.

He is the author of multiple chapters, papers and presentations on day stay surgery and the history of anaesthesia.

The development of anaesthesia: 1925 to present day

1925 was an eventful year in the UK. George V was on the throne and there was a Conservative Government led by Stanley Baldwin. Britain returned to the gold standard, Cyprus became a Crown Colony and Plaid Cymru was established. In London Logie Baird transmitted television pictures and enclosed double decker buses were introduced. Vauxhall Motors were bought by Ford, the border disputes between the Irish Free State and Northern Ireland were settled and the Locarno Treaties were signed.

In anaesthesia there was no real professional structure, no national organisation and most anaesthesia was provided by house staff and visiting GPs. Only big cities could support a few full time Consultant Anaesthetists. The BMA had held its first Section of Anaesthesia Session at its Annual meeting in 1922 and the British Journal of Anaesthesia had started in 1923. Drugs were based on inhalational general anaesthesia, primarily with ether and chloroform, and local anaesthesia with cocaine and procaine. Labat had just published his major book on Regional Anesthesia. Equipment for anaesthesia was small and portable, there were some oral and nasal airways and tracheal intubation as advocated by Magill and Rowbotham was gaining popularity and gradually replacing insufflation techniques. Carbon dioxide absorption with closed circuit equipment was just

starting. Monitoring was minimal with some blood pressure and pulse rate records made,

Over the following decades the profession developed rapidly. The Association of Anaesthetists of Great Britain and Ireland was formed in 1932 and they in turn formed the Faculty of Anaesthetists within the Royal College of Surgeons of England. Examinations in anaesthesia began, firstly a Diploma of Anaesthesia and then a Fellowship of the Faculty. Drugs expanded in number and variety. Intravenous induction became possible with the production of short acting barbiturates and the slow and unpleasant gaseous induction of anaesthesia started to disappear. Muscle relaxants were introduced into anaesthesia as Griffiths in Montreal used curare. Huge advances took place during and immediately after WW2 as blood transfusion became commonplace, fluid therapy increased and a more skilled and experienced workforce returned to civilian life to specialise in anaesthesia. More inhalational agents were developed and the anaesthesia machine became attached to a trolley to form the prototype of today's anaesthesia workstation. The use of ECG monitoring as well as other physiological parameters increased and analyses of morbidity and mortality after anaesthesia began to be investigated and reported.

Anaesthesia apparatus started to become standardised as ISO regulations appeared and most notably gas cylinder colours became universal for UK practice. More and more books started to appear on anaesthesia and teaching and courses for examinations became the norm rather than a rarity. Positive pressure ventilators emerged to deal with the respiratory problems of the poliomyelitis epidemics and the creation of Intensive Care Units occurred. Perhaps the most notable innovation occurred with the introduction of the NHS in 1948 when anaesthesia was recognised as equal consultant status as all other specialities for the first time and pay and conditions were equal for surgeons, physicians and anaesthetists for the first time.

In the following decades there have been continuing developments and refinements. Drugs are novel, shorter acting and less toxic, delivery apparatus is more sophisticated as is monitoring. Standards of education and general skill levels continue to rise. Very little hospital practice now exists without assistance from anaesthesia. Pain Management and Intensive Care Medicine are separating off into their own specialities. Anaesthesia probably leads the medical specialities with its efforts on safety and quality of practice and mortality in the UK is at very low levels. However this is not the case around the whole world where at this time 5 billion of the world's 7 billion population are denied access to essential surgery and safe anaesthesia. This is the next big challenge for all of medicine to help put right.



Professor Peter Barnes
Margaret-Turner Warwick Professor of Medicine
National Heart and Lung Institute, London

Peter Barnes DM, DSc, FRCP, FCCP, FMedSci, FRS is Margaret-Turner Warwick Professor of Medicine at the National Heart and Lung Institute, Head of Respiratory Medicine at Imperial College and Honorary Consultant Physician at Royal Brompton Hospital, London.

He qualified at Cambridge and Oxford Universities (first class honours) and was appointed to his present post in 1987. He has published over 1000 peer-review papers on asthma, COPD and related topics (*h*-index 150) and has written or edited over 50 books. He is the 7th most highly cited researcher in the world, has been the most highly cited clinical scientist in Europe and the most highly cited respiratory researcher in the world over the last 20 years.

