UNIVERSITY OF BIRMINGHAM

Spring/Summer 2011

Medlines

A biannual publication from the College of Medical and Dental Sciences

Resistance is futile

– championing a new era of antibiotic research at Birmingham

Inside this issue: **Working for the National Health; Meet the new Dean of Medicine; Cutting bladder cancer risk**

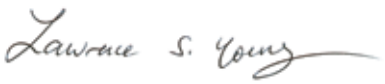
Welcome

2011 is going to be both an exciting and challenging year! As if the significant reforms in higher education were not enough, we are also faced with the restructuring of the NHS and an increasing focus on public health.

So, sitting on my desk are three weighty documents – the Browne Review on Securing a Sustainable Future for Higher Education, and the Government White Papers on Equity and Excellence: Liberating the NHS and on the new public health strategy for England entitled 'Healthy lives, healthy people.' And all of these changes to be implemented in 2012! Engulfed by this sea of uncertainty, with its obvious consequences for training budgets and research funding, we remain confident and are responding to these challenges by focusing on our strengths and on our unique attributes as a world leading centre for medical education and research.

This confidence is encapsulated in the University's new Strategic Framework entitled 'Shaping Our Future: Birmingham 2015', which identifies five core values that will inform and pervade the way we work to make the University of Birmingham one of the leading global universities – these values are excellence, distinctiveness, impact, confidence and pride. The College of Medical and Dental Sciences is focusing on these values as we move forward, recognising that in these challenging times it is even more important that we concentrate on research excellence and on the quality of the student experience.

Once again this edition of *Medlines* perfectly reflects the breadth and quality of our biomedical research and educational activity. It also demonstrates how we are responding to the external challenges particularly as they relate to public health and to the widening participation agenda. We see change as an opportunity to play to our strengths and to position ourselves firmly in the top international league of medical schools as part of an ambitious and visionary University with civic roots, national eminence and global impact.



Professor Lawrence Young
Pro Vice-Chancellor
Head of College of Medical
and Dental Sciences

Nobel prizewinner comes to Birmingham

One of the world's leading virologists spoke at the International Epstein-Barr Virus Conference, which took place at the University in September.

Professor Harald zur Hausen, who won the Nobel Prize in Medicine in 2008, was a special guest at the biennial conference, which brings together experts and researchers on Epstein-Barr Virus (EBV) from around the world.

A leader in his field, Professor zur Hausen was awarded the Nobel Prize for discovering that papilloma virus was the cause of cervical cancer. His work has had an enormous impact on the treatment and understanding of cervical cancer, which has included the development of a vaccine.

Professor zur Hausen's research has also influenced work on other virus-associated cancers, such as Hodgkins Lymphoma and Burkitt's Lymphoma, which can be triggered by EBV.

Birmingham has one of the largest teams in the country researching EBV. The research is led by Professors Lawrence Young, Alan Rickinson, Paul Murray and Martin Rowe.

Work at the University of Birmingham has led to the first clinical trials of an EBV vaccination in patients with cancer of the nose and throat.

Harald zur Hausen (second right) meets members of staff

Front cover shows antibiotic pills. Assortment of antibiotic drugs in tablet and capsule form. Here, examples belonging to the four main groups of antibiotic drugs are represented. From the Tetracycline group are Oxytetracycline 250mg tablets (yellow) and Doxycycline 100mg capsules (green). From the Penicillin group are Amoxycillin 250mg capsules (red/cream). From the Cephalosporin group are Cephalexin 500mg tablets (pink). From the Amino-glycoside group are Erythromycin 500mg tablets (red). There are over 100 types of antibiotic drugs used to treat infections caused by bacteria.

Drug trial success could reduce the risk of bladder cancer recurring by a third

A major bladder cancer trial led by scientists at Birmingham and funded by Cancer Research UK has shown that adding two commonly used chemotherapy drugs to traditional radiotherapy can reduce the chance of a patient's tumour coming back by a third.

The trial, the largest of its kind in bladder cancer in the world, could mean that fewer patients with invasive bladder cancer will need radical surgery to completely remove their bladder.

The results were presented at the American Society for Therapeutic Radiology and Oncology (ASTRO) annual conference last November.

Professor Nick James, from the University, who led the study with Dr Robert Huddart from the ICR, said: 'These trial results are hugely promising, with a significant reduction in the risk of the cancer returning when compared to radiotherapy alone. When we looked at the risk of potentially lethal invasive disease returning, the improvement was even more marked.'

After two years of follow up, the results showed a tumour relapse rate of 33% for patients receiving chemotherapy in addition to radiotherapy – known as chemoradiotherapy – compared to 46% for radiotherapy alone. The reduction in relapse of the most severe type of tumour was even more marked at 18% versus 32%. He added: 'Importantly, both chemotherapies used in this trial are cheap widely available drugs that are commonly used in cancer treatment already. This makes their use much more practical.

'Having surgery to remove the bladder is a major operation that can seriously impact a patient's quality of life. We have shown that adding chemotherapy to radiotherapy reduces the risk of the most severe type of tumour recurring by nearly half. Hopefully these trial results will mean more bladder cancer patients are given the opportunity to avoid surgery and preserve their bladder function.'

Patients diagnosed with invasive bladder cancer are usually offered either radiotherapy alone – which carries a 40 to 50% chance of the cancer coming back – or surgery to completely remove the bladder.

But giving the two chemotherapy drugs – 5FU and Mitomycin C – at the same time as the radiotherapy helped make the cancer cells more sensitive to it, boosting the effectiveness of the treatment.

Bladder cancer is responsible for more than 4,900 deaths per year, primarily in older people, and is the fourth most common cancer in men.

Online toolkit for safe prescribing

A new project funded by the West Midlands Strategic Health Authority (SHA) has brought together a team of experts from Aston, Birmingham and Warwick Medical Schools to respond to the challenges of safe prescribing. SCRIPT (Standard Computerised Revalidation Instrument for Prescribing and Therapeutics) is an innovative, e-learning toolkit to encourage safe prescribing.

Doctors who have recently graduated from medical school have to prescribe safely from day one on the wards. Their task is made harder by the many new drugs that have been introduced, as well as the rapid throughput of patients, who are often sicker and older, and who are more likely to suffer adverse drug reactions.

