

# AESCULAPIUS

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The University of Birmingham Medical and Dental Graduates Society

**From Birmingham  
to Bermuda**  
*page 68*



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# AESCULAPIUS

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No 34

Summer 2014

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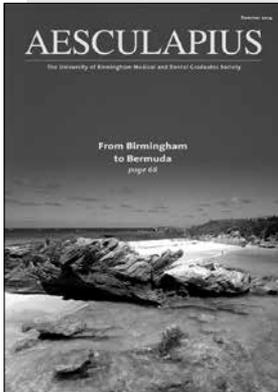
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Front cover:  
Cooper's  
island and  
Bermuda's  
fabulous  
beaches.



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## From the General Editor

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**I** am pleased to say that we have been able to recruit an experienced deputy editor during the year. He is Mohammed K. Quraishi known as Kamil, who was previously editor of the Queen's Medical Magazine.

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***We have an unusual number of electives this year. Providing a grant towards these and publishing them is an important function of the Sands Cox Society and its journal Aesculapius.***

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We have an unusual number of electives this year. Providing a grant towards these and publishing them is an important function of the Sands Cox Society and its journal *Aesculapius*. In addition we have the first report of the Stuart Green Elective. These reports are always of high quality, amazingly diverse and very interesting to read.

The opening of Birmingham Library was an important event for the City and Sian Roberts, its Collection Curator, has written about the wealth of historical information that is held within the striking new building.

You will all remember the Birmingham Medical Institute and perhaps have wondered what has happened to it. It has been under threat of closure on a number of occasions but has managed to survive. Keith Shinton tells us the story.

A chance meeting with Richard Cherry indicated that not only did he collect stamps with a medical interest but also that he was prepared to write about his collection. I expect that you will find the stamps he selected as interesting as I do.

Have you ever wondered about tablets which patients no longer need and are returned to pharmacies. Surely they could be put to good use. I expected that such a logical scheme would hit an administrative block. Vincent Riley has solved the problem by helping underdeveloped countries in a refreshing solution to the problem.

Blue plaques around the Medical School are a fairly recent development and I thought it would be of general interest to get an article about them. Clare Mullett, University Curator,

has kindly sent me an article with some biographical details of those involved.

Accounts of sabbaticals are unusual and perhaps a pointer to the future. Gordon Bates went to Bermuda and tells us about his attachment to the Child and Adolescent Psychiatry team.

As promised we are publishing the last part of the history of the Medical School.

John Davis this year has written about the Birmingham landscape artist David Cox and Erna Kritzinger provided an excellent collection of pictures from the Heritage Motor Centre at Gaydon.

David Walmsley has provided his usual and interesting News from the Dental School and an account of the AGM which is well worth attending.

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***Disappointingly there are no letters.  
This edition must have some matters  
worthy of comment!***

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Disappointingly there are no letters. This edition must have some matters worthy of comment!

Thank you to those who provided obituaries not published in the BMJ.

The Editorial Board hopes you enjoy reading our journal.

**Keith Harding**

Any submission should be sent, preferably before the end of the year to: [keith@huntroyd.freeserve.co.uk](mailto:keith@huntroyd.freeserve.co.uk).

Guidelines are available at [www.sands-cox.org.uk](http://www.sands-cox.org.uk).

For those without email my address is:

**Keith Harding**  
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Birmingham  
B16 9JS

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## The Work of the Executive Committee

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**T**he executive Committee continues to meet about three times a year. We work to improve our society, to increase our membership and to support our editorial team who do a great job producing *Aesculapius*. This year we have reasons for optimism.

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*The executive Committee continues to work to improve our society, to increase our membership and to support our editorial team who do a great job producing Aesculapius.*

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We had a very good AGM in October 2013. Our invited speaker was Sir Keith Porter. He is Professor of Clinical Traumatology and Clinical Service Lead for Military and Civilian Trauma Services in the new Queen Elizabeth Hospital. He gave a most interesting talk on how he and his colleagues at the QE are working to help the unfortunate soldiers who get severely injured in war zones like Afghanistan. The intensive care, teamwork and carefully planned extremely skilled surgery are producing remarkable results.

At the same AGM we had seven student presentations, 5 medical and 2 dental, in which they told us about their electives. The work the students do and the confident and clear way they present their findings and results are very impressive. The financial support and the opportunity to present at our meeting and publish in *Aesculapius* are much appreciated by the students and the staff. This is now an important part of what the Sands Cox Society does and for this reason we will introduce the word Charity into our title.