He was elected a Fellow of the Royal Society in 2007, the first respiratory researcher for over 150 years. He is a member of the Scientific Committee of global guidelines on asthma (GINA) and COPD (GOLD). He also serves on the Editorial Board of over 30 journals and is currently an Associate Editor of *Chest*, *Journal of COPD* Foundation, *Respiratory* Editor of *PLoS Medicine* and Editor in Chief of *Up-to-Date Pulmonary Medicine*. He has given several prestigious lectures, including the Amberson Lecture at the American Thoracic Society, the Sadoul Lecture at the European Respiratory Society and the Croonian Lecture at the Royal College of Physicians, London. He has been received honorary degrees from the Universities of Ferrara (Italy), Athens (Greece), Tampere (Finland), Leuven (Belgium) and Maastricht (Netherlands). He is a NIHR Senior Investigator and was elected a Master Fellow of the American College of Chest Physicians and a member of *Academia Europaea* in 2012. He was President of the European Respiratory Society 2013/2014. He co-founded an Imperial spin-out company *RespiVert*, which was acquired by Johnson & Johnson and has developed novel inhaled treatments for COPD and severe asthma.

Evolution of asthma and COPD therapy: 1925 to 2015

Asthma has been a recognised disease since ancient times, when it was treated with a variety of herbal extracts, such as the sympathomimetic ephedrine derived from horsetail and anticholinergics, such as stramonium from *Datura stamonium* (thorn-apple) and atropine from deadly nightshade (belladonna), which were available as an oral treatment or in “asthma cigarettes”. Adrenal extract was found to be effective for asthma at the beginning of the 20th century and adrenaline discovered to be a bronchodilator. Henry Hyde Salter in his seminal book “On asthma and its treatment” published in 1850s advocated the use of strong black coffee and another xanthine derivative theophylline, which occurs naturally in tea, was found to be a bronchodilator in the 1920s.

By 1925 adrenaline injections, theophylline, ephedrine and inhaled anticholinergics were used to treat asthma symptoms. In the 1940s adrenaline was administered by inhalation for the first time. At that time asthma was believed to be a largely psychosomatic disease due to stress and as a nervous response of the airways to stress. It was regarded as an intermittent disease that required treatment for acute episodes, but at this time was not a common disease as it is today. The prevalence of asthma has increased dramatically over the last few decades and is somehow linked to a Western lifestyle.

Adrenaline was replaced by inhaled isoprenaline in the 1960s and subsequently the development of selective β_2 -agonists and long-acting β_2 -agonists (LABA). From the 1980s it was recognised that chronic inflammation was important and that mast cells were causing bronchoconstriction of airways. Glucocorticosteroids were extracted from the adrenal glands in the 1940s and oral cortisol shown to be beneficial for severe asthma in the 1950s, although its side effects were recognised to be a problem so that it was restricted to intermittent treatment of severe exacerbations.

Inhaled corticosteroids (ICS) were developed in 1970s and have now become the mainstay of treatment in asthma patients. Combination inhalers with an ICS and LABA are the most effective asthma therapy today, especially used in a maintenance and reliever regime. New treatments for asthma are more specific and include antibodies that block IgE and Th2 cytokines, such as IL-5 and IL-13, but may be suitable for only a small proportion of patients with severe disease.

Treatments for chronic obstructive pulmonary disease (COPD) are less effective than those for asthma. COPD included emphysema and chronic bronchitis which have long been recognised to be different lung disease from asthma, although they are often treated with the same limited repertoire of therapies. COPD patients in 1925 would be treated with the same bronchodilators that were used in asthma. Now long acting bronchodilators and their combination are the treatments of choice. ICS are far less effective in COPD than in asthma but may

be indicated for patients with COPD who have features of asthma. In patients with chronic bronchitis mucolytic treatments such as potassium iodide were used in the 1920s, but mucolytics have now fallen out of favour. Oxygen was considered to be dangerous and it is only with the long-term trials of controlled oxygen in the 1980s that long-term oxygen became available for selected patients. New treatments for COPD that suppress the underlying inflammation are urgently needed but have proved difficult to develop.