Sub-optimal prescribing among new doctors in their Foundation Year 1 (FY1) stage is common and can result in the under use of effective medicines, adverse drug reactions and medication errors.

Up to a quarter of litigation claims in the NHS stem from medication errors (Source: An Organisation of Memory, 2000, London: The Stationary Office), therefore emphasis has now been placed on ensuring that patients in hospitals have safe care by improving the knowledge and skills required for safe prescribing in FY1 doctors.

SCRIPT will introduce 40 key modules that will reflect the basic needs of FY1 doctors. This will enable doctors to undertake basic revision and reach minimal standards in prescribing and enable them to build upon their existing skills in safe and rational prescribing.

The toolkit will be launched in June, but with staggered 'go live' dates throughout the year. Five modules went live in September 2010 – Prescription Documentation, Medication Errors, Allergy and Anaphylaxis, Peri-operative Prescribing, and Dangerous Drugs.

Dr Jamie Coleman, a Senior Clinical Lecturer in Clinical Pharmacology and Medical Education at Birmingham and an Honorary Consultant Physician, said: 'Education does not stop at medical schools. We are keen to promote good practice among junior doctors by working with NHS West Midlands and academia to provide relevant practical training as an online simulation through this new SCRIPT toolkit.'

Introducing the new Dean of Medicine and Vice-Deans

Professor Paul Stewart – Dean of Medicine

Professor Stewart qualified in Medicine from the University of Edinburgh in 1982 and also trained there as a junior doctor/MRC fellow. He moved to Birmingham in 1989 as a Lecturer in Medicine and has worked as a consultant endocrinologist since 1992. In 1993–1994 he worked in Dallas, US as part of his MRC Senior Clinical Fellowship. He became a Professor at the University of Birmingham in 1995 where he has had a variety of roles, until recently as Director of Research and Knowledge Transfer in the College of Medical and Dental Sciences.

Professor Stewart's research focuses on endocrinology and specifically the hormone cortisol. His work has highlighted how some tissues, such as kidney, cannot metabolise cortisol appropriately resulting in severe hypertension. Conversely, other tissues notably liver and fat, can make cortisol locally, thereby promoting diabetes and visceral adiposity. He is now pioneering exciting clinical trials utilising drugs that prevent this process as new targets to treat obese patients with Diabetes.

Paul said: 'Birmingham continues to enhance its reputation as a world leader in clinical practice and medical research and I am delighted to work with my colleagues to develop this further. First and foremost, however, doctors are educators and on this background of clinical and research excellence we must inspire our medical students to truly be tomorrow's best doctors. Undoubtedly, there will be challenges ahead, but I approach this new venture with great enthusiasm and a personal commitment to enhance the professionalism and reputation of the Medical School at large.'

Professor Kate Thomas – Vice-Dean for Student Development and Support

Professor Kate Thomas qualified from the University of Birmingham in 1984 and went on to do house jobs in Good Hope and at the Queen Elizabeth. She joined the North Birmingham General Practice Vocational Training Scheme and became a GP Partner in 1989 at Ley Hill Surgery Sutton Coldfield, where she trained.

Kate joined the University in 1991 on a Royal College of General Practitioners' Research Fellowship. As Vice-Dean for Student Development and Support, Kate is responsible for student welfare across the whole College. Included in this is the MBChB personal mentor system involving 270 staff of the University and NHS clinicians, student mitigation, careers, foundation applications and elements of professional development. She also leads on community based medicine for all MBChB undergraduates encompassing 152 practices and over 300 GPs from across the West Midlands.

Professor Richard Lilford – Vice-Dean for Applied Health Research

Professor Richard Lilford graduated in medicine from the University of the Witwatersrand, Johannesburg and obtained a PhD from the University of London. He was awarded FRCP, FFPHM and FRCOG and served as Head of Department of Obstetrics and Gynaecology in Leeds, before becoming Regional Director of Research and Development at the NHS Executive West Midlands. Richard joined the University in 2001. He is Chief Investigator on grants from EPSRC, HTA programme and Health Foundation. He holds a NIHR Senior Investigator award and is an advisor on methods for research into Service Improvement for the Agency for Healthcare Research and Quality in Washington and WHO. He is an expert in a wide range of areas of health related research, from developing clinical trials and research ethics to assessing the cost effectiveness of treatments for the health service.

As Vice-Dean for Applied Health Research across the College, and as Director of the Birmingham Clinical Research Academy he is responsible for giving strategic direction and personal leadership in this area as well as supporting the continued integration of basic, translational and applied research across our entire research portfolio.

Dr Michael Gammage – Vice-Dean for Medical Education

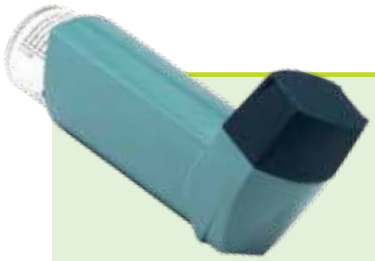
Michael Gammage qualified from the University of Birmingham in 1979 and undertook house jobs in Worcester and East Birmingham (now Heartlands). As a British Heart Foundation Junior Research Fellow he joined the University of Birmingham in 1983 to work in the Departments of Cardiovascular Medicine and Physiology, gaining his MD in 1987. Continuing training in Leicester and Birmingham, he was appointed British Heart Foundation Senior Lecturer in Birmingham and Honorary Consultant Cardiologist at the General and Queen Elizabeth Hospitals in 1990.

With a long-standing interest in teaching and training in cardiology at both undergraduate and postgraduate levels, he took over as lead for the MBChB Graduate Entry Course in 2006, taking additional charge of the five-year course in 2008 and being appointed Vice-Dean for Medical Education in 2010. During this time, the 2014 Curriculum Review has taken place and is now being implemented with the aims of improving the student experience while modernising the course content, maintaining the identity of the Birmingham graduate and continuing to provide some of the highest quality medical graduates in the UK.

Times Top Doctors

In November *The Times* wrote an article on Britain's Top Doctors. We are proud to say that both University staff and alumni featured in the article. Here they are:

- Matthew Cooke (MBChB, 1982; PhD, 2002) for his work in emergency medicine
- Nigel Harper (MBChB, 1976) for his work in anaesthesia
- Jayne Franklyn (MBChB, 1979; MD, 1985; PhD, 1988) for her work in endocrinology
- Michael Peake (MBChB, 1973) for his work in oncology
- Norman Waterhouse (MBChB, 1978) for his work in cosmetic surgery.