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*We are pleased to report that Prof Deborah White has become our Vice President. She is Professor of Dental Public Health, Director of Education and Senior Welfare Tutor in the Birmingham School of Dentistry.*

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Next we are pleased to report that Prof Deborah White has become our Vice President. She is Professor of Dental Public Health, Director of Education and Senior Welfare Tutor in the Birmingham School of Dentistry. The other exciting piece of news on the dental front is that work on the dental hospital on the old BBC Pebble Mill site has begun. We shall watch its progress with interest and try to keep our members informed.

The 2014 AGM will be at the Birmingham Medical Institute on Friday October 3rd. We plan to have two updates on key hospitals. Firstly we will have a talk on the new QE and its outstanding cancer services. Secondly we will hear about the new dental hospital and dental school. In addition we shall have student presentations from medical and dental students who have won Sands Cox bursaries. We look forward to another interesting meeting.

The Society has a dedicated executive committee who provide loyal service and we are grateful to them. We also want to acknowledge how pleased we are about the great reception *Aesculapius* gets and thank Keith Harding and his editorial team for the great work they do. Finally we recognise that we owe a great debt to Sharon Charles, our cheerful, overworked executive secretary who deserves and gets our special thanks.

**Martin Kendall – Acting Chairman**

# The History of Birmingham Medical School

## Part 3

K.D. Wilkinson (M 1909) written about 1948

The story of the sequel is really amusing, as showing the degree of vindictiveness which disappointment can engender. After Mr Juke's death the vacancy was advertised and applications were to be in by the 13th April. Mr Gutteridge's application was late, and he was thereby disqualified, Mr Crompton being elected on April 21st. But as the legality of this election was called in question, Mr Crompton resigned on June 16th, and at this date Mr Vaux also resigned. The candidates for the two vacancies were Messrs Crompton, Amphlett, Gutteridge, A. Baker and J. Russel, jnr., and on September 21st Messrs Crompton and Amphlett were elected.

In January of that year a letter to the press was published, in which Mr Ledsam, a well-known general practitioner, with a leaning to surgery, accused Mr Richard Wood, the Senior Surgeon to the General Hospital, of incompetence. (He wrote: A gentleman of between seventy and eighty years of age, who had been thirty-four years on the staff, whose hand shook, etc., etc.). It is a long letter.

In September, after the election, Mr Thomas Gutteridge published an even longer letter, attacking the various members of the staff, but in particular Mr Hodgson and Dr Peyton Blakiston. He said that the former had carelessly performed an operation for subclavian aneurysm, and that the latter had killed a lad of eighteen, suffering from chorea, by ordering excessive doses of prussic acid. The whole matter was threshed out by the Governors and Subscribers' Annual General Meeting on the 20th September, 1844.

The head master of King Edward's School, the Reverend Prince Lee (who afterwards became Bishop of Manchester), a Governor of the Hospital, made a plain statement of facts, and convinced everyone except the accusers that their statements were incorrect, their facts inaccurate, and their accusations unwarrantable.

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*"... when this did not stir up enough excitement ..."*

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So Mr Gutteridge wrote to the press accusing the Reverend J. Prince Lee of drunkenness and of misappropriating (or permitting the misappropriation) of certain school funds, and when this did not stir up enough excitement he wrote to the Bishop of Worcester demanding the inhibition of the Reverend. J.P. Lee, and the unfrocking of Dr Peyton Blakiston, a priest who was practising physic for gain (it was for Dr Blakiston that Sir William Bowman (as he afterwards became) made a large number of measurements of cardiac orifices, and it was for this work that Dr Blakiston gave Bowman a microscope, the first that he possessed.)

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*"... a famous libel action at Warwick ..."*

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The whole matter ended in a famous libel action at Warwick, which the Bishop of Worcester won, and then Mr Gutteridge applied for the vacancy created by Mr Hodgson's resignation from the staff of the General Hospital in 1848. Mr Baker was appointed, and this again aroused Mr Gutteridge's enmity, so in 1851 he accused Mr Baker of malpractice with regard to a case of ovarian disease, as to an operation for aneurysm, and also an amputation at the hip joint. Needless to say the attack failed, but it had a very serious effect upon Mr Baker's practice for some years.