**Dr Paul Nunn,
London**

Following a BA in Physiological Sciences from Oxford University, Dr Nunn MA, FRCP qualified MB BS from University College Hospital, London in 1977. After training as a registrar in respiratory medicine at the Royal Postgraduate Medical School, Hammersmith Hospital, he became Specialist Physician at the Royal Victoria Hospital, Banjul, The Gambia. A lectureship at the London School of Hygiene and Tropical Medicine followed during which Dr Nunn spent three years studying the interactions of HIV and tuberculosis in Nairobi, Kenya. He was a Visiting Scholar at the University of California, Berkeley, in 1991, joining the Global Tuberculosis Programme at the World Health Organization in Geneva in 1992. He worked on operational research and the development of the DOTS strategy for control of tuberculosis in low-income countries, going on to develop international policy in the management of HIV-associated TB, multi-drug resistance, and infection control. He has written a number of papers mainly on tuberculosis for peer-reviewed publications.

Since retiring from WHO in 2012, Dr Nunn has helped several countries in Africa, Asia and the Middle-East to review their national TB programmes, enhance their strategies to control tuberculosis, and raise funds from development agencies. He has also worked on strategy development in tuberculosis-related areas with the Global Fund, non-governmental organizations and a pharmaceutical company. He is currently Director of a consultancy addressing infectious diseases.

The White Plague, 1925-2015: a world of two halves

In 1925 in the industrialized countries of the world, the rich with tuberculosis attended sanatoria. Severe cases of pulmonary disease could receive any of several techniques designed to put pressure on affected lung tissue. This was the State of the Art - the BCG (Bacille Calmette-Guérin) vaccine had been developed by 1921, but was accepted into wider practice only much later. In England and Wales in 1925, the mortality from tuberculosis was close to 100 deaths per 100,000 population, while in poorer countries, such as China, it would have been about 250/100,000. The difference was most likely attributable to social and economic development, resulting in better nutrition in Northern European countries, rather than packing a small proportion of cases off to sanatoria, or the application of techniques as ineffective as they were uncomfortable.

The advent of treatment in the 1950s was a revolution – mortality and incidence rates dropped significantly in the industrialised world. This was the result, however, of the systematic application of multi-drug therapy with full supervision of treatment across whole populations. Mere availability of the drugs was insufficient, and indeed, counter-productive, leading as it did, in many countries, to the development of drug resistance. In the developing world, in more recent times, but only in some countries, has systematic application of these control techniques begun to diminish the burden of tuberculosis. Tuberculosis remains as much a social, organisational and economic problem as it is a clinical challenge.



Peter Ashman
Publishing Director – BMJ, London

Peter Ashman is Publishing Director – BMJ. He joined BMJ in 2007 and has strategic responsibility for The BMJ, BMJ Careers and BMJ's specialty journal publishing programme which has grown from 28 journals in 2007 to over 60 titles today. Much of BMJ's growth has come from society publishing contracts and from Open Access journal launches including BMJ Open. Peter sits on BMJ's Executive Committee. Prior to joining BMJ, Peter was Publishing Director at Nature Publishing Group and VP of Publishing at The Lancet in New York. Peter served 6 years on the Board of STM Association and is Chair of the body which represents the interests of scholarly society publishers - Association of Learned and Professional Society Publishers alpsp.org

Is there a future for medical journals?

Since the launch of Postgraduate Medical Journal in 1925, medical journals have played a vital role in the development of medical research and practice. They have also informed, educated, entertained and frequently irritated researchers and clinicians. In the 20 years since the advent of the internet, the face of medical publishing has been transformed. Yet many aspects have remained unchanged - doggedly stuck in the past. Is that necessarily a bad thing? Did we get it right first time? Will the plethora of disruptors invigorate medical publishing, ruin it or simply die a death? What will medical journals look like in another 90 years? Do we even need journals in a world of Google, Wikipedia, PubMedCentral and repositories? Peter Ashman will address these questions and attempt to make some predictions as to how we will be using and accessing the medical literature in years to come.



Professor Donald Singer
President, Fellowship of Postgraduate Medicine, London

Donald Singer BMedBiol, MD, FRCP, FBPhS is a clinical pharmacologist interested in drug discovery, prevention and treatment of cardiovascular disease, and improving safety and effectiveness in use of medicines. He is also interested in promoting better public understanding of the benefits and risks of medicines. He trained in Medicine in Aberdeen, at the Hammersmith Hospital, at Charing Cross and Westminster Medical School and then at St Georges Hospital Medical School and at Heart Science Centre of the Imperial College. He was foundation holder of the Chair of Clinical Pharmacology and Therapeutics at Warwick University and has since worked on the faculty of Yale University and as a clinical pharmacologist on the Human Resources for Health Programme for Rwanda^[25] advising on systems for pharmacovigilance .