Workplace asthma 'costing UK over £100m a year'

Respiratory health experts at the University of Birmingham have found that the cost to the UK economy of workplace asthma may be as high as £135 million a year, and that the costs are mostly borne by the patient and the taxpayer with only 3% falling to the employer.

Professor Jon Ayres, of the University's Institute of Occupational and Environmental Medicine, led a collaborative study funded by the UK Health and Safety Executive estimating the total cost of workplace asthma. The other partners were Metroeconomica at the University of Bath and the Institute of Occupational Medicine in Edinburgh.

The team's results allowed them to calculate the costs of workplace asthma taking into consideration work loss as well as their use of health services. They used six scenarios, including developing asthma after exposure to common workplace sources including isocyanates – found in some paints and laminates; latex and flour.

The researchers assessed the financial impact on the individual, the employer and the state. They calculated the actual gross cost to lie between £70–£100 million per year (based on 2004 prices). However, their findings add: 'Given that the number of newly diagnosed cases is likely to be underestimated by at least one third, these costs may be as large as £95–£135 million.'

Their paper 'Costs of Occupational Asthma in the UK' concludes: 'At present there is relatively little financial incentive for employers to intervene to reduce the number of new cases of occupational asthma, despite the fact that significant benefits would accrue to the rest of society.'

Professor Ayres commented: 'These findings are both remarkable and worrying. Occupational asthma is an almost entirely preventable disease and these findings show that efforts need to increase to prevent the development of new cases. This requires collaboration between employers, employees and occupational health workers.'

University of Birmingham and Abingdon Health launch medical diagnostics joint venture

The University of Birmingham and medical diagnostics specialists, Abingdon Health Ltd, announced the launch of Bioscience Ventures Limited ('Bioscience Ventures'), a new joint venture aimed at developing and marketing new diagnostics products for the healthcare and other industries.

Biosciences Ventures will focus on developing new diagnostic tools for conditions where there are currently unmet needs in the market such as various forms of cancer, genetic related diseases and platform technologies with applications in many areas of medicine including infectious disease testing, drug testing and veterinary applications utilising intellectual property developed at the University of Birmingham.

Operating from the University's campus in Edgbaston, and through its established trading subsidiary company, Alta Bioscience Ltd, Bioscience Ventures will also provide a variety of services such as analysis and synthesis of DNA, protein and other biochemicals to clients both on and off campus in the pharmaceutical and food industries.

By being sector specific, Bioscience Ventures will be able to add value to the development and commercialisation process of medical diagnostic products.

The new joint venture will be led by Executive Chairman, Dr Chris Hand, who has more than 20 years' experience in the medical diagnostics industry. Professor Lawrence Young, Pro Vice-Chancellor and Head of the College of Medical and Dental Sciences at the University, will become a board director of Biosciences Ventures.

The worldwide diagnostics market was worth in excess of $40bn in 2008 and is set to grow to $60bn by 2014. The immunodiagnostics segment is the largest single market and is estimated to have a value of $11.2bn. Within this sector some of the fastest growing areas include infectious disease, cardiovascular, oncology and pharmacogenetics.

CHAMPIONING a new era of antibiotic research

Birmingham is at the forefront of collaborative efforts to combat bacterial resistance, finds Jenni Ameghino

Antibiotic resistance is one of the three greatest threats to human health today. So came the stark warning from the World Health Organisation in 2009. Yet apart from periodic newspaper headlines about hospital 'superbugs' such as MRSA and Clostridium difficile, WHO's call for concerted action to combat this global challenge appears to have largely gone unheeded.

Awareness of the dilemma facing those engaged in antibiotic research and development – not to mention the spectre of a future without the means to fight pathogens – remains poor. At present, it seems, the most people are encouraged to do is heed medical advice to use the currently available drugs more sensibly.

Why the widespread apathy? With pharmacological companies choosing to focus on high-return drugs – such as those used to treat chronic conditions like heart disease and cancer – antibiotics have become the poor relation in drug development. Startling as it might sound, in the past three decades only two new classes of antibiotic have reached the pharmacy. According to top international bacteriologists, with multi-resistant drug infections rising in both clinical and community settings, the need to find effective new antimicrobial treatments has never been greater.

So it is heartening to learn that the University of Birmingham is at the forefront of intense collaborative efforts to not just explore how bacteria become antibiotic resistant but also to identify potential new drug compounds and combinations to combat bacterial resistance and to lobby for greater investment by 'pharma' and highlight the dangers of continued inertia.

> 'Twenty-first century medicine is very different from when antibiotics were developed 60 years ago,'