The Queen's Hospital, too, had troubles, the greatest was some years later when in 1857 Mr G. B. Knowles resigned his appointment as surgeon, there were six applicants: Mr Joseph Sampson Gamgee, Mr Hunt, Mr Furneaux Jordan, Mr Henry Lakin, Mr J.W. Moore and Mr J.F. West, the last being at the time Resident Medical Officer at Queen's.



*The Queens Hospital about 1860.*

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The appointment was in the hands of the Council of Queen's College, and at the time Mr Sands Cox was not on very good terms with the majority of the Council, so, in spite of the recommendation of the professors who had to report on the qualification, eligibility, and relative merits of candidates, Mr West was elected.

As Mr West was only twenty four years of age, and had had but little experience, his appointment created some stir, and at a subsequent meeting of the Council he was declared improperly elected on the grounds that he had been guilty of canvassing. For some time there was a considerable controversy about this election, and finally a compromise was reached by the election of both Mr Gamgee and Mr West without any statement as to seniority.

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***"... elections to the staff often secured by most undesirable means ..."***

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Among the large amount of chaff in these accusations there was one grain of truth; elections to the staff of the hospitals were costly, and often secured by most undesirable means. The opinion of the staff carried little weight, for the election was made by a number of governors – a governor being one who subscribed a certain sum to the funds of the hospital. Candidates were obliged to make a most extensive canvass of the governors and subscribers to the funds of the hospital whose staff they wished to join, and it sometimes happened that having found a subscriber who was willing to support

him, the candidate paid the subscription necessary to make the subscriber a governor, and so secured a vote. Candidates, of course, arranged for the conveyance of voters to the poll; in fact, the election was a miniature parliamentary election. As a result, no poor man could afford the expense of becoming a candidate, and so many good men were lost to the hospitals.

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***"... Sydenham College was founded ..."***

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In 1851, just when the Queen's College was most successful, with nearly 100 students, the staff of the General Hospital decided that a school in connection with their own hospital was essential. It must be recalled that the Queen's Hospital was started because Mr Sands Cox could not secure an appointment on the staff of the General Hospital, and could not gather enough teachers for his medical school from the staff of the General Hospital. After the foundation of Queen's College the students at the General Hospital found themselves in a very disadvantageous position, so Sydenham College was founded and occupied three houses knocked into one, but although the buildings were poor the governing body was selected from local practitioners and so many doctors' sons preferred this to Queen's College and the theological domination. In 1860 there was a great influx of students anxious to take the last chance before the Medical Act of 1858 came into force. So Sydenham College prospered, to some extent at the expense of Queen's College, for the town was not large enough to support two medical

schools in competition. The affairs of Queen's College went from bad to worse, and in 1867 the Charity Commissioners held an enquiry and devised a scheme of administration.

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***"Thereafter the amalgamation of the two colleges was proposed"***

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Thereafter the amalgamation of the two colleges was proposed. The union was not easy for each school had its diehards, each wished to retain its identity and control. In the end, by an act of wise abnegation Sydenham College dissolved itself, its students museum and specimens were transferred to Queen's College, and each of the chairs were filled by appointments of dual professors. "It is a subject of deep regret, however, that one or two of our best teachers have been unable to act with their colleagues in assisting the amalgamation of their influence, counsel and experience" was the wording of a resolution passed at the first meeting of the combined school. Indeed it is only fair to record that the successful union was largely due to the tact and kindness of Dr James Russell. After the amalgamation it became necessary to coordinate teaching and the work of students at the two hospitals, so that clerks and dressers should be appointed equally to all of the staff and that the classes should be arranged for the mutual convenience and advantage of all. So the Clinical Board came into being.

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***"... the foundation stone of Mason College was laid."***

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On the eightieth birthday of its generous founder the foundation stone of Mason College was laid. Josiah Mason was born in Kidderminster and earned his living as a boy by selling cakes in the streets; he came to Birmingham at twenty and by enterprise and administrative skill made a great fortune, his chief success being the production of split steel rings for keys, steel pens and the process of electroplating. Mason College was a science college far better equipped with skilled teachers and laboratories than any educational establishment in the Midlands, and it was soon obvious that the students at Queen's College would be greatly advantaged

if they could use the resources of Mason College for the early part of their scientific training. It had always been difficult for students of Queen's College to obtain adequate instruction in the subjects required by the University of London for its preliminary scientific examinations, and because of this many students were deterred from entering Queen's College as undergraduates of London University. The professors of physiology, botany and chemistry at Queen's College voluntarily resigned their chairs and the teaching of these subjects was transferred to Mason College, but anatomy was still taught at Queen's College by a surgeon in private practice with the help of two assistants also in practice. It was not until 1884 that a really important change was made. A whole time professor, Dr B.C.A. Windle was appointed and the accommodation and equipment of the department were considerably improved.