He is President of the Fellowship of Postgraduate Medicine and a member of the Healthcare Professionals' Working Party of the European Medicines Agency. He was formerly a member for of the Council of the British Pharmacological Society. He is a member of the Executive Committee of the European Association of Clinical Pharmacology and Therapeutics, which supports scientific and educational exchange for over 4000 clinical pharmacologists from 34 countries. He co-authors Pocket Prescriber, the 8th edition of which was published by Taylor & Francis in August 2015.

In 2009, with Michael Hulse he co-founded the annual Hippocrates Prize for Poetry and Medicine, which has attracted interest from 61 countries and received the 2011 Times Higher Education Excellence and Innovation Award.

Preventing heart disease

In the 1920s, angina had only recently been attributed to narrowing of the coronary arteries and the term heart attack only recently coined. There was then little hope for treatment although coronary heart disease was then becoming increasingly common. This talk will focus on coronary heart disease and related syndromes. It will consider the extent to which coronary heart disease can now be prevented and the degree to which current public health measures and risk factor pharmacological and non-pharmacological treatments are adequate to deal with preventable heart disease.

Evidence will be discussed for the benefits of exercise and diet for reducing cardiovascular risk. Recent research will be considered on benefits of a Mediterranean Diet approach for reducing the incidence of major cardiovascular events, compared to standard recommendations on low-fat diets. To illustrate potential benefits of improving implementation of current treatments, results will be discussed on the potential contribution of a multi-disciplinary approach to improving control of hypertension, including involvement of community pharmacists.



**Alison Halliday , Professor of Vascular Surgical Sciences
Nuffield Department of Surgical Sciences, Oxford**

Alison Halliday is a Consultant Vascular Surgeon whose main interest is in Carotid Surgery and Stroke Prevention. She is Principal Investigator in the Asymptomatic Carotid Surgery Trial (ACST-1), one of the world's largest clinical surgery trials, involving thousands of patients from 30 countries. The group reported that prophylactic surgery removing tight carotid artery narrowing (carotid endarterectomy) prevents future fatal & disabling strokes for at least 10 yrs; this finding has changed worldwide surgical and stroke practice (Lancet 2004, 2010) Her group instigated and reported (the UK Carotid Surgery Audit (2005-8), the largest National Audit of carotid surgery in the UK - this work highlighted shortcomings in the NHS process of referral and of carrying out prompt carotid artery surgery. Working with the National Stroke Strategy this has provided a driver for preventing Stroke by improving surgical services (British Medical Journal, 2009). Collaborative research includes government-funded work (NIHR), working with the University of Oxford Clinical Trial Service Unit (CTSU), evaluating 2 stroke prevention technologies in ACST-2, a large International Trial comparing Carotid Endarterectomy with Carotid Artery Stenting. This work enables surgeons, stroke physicians, neurologists, cardiologists and interventional radiologists from many countries to work together and to date, has recruited nearly 2000 patients.

Stroke & Carotid Disease 1925 to 2015

No surgical interventions for atheromatous carotid disease had been performed by 1925, but links to the systems were most notably made by Miller Fisher. Eventually in 1953/54 first DeBakey, then Eastcott performed carotid endarterectomy and then bypass for stroke symptoms. Large randomised trials in the 1980's began to question and gather evidence to support or refute carotid bypass, carotid surgery and carotid stenting; these will be summarised in this talk.



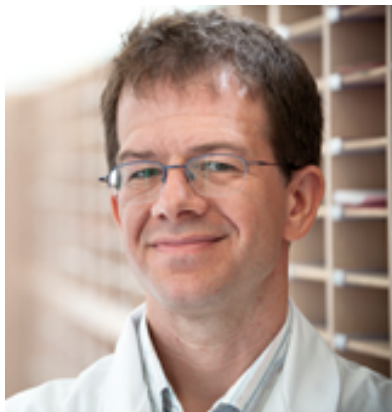
Dudley Pennell

Professor of Cardiology, National Heart and Lung Institute, Imperial College

Professor Dudley Pennell MD FRCP FACC FESC FRCR FAHA FMedSci is Professor of Cardiology at the National Heart and Lung Institute, Imperial College, London. He is Director of the National Institute for Health Research Cardiovascular Biomedical Research Unit, Director of the Cardiovascular Magnetic Resonance Unit, and Director of Non-Invasive Cardiology at Royal Brompton Hospital, Chelsea. His research interests are in CMR, specifically in the measurement of myocardial iron and the assessment of chelation treatment, the assessment and differentiation of cardiomyopathies, the detection and assessment of early atherosclerosis, and myocardial perfusion imaging. Professor Pennell has published 400 research papers and received a number of fellowships, including in 2014 to the Academy of Medical Sciences.