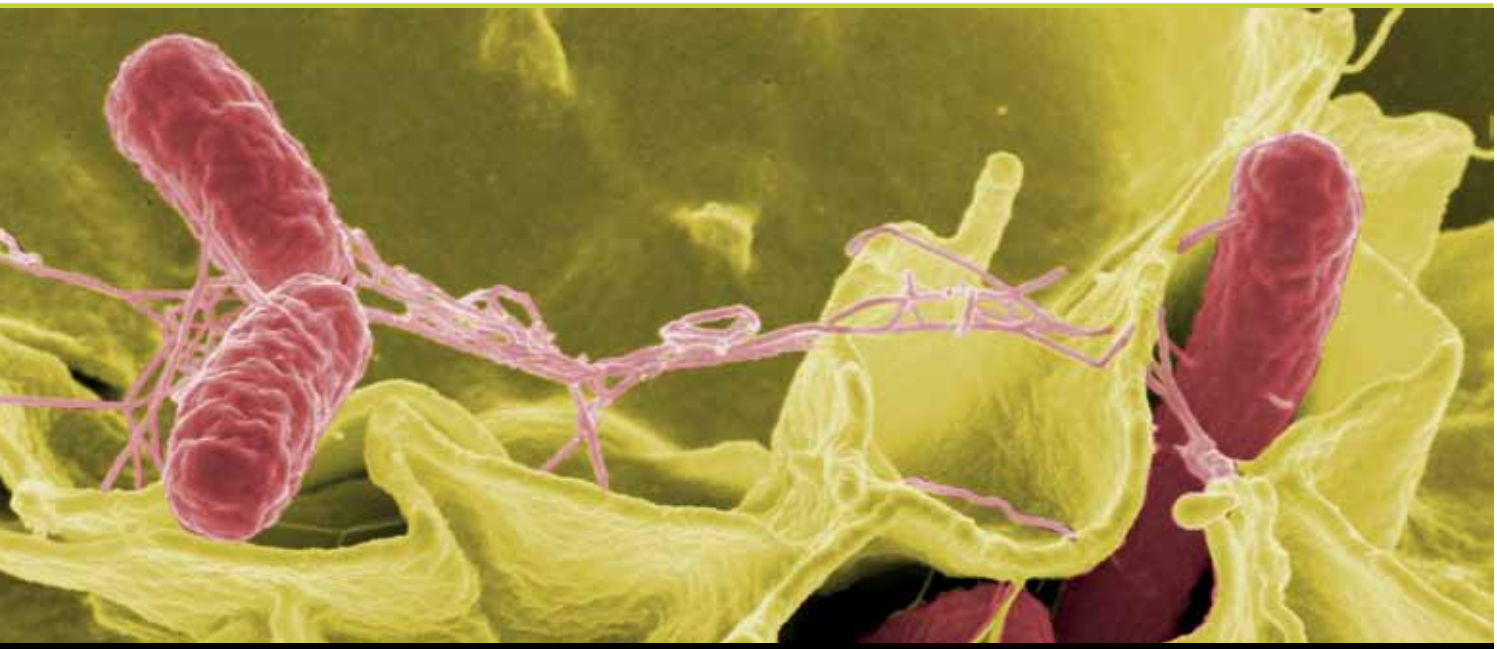
Microbiologist Professor Laura Piddock is dedicated to both causes through her high-profile research into how bacteria develop resistance to drugs and via her position as President of the British Society for Antimicrobial Chemotherapy (BSAC). Birmingham's strength in this area of science lies in understanding antimicrobial resistance and how bacteria infect the host, she says.

'Twenty-first century medicine is very different from when antibiotics were developed 60 years ago,' she explains. 'The infections we are seeing now are unlike those we encountered even 25 years ago because we have more sophisticated medical techniques. If we want effective cancer or transplant treatments we have to be able to treat the infections those patients often get. Many such patients spend time in ICUs or have longer stays in hospital and are therefore exposed to bacteria that are able to cause infections.' Many of these are innately drug-resistant Gram-negative bacteria.

One major research programme she leads is to understand how salmonella bacteria have become so resistant to powerful antibiotic agents. 'One way they do this is to pump the drug out of the bacterial cell. We now know this system is also required for bacteria to infect the host; so we are looking at inhibiting this to make them also susceptible to drugs while also trying to prevent infection. We are doing basic studies to understand what turns these systems on and off to identify novel targets.'

Her team is investigating other opportunistic pathogens such as Acinetobacter, the scourge of ICUs and, increasingly, of soldiers injured in action abroad whose traumatic injuries require intensive and long-term treatment. They are also looking at Streptococcus pneumonia, the bacteria that give rise to pneumonia. 'The way this organism can become antibiotic resistant is similar to salmonella and Acinetobacter, involving an export system, which although


Laura Piddock



Color-enhanced scanning electron micrograph showing Salmonella typhimurium (red) invading cultured human cells.

mechanistically different, is also an export pump. One analogy is that the system is like a car that will get you from A to Z, but there are lots of different types of car.

'What is interesting is that the class of drugs most associated with selecting resistant pneumococci, which have this multi-drug resistant profile due to their export system, is the same class associated with selecting resistant salmonella and Acinetobacter. We want to find out if there is something peculiar to this class of agents that pre-disposes to antibiotic resistance.'

Her work here is multi-dimensional. 'We go from the basic test tube through to looking at new agents; in-between observing isolates from people to try to understand how the bacteria have changed and using that information to develop better treatment strategies.'

A paper by Professor Piddock published in Nature Microbiology Review in 2006, which outlined this pioneering approach, has gone some way to encourage other centres to also focus on the links between multi-drug resistance and virulence.

'Without new antibiotics, medicine will change beyond recognition…'

Professor Piddock is also encouraged by colleagues, including Professor Ian Henderson and Dr Adam Cunningham, who wish to establish Birmingham as a centre for pioneering potential new vaccine candidates. 'While vaccination is only used when there is a cost benefit to society, for example, vaccinating babies against meningitis, it is desirable to be able to vaccinate against salmonella, particularly in the developing world. However, it is unlikely we could vaccinate the entire world; so there will always be a need for new antimicrobial drugs at our disposal.'

Last November, the BSAC featured in a Nature Reviews Microbiology article outlining its mission to resurrect the field of antibacterial drug exploration. Entitled 'The Urgent Need', this bold initiative calls for a concerted partnership approach to find new antibiotics to treat infections. Due to publicly report its findings this spring, the society believes the world is facing an unprecedented crisis, heralded by the re-emergence of diseases such as tuberculosis and the evolution of multi-resistant gonorrhoea.

Calling for direct Government action, it says: 'Without new antibiotics, medicine will change beyond recognition... This call to action is real, and action is needed now.'

'Infections are not going away,' concludes Professor Piddock, 'and they are always prevalent in the elderly, in patients with compromised immunity, in babies and young children. We are going to need antibiotics that work. By raising public awareness, I believe we can change the political will so that the attitude of funding bodies will change too.'

Working for the *NATIONAL HEALTH*

How do you begin to address the health of a nation, or even the world; tackle disparities in people's experiences, or achieve a health service that is itself fit and well?

This is the role of Public Health and, boasting one of the oldest and largest departments in the country, Birmingham is firmly at the forefront of this increasingly important and highly visible area of medicine.

Defined as 'the science and art of preventing disease, prolonging life, and promoting health through the organised efforts of society', Public Health affects everyone – from those needing any form of medical care, to anyone simply concerned with health services being as well managed and cost-effective as possible.

'We are proud to be seen as an excellent Public Health function with high quality staff executing outstanding teaching and research.'

Sitting within the School of Health and Population Sciences, the Unit of Public Health (epidemiology and statistics) was founded in the 1960s (then called Social Medicine). Now with around 150 staff, its activities include world-class research; a highly successful teaching programme; and advising and influencing health services policymakers.