Advances in imaging the heart

Medical imaging has played a transformative role in medicine. From the earliest techniques of x-rays through to modern multi-slice tomography by advanced techniques such as computed x-ray tomography (CT), magnetic resonance imaging (MRI) and positron emission tomography (PET), the journey has allowed visualisation of internal pathology for accurate diagnosis and treatment. This lecture will review the past, look to the current state of play, and discuss the future of medical imaging.



Professor Andrew Marsh
Department of Chemistry, University of Warwick

Andrew Marsh BSc, PhD is Associate Professor in the Department of Chemistry, University of Warwick, where he leads a research group working at the interfaces with materials science and medicine, applying a multidisciplinary approach to Chemical Biology and Medicinal Chemistry. He was educated at Imperial College and carried out postdoctoral research with Jean-Marie Lehn, Strasbourg and in the Centre for Self-Organising Molecular Systems, Leeds. Current projects include the use of Magic Tag technology developed collaboratively at Warwick to understand polypharmacology of clinical therapeutics and the development of new small molecule inhibitors and targets against Respiratory Syncytial Virus.

Drug Discovery: Past, Present and Future

Many clinically efficacious drugs discovered during the 1950s to 70s from biological phenotypes were developed by those who established a detailed understanding of biochemistry as they worked with teams uncovering pathways in the 20th century. What they were unable to fully recognize was how these drugs acted through polypharmacology (interaction with multiple molecular and cellular targets) including drug distribution around the body through membrane transporters. In well-recognized cases such as therapeutics used in psychiatry, their beneficial and adverse effects are intricately linked to the modulation of networks rather than single protein targets.

As molecular information became more detailed, the use of structure-based design and *in vitro* assays led to highly selective inhibitors, but with unpredictable properties in patient cohorts, due to the interplay of genetic variability and polypharmacology. As a result, drugs in development in the past 40 years have too frequently failed in efficacy or safety in the clinic.

To improve drug development by recognizing this polypharmacology, we must take account of the different promiscuities of both therapeutics and targets, enabling us to change approach and make better phenotypic screens. We can integrate knowledge of how drugs interact with transporter pathways, including those expressed by the trillions of microbes in our bodies, to engineer tools such as stem cell-derived models, to discover new, efficacious drugs. The result, complemented by clinicians who use genomic information to innovate a systems biology description of health and disease, will be a future where a broader range of interventions, including lifestyle and exercise influence our approach to the development and use of therapeutics.



Professor Sir Munir Pirmohamed
David Weatherall Chair in Medicine, University of Liverpool

Professor Sir Munir Pirmohamed is currently David Weatherall Chair in Medicine at The Wolfson Centre for Personalised Medicine Institute of Translational Medicine at the University of Liverpool, and a Consultant Physician at the Royal Liverpool University Hospital. He is also Associate Executive Pro Vice Chancellor for Clinical Research. He also holds the only NHS Chair of Pharmacogenetics in the UK, and is Director of the M.R.C. Centre for Drug Safety Sciences, and Director of the Wolfson Centre for Personalised Medicine. He is also an inaugural NIHR Senior Investigator, and Fellow of the Academy of Medical Sciences in the UK. He has authored over 370 peer-reviewed publications. Professor Sir Pirmohamed's research, which spans the whole spectrum from discovery to implementation, focuses on individual variability in drug response (including anti-cancer drugs), both safety and efficacy, with a view to evaluating the mechanisms, and identifying strategies to personalise healthcare in order to optimise drug efficacy and minimise toxicity.

Progress in Personalised Medicine

Drug response by its very nature is highly complex, and is determined by the nature of the disease (and its sub-phenotypes), genetic factors and environmental factors. Clinicians have known about the variability in drug response for decades but the approaches to individualising therapies have been based on population level evidence, and crude clinical indicators. The use of novel strategies (-omics techniques, big data, imaging, molecular pathology etc.) to improve the benefit-risk ratio of drugs by choosing the right drug and the right dose for individual patients which leads to more predictable drug responses is the mantra of personalised medicine approaches.

There has been a lot of interest particularly in genomic variation for many decades, but the recent advances in technologies for human genome wide analysis, including sequencing technologies, provides us with unprecedented capabilities to interrogate individual genomes and relate this to variation in drug responses. This is now beginning to bear fruit in selected areas, in particular in cancer and in drug safety, but much more work is required not only in discovery, but also in the translation of biomarkers into clinical practice and their diffusion into healthcare systems.



Dr June Raine
Director of Vigilance and Risk Management of Medicines
Medicines and Healthcare products Regulatory Agency (MHRA)

Dr June Raine trained in general medicine in Oxford after completing a Masters degree by research in Pharmacology. Her interest in drug safety led to a career in medicines regulation which has spanned a number of roles in assessment, management and strategic development within the UK national authority. Appointed in 1999 to head Pharmacovigilance in the Medicines Control Agency (now Medicines and Healthcare products Regulatory Agency), she was elected in 2005 to chair the CHMP's Pharmacovigilance Working Party and in 2012 as the first chair of the Pharmacovigilance Risk Assessment Committee. She is also a member of the WHO Advisory Committee on Safety of Medicinal Products. Her special interests are in monitoring the outcomes of regulatory action, risk communication and patient involvement in the regulatory process.

Vigilance and risk management of medicines

The 90th anniversary of the Postgraduate Medical Journal reminds us of the limited provisions for medicines quality, safety and efficacy which existed in 1925. This was to change with the implementation of the Therapeutic Substances Act 1925, bringing insulin, pituitary hormones, anti-infectives and vaccines under some control. Nevertheless the defining public health case for pre-authorisation checks and post-authorisation surveillance of medicines in clinical use had to wait until the 1960's. Then the thalidomide disaster drew public and parliamentary attention to the need for a regulatory system, and today's Yellow Card scheme was born. Today the suspicions of healthcare professionals transmitted to the Commission on Human Medicines still form the mainstay of regulatory action and public health protection in UK. But as we look ahead to the next 90 years, and society's expectations for prompt safety action and up-to-date information on benefits and risks, the use of real world data will be centre stage. The role of scientific medical communications such as Postgraduate Medical Journal will remain as important as ever.



Lord Walton of Detchant

John Walton (Lord Walton of Detchant) Kt TD MA MD DSc FRCP FMedSci qualified in the Newcastle Medical School of the University of Durham in 1945 with First Class Honours. He was formerly Consultant Neurologist to the Newcastle upon Tyne hospitals, Professor of Neurology in the University, and from 1971-81 Dean of Medicine. From 1983-89 he was Warden of Green College, Oxford. He became a Knight Bachelor in 1979 and was awarded a Life Peerage as Lord Walton of Detchant in 1989.

He was President of the British Medical Association from 1980-82, of the Royal Society of Medicine from 1984-86, of the General Medical Council from 1982-89, and of the World Federation of Neurology from 1989-97. He chaired the House of Lords Select Committee on Medical Ethics and was for ten years a Member of its Select Committee on Science and Technology. He was presented with the Hewitt Award by the RSM Foundation Inc in 2006 and received an Honorary DCL (Northumbria) in 2013.



Professor Dame Carol Black
Principal of Newnham College, University of Cambridge

Professor Dame Carol Black DBE, FRCP, FMedSci is Principal of Newnham College Cambridge, Expert Adviser on Health and Work to the Department of Health England and to Public Health England, and Chairman of the Nuffield Trust for health policy. She is also a member of the Welsh Government's Bevan Commission on health in Wales, Chair of the RSSB's Health and Wellbeing Policy Group, and a member of PwC's Health Industries Oversight Board. In November 2011 when National Director for Health and Work she completed as Co-Chair an independent review for the UK Government of sickness absence in Britain. The recommendations of this report are now being put in place, with for example a national Fit for Work - Service. Professor Black is a past-President of the Royal College of Physicians, of the Academy of Medical Royal Colleges, and of the British Lung Foundation. The Centre she established at the Royal Free Hospital in London is internationally renowned for research and treatment of connective tissue diseases such as scleroderma. She is a Trustee of the National Portrait Gallery, of the Work Foundation and of Uppingham School. In November 2013 she was named one of the 100 most powerful women in the UK in the BBC Woman's Hour list.

Public Health in the Workplace

An important societal goal is to minimise and remedy the personal, social and economic costs of impaired health and well-being in relation to work and working life. There are social and economic imperatives to ensure that the links between health and work, and work and health, are recognised by all. There is a need to avert the consequences of ill-health, and to support rehabilitation of those who do become ill or disabled, enabling them to maintain, resume or take up work. This, and safeguarding and promoting the health and wellbeing of people of working age, are all part of the public health endeavour.