'We are unique both in our scale and our integration with other disciplines such as Primary Care, Health Economics, Nursing, Physiotherapy and Occupational and Environmental Medicine,' says Professor Jayne Parry, Head of Public Health and Acting Head of the School of Health and Population Sciences. 'We are proud to be seen as an excellent Public Health function with high quality staff executing outstanding teaching and research.'

The department's range of programmes, many of which are internationally recognised, includes chronic disease epidemiology, maternal health, horizon scanning, and work around health services at a local, national and international level. 'These are all areas with a global relevance, in which we continue to have a real impact,' says Professor Parry. 'Year on year, we are achieving a consistent improvement in our performance.'

The Public Health teaching programme is also being developed to address increasing demand and utilise new technology. The Masters in Public Health has become so popular that applicants must now sit an initial selection test online and in turn, this has prompted a move towards e-learning for existing students.

Pioneering project forges forward

University epidemiologists are carrying out the first five-year follow-up of a pioneering public health project in China.

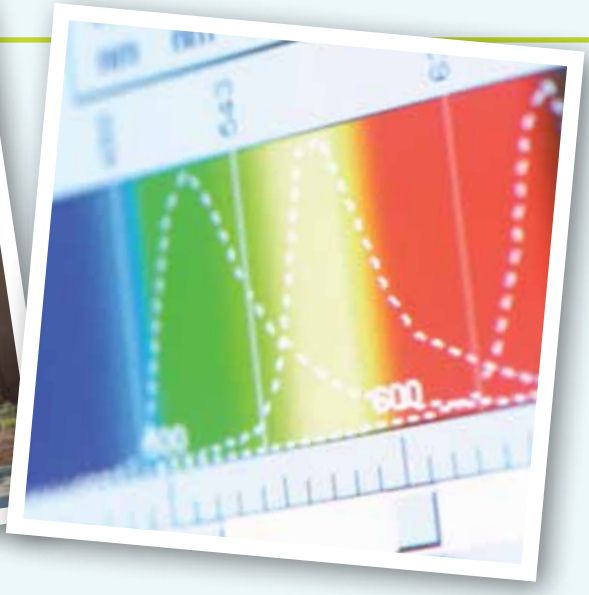
The Guangzhou Biobank Cohort Study (GBCS) is a collaborative research project between the Guangzhou Occupational Diseases Prevention and Treatment Centre in China and the Universities of Birmingham and Hong Kong monitoring 30,000 men and women aged over 50 in Guangzhou.

Its long-term aim is to examine the effects of genetic and environmental influences on health and chronic disease development, particularly circulatory disease, chronic respiratory disease, cancer and dementia. Important findings already identified have led to more than 50 international publications, including papers in The Lancet, The American Journal of Public Health and the International Journal of Epidemiology.

KK Cheng, Professor of Epidemiology at Birmingham and the British lead on the study, explains: The biggest reward from GBCS is likely to be in the results from long-term follow up. The demographic transition in China with the rapidly increasing elderly population suggests the GBCS will have an important role to play for years to come.

In 2010, the GBCS team were awarded a First Science and Technology Prize of the Guangzhou Municipal Government and looking ahead, three large disease cohorts on cardiovascular disease (CVD), chronic obstructive pulmonary disease (COPD) and diabetes mellitus are being established.

Learn more
www.haps.bham.ac.uk/publichealth/research/guanzhou.shtml



'The course is popular because of its strong emphasis on epidemiology, statistics and research methods alongside a large range of modules allowing students to sub-specialise,' says Professor Parry. 'Our plans for e-learning will help students support their own learning online and in time, we hope to offer an MPH completely online.'

'We want to be at the forefront of the Public Health field,' Professor Parry adds. 'We are already in the top ten but we want to get even better and become the destination for anyone who wants to study or research public health.'

Learn more
www.haps.bham.ac.uk/publichealth

Rebecca Kilcullen

Maternal health

The Maternal and Child Epidemiology team researches the identification and treatment of a range of maternal health issues. These include childbirth-related health problems (such as urinary and faecal incontinence, postnatal depression) postnatal care, maternity care in deprived populations, breastfeeding support and smoking in pregnancy.

Led by Professor Christine MacArthur, the team's primary role is to undertake research in maternal health. The team identifies gaps in evidence, and in consultation with health commissioners and clinicians, and in collaboration with academics in other centres, undertakes high quality research, mainly randomised controlled trials to evaluate services. Examples include peer support in breastfeeding (HoBBIT), types of epidural used in labour (COMET) position in second stage labour with epidural, (BUMPES), postnatal depression and physical activity (PAM-PeRS) and pelvic floor muscle training to prevent prolapse (PREVPROL).

Currently underway is an evaluation of a pregnancy outreach worker service for pregnant women with social risk (ELSIPS) since parts of Birmingham have much higher rates of perinatal mortality and morbidity than the UK generally. Women are identified with social risk (eg, recent immigration, housing problems, drug abuse, domestic violence) routinely in their first visit (booking) and we are investigating whether a pregnancy outreach worker working alongside the midwifery teams improves antenatal attendance and depression in the women. We will also see whether it might affect labour and birth outcomes and uptake of the 6 week postnatal check and immunisation.

Professor MacArthur said: ' Women and babies should get the best care; so when there is no evidence to say whether an intervention or initiative works, there needs to be proper evaluation to find out if it does have a benefit. We work with clinicians and the population to undertake research to ensure that resources are applied in the most effective ways.'

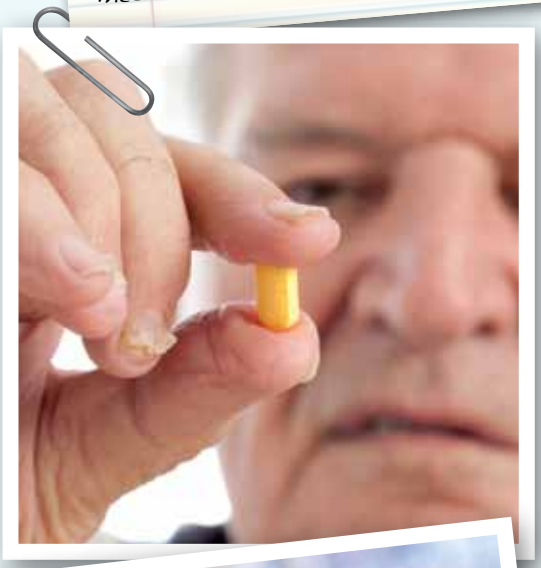
Single pill therapy could prevent millions of deaths

A groundbreaking study beginning this year will investigate whether a simple one-pill-a-day strategy could combat heart disease to prevent millions of premature deaths worldwide.

The first full-scale clinical trial of its kind in this field, the study will be led by researchers from the School of Health and Population Sciences including Professor KK Cheng, Dr Neil Thomas and Dr Tom Marshall, alongside a team from the renowned Tehran University of Medical Sciences.

The project, involving 7,000 participants in Northern Iran over five years, will observe whether offering a combination therapy of four drugs (aspirin, two drugs to lower blood pressure and one to lower cholesterol) in a 'polypill' to almost everyone over 55 years old could reduce the occurrence of heart disease and stroke.

Dr Marshall says: 'Cardiovascular diseases are the leading cause of death in Iran as they are in the UK and most of the world, so it is very exciting to be at the forefront of this research. This is not a distant hope but a real and very practical solution to a pressing health problem, which offers great promise in developing and middle income countries because of its simplicity. For me it is exactly why I came into the field of public health research.'



Scanning the health horizon

Providing an invaluable insight into future healthcare developments is the goal of the National Horizon Scanning Centre (NHSC), in the University's Unit of Public Health, Epidemiology and Biostatistics.

Dr Claire Packer and her team provide advanced notice to the Department of Health and NHS policymakers of new and emerging health technologies; for example drugs, medical devices or diagnostic tests; enabling the clinical and cost impact to be considered ahead of time.

Often collaborating with organisations and networks across the UK, Europe and the world, the Centre provides information to the National Institute for Health and Clinical Excellence (NICE); the National Institute for Health Research (NIHR) Health Technology Assessment programme; the UK National Screening Committee; and the National Commissioning Group for rare disorders.

The Centre also researches the methods used and impact of early awareness and alert activities, with recent publications including a review of how to identify innovative public health interventions.

Plans for 2011 include the launch of a web-based service centred on key patient groups, for example diabetes or heart disease, where information from the individual technology activities is presented alongside an overview of future developments and any research gaps.

Learn more
www.haps.bham.ac.uk/publichealth/horizon

Putting a **brave face** on the world


Norman Waterhouse

Medlines talks to alumnus Norman Waterhouse (MBChB, 1978)

The first time Norman Waterhouse tried his hand at plastic surgery he knew it was the job for him. 'Many elements of general surgery are about taking things away and I was more interested in putting things back together,' he explains. 'Plastic surgery epitomised that. It is also about attention to detail and I think it is an area that attracts rather obsessive people.'

Does he put himself in that category? 'I'm afraid so,' he grins.

Today, the Birmingham alumnus and father of four is one of the UK's leading plastic surgeons with a private practice on Harley Street and a diary overflowing with international lecture invitations. A past president of the British Association of Aesthetic Plastic Surgery, until five years ago he headed the craniofacial service at the Chelsea and Westminster Hospital, where he spent 20 years. Last November he featured in *The Times* list of Britain's top doctors.

He graduated from Birmingham in 1978. 'I remember every minute,' he recalls. 'The great thing was that, unlike London medical schools, you had campus life. The hospital could not have been more convenient, bolted on to the back of the medical school. We had a fantastic undergraduate course and when I look back I realise how extremely well trained we were. Which is probably one reason why Birmingham graduates travel so well.'

He was particularly inspired by surgeons Professor Frank Ashton, Leon Abrams and Douglas Murray. 'I did house jobs for all of them. Mr Murray used to show us these phenomenal cancer reconstructions from East 4B at the QE and they were always inspiring.' Initially, he aimed to specialise in orthopaedics. 'I wanted to do hand surgery. Plastic surgeons do a lot of this and someone suggested I initially spend six months in this area. But on my first day in the job, I realised it was what I wanted to do.'

As an undergraduate Norman became involved with the Birmingham Medical Research Expeditionary Society travelling, first as a student and then as a junior doctor, to Nepal, South America and Africa, which seeded a lifelong passion for rock climbing. 'I stopped about five years ago,' he says. 'These days I am an ageing triathlete instead.'

He undertook surgical missions to developing countries, including Sri Lanka and Ghana, mainly helping children with severe congenital facial anomalies, bringing them to the UK for major surgery.

'The infrastructure required to do this kind of work isn't possible in the field,' Norman says. 'I had a friend and colleague (Dr Martin Kelly) who had had similar experiences in Afghanistan and other places, and we decided to form a charity to help the children who always got left behind and couldn't be treated locally.' So began Facing The World, the pioneering children's charity, which today provides life-changing reconstructive surgery to youngsters in some of the world's poorest countries.

'Operating on children with severe deformities doesn't have an impact on the treatment of craniofacial conditions worldwide but it does provide a kind of platform for people to understand the needs of children like this. The charity has evolved to include outreach programmes where we teach surgery in Vietnam and Ethopia, and train surgeons there.

'People think there is a big difference between cosmetic surgery and reconstructive surgery but it's all about self confidence,' he adds. 'Whether you are born with a congenital anomaly or find there is something you want to change, I approach it in the same way. I don't feel I have to do something charitable to balance my other work at all. As a facial surgeon it's logical for me to do both.'

His message to undergraduates today is to 'think outside the box'. 'Their training is much more rigid than mine was. You can get what you want, but you have to want it badly enough. You have to find out where the best training is and go and get it, but be independent of thought as well.'

www.facingtheworld.net
www.norman-waterhouse.com

Fresh hope to ‘switch off’ rheumatoid arthritis

People suffering from rheumatoid arthritis (RA) delay seeking medical help for an average of three months, thereby missing a crucial window of opportunity for treatment, according to groundbreaking research at Birmingham.

Drs Karim Raza, Andrew Filer and colleagues in the Arthritis Research UK-funded Rheumatology Research Group (Professor Chris Buckley, Drs Paola de Pablo, Dagmar Scheel-Toellner and Steve Young) believe that the three months from the onset of RA symptoms are a critical period in the disease when it might be more effectively controlled and even ‘switched off’.