Dr William Frankland
London Allergy Clinic

Dr Frankland MBE, DM, FRCP read medicine at The Queen's College, Oxford and St Mary's Hospital Medical School, qualifying in 1938. Frankland spent the war years 1939-45 in the Royal Army Medical Corps. For three and a half years he was a Japanese Prisoner of War in Singapore. In 1946 he started working in the Allergy Dept. of St. Mary's Hospital, Paddington. His interests included allergic reactions to saliva in dogs, humans and insects, the latter experimentally causing severe anaphylaxis to him. The allergy clinic at St Mary's Hospital is now named after him.

He started daily pollen counts in 1951 and made them available to the news media from 1961. In early 1950 he conducted placebo-controlled double-blind trials in allergic patients. Such trials 60 years ago were unusual. The trials, along with his work on the pollen count, were among the contributing factors to Frankland's being awarded the Noon Award of the European Academy of Allergy and Clinical Immunology .

In 1948, Frankland was instrumental in the creation of the British Association of Allergists. In 1962 the Association became the British Allergy Society – Frankland served as its president between 1963 and 1966. Dr. Frankland is an Honorary Fellow of Queen's College Oxford. He has published three academic papers since the age of 100 but is thinking of retiring next year when 104.



Professor Alan Armstrong
Head of the Department of Chemistry, Imperial College, London

Professor Alan Armstrong BSc, PhD obtained his BSc in Chemistry (1987) from Imperial College London. He stayed on at Imperial College to carry out work on the total synthesis of the milbemycin and avermectin natural products under the supervision of Professor Steve Ley FRS, obtaining his PhD in 1990. From 1990 to 1992 he was an SERC/NATO Postdoctoral Fellow at Columbia University, New York, working with Professor Clark Still on the design and synthesis of novel podand ionophores for enantioselective cation binding. In September 1992, he returned to the UK to take up a Lectureship in Organic Chemistry at the University of Bath, moving on to the University of Nottingham in January 1996.

He returned to the Department of Chemistry at Imperial College in September 1999 as Reader in Organic Synthesis and was promoted to Professor in October 2004. He is the recipient of the Royal Society of Chemistry Meldola Medal and Prize for 1995 (1996); a GlaxoWellcome Award for Innovative Organic Chemistry (1996); a Pfizer Academic Award (1999); an AstraZeneca Research Award (1999); the Novartis Young Investigator Award (1999); a Bristol-Myers Squibb Young Investigator Award (2000-2003); the Royal Society of Chemistry Corday-Morgan Medal and Prize for 2002 (2003); and a Novartis Lectureship (2008-2009). He received a Rector's Award for Excellence in Teaching from Imperial College in 2011 and more recently in 2015 a President's award for Excellence in Teaching. He is currently Head of the Department of Chemistry and is leading the Department's transfer to a new building at the Imperial West Site.

Postgraduate Medical Journal

The Postgraduate Medical Journal was launched in 1925 in the era of the discovery of insulin and penicillin, Papers published in PMJ describe current practice and new developments in all branches of medicine; describe relevance and impact of translational research on clinical practice.

The Postgraduate Medical Journal publishes topical reviews, commentaries and original papers on themes across the medical spectrum. It also provides continuing professional development for all doctors, from those in training, to their teachers, and active clinicians, by publishing papers on a wide range of topics relevant to clinical practice.

Health Policy and Technology

Health Policy and Technology (HPT) is a peer-reviewed cross-disciplinary journal which focuses on past, present and future health policy and the role of technology in clinical and non-clinical health environments. Through HPT, the FPM aims to foster closer links among policy-makers, health professionals, health technology providers, patient groups and academia.

Fellowship of Postgraduate Medicine

The FPM is a British non-profit organisation founded in the autumn of 1919 as a merger of the Fellowship of Medicine and the Postgraduate Medical Association, with Sir William Osler as its first president. Its initial aims were the development of educational programmes in all branches of postgraduate medicine.

The FPM organises clinical and research meetings and publishes two journals. The FPM has since 1925 published the international journal, the Postgraduate Medical Journal, published by BMJ. In 2012 the Fellowship launched a new international journal, Health Policy and Technology, published on the Fellowship's behalf by Elsevier.