Drs Raza and Filer have discovered that simple blood tests and ultrasound scanning of joints can accurately predict the development of RA in patients suffering from early joint inflammation. A painful and frequently debilitating disease causing chronic symptoms, RA can eventually lead to severe joint damage. The longer the disease remains active, the worse the damage to the joints can be.

‘Delays in starting treatment for RA are associated with worsening outcomes,’ says Dr Raza, whose research made national headlines after being presented at a press conference at the British Science Festival held in Birmingham last autumn. ‘Early diagnosis is essential as we have shown that the processes occurring in the joints of patients in the earliest stages of the disease are different from those occurring later. This raises the possibility that the early phases may be more responsive to treatment and that the disease, if caught in time, could be switched off.’

The team now hopes to shed fresh light on novel predictive approaches and therapeutic strategies that can further improve our ability to manage patients with early arthritis. For example, they are working closely with endocrinologists (Dr Mark Cooper) and immunologists (Dr Dave Sansom) to see if the local generation of steroids and activation of vitamin D can be harnessed as anti-inflammatory strategies.

Dr Filer explains: ‘In Birmingham we have addressed these issues by actively engaging with colleagues in primary care to streamline patient referral, and by developing minimally invasive ultrasound guided approaches to collect synovial fluid and tissue samples from the earliest clinically involved joints. Using these approaches we have shown that the first three months after the onset of symptoms represents a short-lived, pathologically distinct phase of the disease.

‘There remains a pressing need to improve understanding of the disease mechanisms at work in the rheumatoid joint in the first few months of symptoms. Ongoing work at Birmingham in collaboration with the multicentre MRC-funded Pathobiology of Early Arthritis Cohort (PEAC) and the EU-funded AutoCure consortium is addressing this.’ In particular, Drs Raza and Filer have teamed up with immunologist Dr Dagmar Scheel-Toellner to investigate the inflammatory cells found in rheumatoid joints at the very earliest stages of disease. They aim to study the disease process as it unfolds and to develop new therapies to switch off the inflammation before it becomes fully established.

Why do patients fail to visit their GP soon enough? The reasons for this are illuminating but depressing, according to Dr Raza, who has explored this area with the help of Sister Kanta Kumar, senior research nurse. ‘In a recent study, almost all patients reported that they didn’t know anything about RA when their symptoms started, did not recognise that their symptoms indicated a serious underlying disease, and were unaware of the need for and benefit of early treatment.’

Patients of South Asian origin were found to delay seeking treatment for longer than those from other ethnic backgrounds. Carefully targeted public education campaigns may therefore be essential to develop a wider public understanding of arthritis and broadcast the message that early medical help is vital for people to benefit most from early treatment.

‘Conditions which cause inflammation of the joints such as rheumatoid arthritis, are very common and affect people across the entire age spectrum,’ says Dr Raza. ‘Effective public engagement to reduce this delay is the key to translating major advances in therapy and understanding of the disease into benefit for patients with new onset RA. Recent NIHR funding to develop public engagement strategies will allow us to make hugely important progress in this direction.’

Jenni Ameghino

Your reunions

Many of you have held reunions recently. Thank you to everyone who has sent in reports and pictures.

- **Class of 2000:** The Class of 2000 held their 10-year reunion on Saturday 6 November in the Hyatt Regency Hotel in Birmingham.
- **Class of 1973:** On 16 October, the Class of 1973, held their 37-year reunion since starting their medicine degrees at the Alveston Manor Hotel, Stratford.
- **Class of 1953:** The Cotswold group of the Class of 1953 got together in October in Burford.
- **Class of 1980:** The annual 30-year reunion funded by Sir Arthur Thompson Charitable Trust was held on Friday 3 September. More than 90 graduates attended from all over the country as well from across the world including Australia, the USA and Canada.

Up and coming reunions

- **The Class of 1981** reunion will take place on Friday 21 October 2011. Celebrate 30 years since graduation with a black tie event at the Medical School. For more information contact Keeley Dudley/Karen McNaughton on 0121 414 4046 or at k.dudley@bham.ac.uk or k.mcnaughton@bham.ac.uk

- **Classes 1986, 1976, 1971, 1961 or pre-1961**
  Saturday 18 June 2011
  Celebrate your anniversary milestone with a visit back to campus, to see what has changed (and what has stayed the same) since your time at Birmingham. The day includes a tour of the Medical School building and talk from one of our professors about what has changed since you graduated. The day also includes campus tours, lunch with your classmates and more. Contact Clare Gordon or Katherine Whitbourn-Hammond on +44 121 414 8904 or alumnievents@contacts.bham.ac.uk for more information.
- **Class of 1964**
  13–15 April 2012
  The Class of 1964's 47.5 year reunion will be held in Haven Hotel, Sandbanks, Poole. The local convenors are Chris Williams and Hillary Lane. For more information contact Kishore Shah on +44 (0) 121 454 1630 or kishshah@doctors.org.uk.
- **Class of 1962**
  29–30 September 2012
  The Class of 1962 will be holding their 50th reunion at The Moat House in Acton Trussell, Stafford incorporating a trip to Birmingham. For more information contact Tony Sethi on a.sethi@virgin.net.

Are you planning a reunion?

The Alumni Relations Office can help by putting you in contact with former classmates and advertising your event. Contact the alumni office on +44 (0)121 414 2744 or via alumnioffice@contacts.bham.ac.uk

Table for Ten

On 30 November 120 alumni, students and staff travelled from as far afield as London and Italy to take part in Table for Ten. The event brings together guests with a variety of University experiences for an informal dinner to talk about careers and employability.

Twelve dinner tables representing different degree programmes and themes from across the University took place simultaneously in one room, one of which was Medicine.

Sharing their experiences of the workplace, alumni were able to offer practical advice to current students through lively discussions. Michael Cox, third year medical student, said that the event was a real 'insight into the world of medicine after graduation.'

Students quizzed alumni on making the transition from University to the workplace and alumni enjoyed hearing about life at Birmingham today. David Shore (MBChB , 1984) said that it was 'great to establish contact with undergraduates and pass on contacts' and Aamena Patwary (MBChB, 2002) said: 'I just wished there had been something like this when I was a student!'

Practical feedback on developing career provision for students and how key skills could be built into academic courses were areas of keen interest to academic and careers staff. Dr Michael Gammage, Vice-Dean and MBChB Programme Director, said that he had gained some 'valuable ideas from alumni and students on course changes.'

Thank you to everyone who took part in this insightful and interesting event.

If you are interested in attending a future 'Table for Ten', please send your details in an email to alumnievents@contacts.bham.ac.uk

There are a number of other ways you can support our current students, from attending a networking event for them to practise their technique, to speaking at a careers afternoon. For details of all of the volunteering opportunities available to alumni, please visit **www.birmingham.ac.uk/alumni/getinvolved/volunteering.aspx**

Attracting the brightest and best

Each year over 2,500 applicants battle it out for just 370 places on the five-year MBChB programme. Birmingham is now the third most competitive Medical School to get into behind Oxford and Cambridge and students are required to have achieved a minimum of three A's at A Level and eight A*'s at GCSE. Students are also expected to be rounded in their experiences through extracurricular activity.

Anne Snell, Access to Birmingham Officer, said: 'We are committed to ensure that the most able and determined students can benefit from a university education, regardless of their personal or financial circumstances and we are delighted that a number of medical students have been able to benefit from our Access to Birmingham (A2B) scheme.'

The Access to Birmingham (A2B) scheme was set up in 2000 to work with schools in the West Midlands area that do not have a track record of sending many students on to leading universities by working with their most able students to help them realise their potential. Successful applicants who achieve the University's standard entry grades and pass the A2B module receive a scholarship worth £1,200 for each successful year of study at the University.

Safiyyah Nishat, a third year Medical student said: 'I first heard about the A2B scheme after staff from the University visited my school to talk about studying Medicine. Going to university to study subjects which required higher A Level results was never really encouraged, but I was good academically and I decided that Medicine was definitely for me.

'When I came to look at the campus I really liked it. The Leonard Deacon Lecture Theatre was fairly new and Birmingham had nice facilities. The course at Birmingham gives you lots of patient contact early on, which is great.

'The A2B scheme offering a mock interview was incredibly helpful and it gave me a lot of confidence. I got very constructive feedback and the staff were really nice – it certainly prepared me for the real thing!

'It's extremely generous of my sponsor to help me through the A2B scheme. There's an extensive reading list and the scholarship has helped me buy books; helped with travel expenses to work placements and helped me to buy any medical equipment I need like my stethoscope.

'I am now part of the Birmingham Widening Access to Medical School Society (BWAMS) which encourages and supports pupils from inner city schools within Birmingham to apply to medicine and other health related courses, and I regularly volunteer with Thinktank to talk to children about studying medicine and the opportunities available to them.'

The University is also involved in the UK-wide Realising Opportunities government programme, which enables targeted students to have increased access to 12 of the country's leading research intensive universities.

Learn more
www.birmingham.ac.uk/alumni/giving/circlesofinfluence

Introducing CAWC

With year group sizes at the University of Birmingham Medical School reaching 400, effective student representation is essential to maintain academic and welfare standards. The Curriculum and Welfare Committee, or CAWC for short, is made up of students elected to represent their year or a specific element of the course, such as Welfare, Intercalation and Elective. As a committee, CAWC aims to ensure medical students are well represented within the College and allows a platform from which their views can be conveyed to staff members. The committee benefits from an excellent working relationship with staff, allowing us to be involved in important decisions where our views are highly valued.

This year, we have been involved in many projects within the College. A highlight has been the Feel Bright campaign, which aims to raise awareness of depression in medical students and combat the stigma that surrounds this condition. Events organised by staff and students for the pre-clinical years have been well received and will be scheduled for the remaining years in the near future. We have been involved in the redesign of the foyer and are looking forward to the new layout and the benefits this will bring with respect to student support facilities.

Another aspect of the course we are working hard to improve is the elective experience in fourth year. A highlight for many, we hope, is that a new interactive online elective map will make organising the trip easier for future years. Students returning from their elective can upload useful information onto an online map of the world, linked to the country they visited. This can then be accessed by students in the younger years via the CAWC website. It can also be used by students in the pre-clinical years to organise placements abroad during the longer summer holidays.

Being Chair of CAWC and representing the students of the medical school this year has been a highly enjoyable and valuable experience. We have had many successes as a committee, largely due to the excellent way in which the student representatives are received by staff throughout the College. I am proud to be a medical student here at Birmingham and to work with the students and staff involved with the committee.

Jessica Gosney, fourth year Medical Student and Chair of CAWC

Conferences and events at the Medical School

Conferences and events

Research and Enterprise Gala

5 April 2011

The event will showcase the College's wide range of internationally acclaimed research activity and offers an opportunity to network with key academics, researchers, NHS colleagues, research focused businesses and to hear from key note speakers on specific research topics.

Please RSVP to Michelle Morgan, College Alumni Relations Manager at m.morgan@bham.ac.uk or on 0121 414 3488.

Community Day

19 June 2011

Find out more about the pioneering work that takes place at Birmingham and interact with our research, from taking part in the mini-Medical School to experiencing a chauffeur-driven tour in one of our hydrogen cars.

Germinal Centre Conference

4–8 September 2011

The Belfry, West Midlands

17th International Conference on Lymphatic Tissues and Germinal Centres in Immune Reactions

www.gcc17@bham.ac.uk

Postgraduate Taught Programmes

For full details see **www.mds.bham.ac.uk/pgcourses**

- Advancing Practice – MSC/PGDip
- Biomedical Research in vivo – MRes
- Clinical Neuropsychiatry – MSc/PGDip/PGCert
- Clinical Oncology – MSc/PGDip/PGCert
- Clinical Primary and Community Care – MSc/PGDip/PGCert
- Forensic Mental Health Studies – MSc/PGDip/PGCert
- Functional and Clinical Anatomy – MSc
- Health Economics and Health Policy – MSc/PGDip
- Health Research – MRes
- Health Studies – MSc/PGDip/PGCert
- Masters in Public Health – MPH/PGDip/PGCert
- Masters in Public Health (Health Protection) – MPH/PGDip/PGCert
- Masters in Public Health (Health Technology Assessment) – MPH/PGDip/PGCert
- Occupational Health – MSc/PGDip
- Treatment of Substance Misuse – MPH/PGDip/PGCert

Medlines

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