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***"... steps were taken to equip a Dental Faculty ..."***

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When Sydenham College and Queen's College had amalgamated in 1868 the students numbered 60, by 1886 the numbers had increased to 139, and by the year 1890 there were 250 students on the books. After the passage of the Dental Act of 1881 steps were taken to equip a Dental Faculty, and although at first this was small it grew steadily and became well known and popular.

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*Mason College late 19<sup>th</sup> Century.*



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The transfer of some of the preliminary scientific training to the Mason College foreshadowed a still greater change, for in 1892, mainly owing to the labours of Dr Windle, a scheme was finally approved and, after legal sanction had been obtained, the Medical Faculty of Queen's College became the Medical Faculty of Mason College, and its professors Queen's professors in Mason College. It must not be thought that this change was brought about without difficulty, for there was a natural reluctance to dissociate the Medical School from a building and institution which had been its alma mater for so many years, and the scene of its early struggles and ultimate success.



*University of Birmingham c1905.*

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***“... the mellowing influence of a dinner given by Mr Lawson Tait and Dr Carter ...”***

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The final consummation of this transfer was brought about largely by the influence of Mr Lawson Tait and Dr Carter, the objections of the Principal of Queen's College being finally overcome as the result of the mellowing influence of a dinner given by Mr Lawson Tait. At first the change affected the school adversely in the matter of numbers, but this did not continue long. When the Medical Faculty left Queen's College that Institution was occupied solely by Theological students, but this Faculty declined, and from twentyone students at the cleavage in 1892 the numbers fell until the demolition of the old Queen's College front in 1903, when hardly any students remained.

The accommodation provided in the Mason College was in every way superior to that available in the older building in Paradise Street. Considerable structural improvements were undertaken, and the Medical Theatre and Anatomical Department were built, the provision for the teaching of both anatomy and physiology being especially generous. But the growth of the school and the growing demands for increased facilities for scientific teaching brought about a reconstruction of the Pathological Laboratory, which was built and equipped in 1899 with funds supplied by Dr Rickards. At the same time a Professor of Pathology was appointed who should devote himself entirely to the teaching of pathology and research.

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***“the idea of obtaining University powers”***

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The transfer of the Medical Faculty from the Queen's College to Mason's College put into the minds of the governing bodies concerned the idea of obtaining University powers, so that professors should not only teach, but also take part in the examination of their students. The first important step to this end was taken in 1897, when an Act of Parliament was obtained incorporating the College under the title of the “Mason University College”, this step being the necessary preliminary to an application to the Privy Council for a University charter. This charter was granted in 1900, Mr Joseph Chamberlain being largely responsible for the steps taken to obtain degree giving powers, and for the raising of the munificent endowment of nearly half a million pounds. Mr Chamberlain's connection with the Mason College had begun in 1881, when he was appointed one of the five trustees by the City Council. In 1897, under the provision of the Mason University College Act, Mr Chamberlain was elected President of the College Court of Governors, and a member of the Council, and on the formation of the University he became its first Chancellor

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***“... new buildings of the University at Edgbaston were opened by King Edward VII ...”***

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*Opening of Medical School by King George VI, 1938, Queen Elizabeth (back view) is talking to a medical student, Agnes Crozier.*

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After the foundation of the University the size of the Medical Faculty increased irregularly until the first World War, the number of annual entrants varying about twentyfive. Then the numbers doubled and in 1918 reached one hundred. The new buildings of the University at Edgbaston were opened by King Edward VII in the summer of 1909, but the Medical Faculty remained at the old University in Edmund Street until 1938 when the new Medical School was opened at Edgbaston on a site adjacent to the Queen Elizabeth Hospital.

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***“... accommodation which once appeared so palatial ...”***

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Since this the rate of growth has been rapid, for there has been a general expansion of the Medical Faculty and of the Dental School; new departments have been opened and new chairs have been created so that the accommodation which once appeared so palatial has become quite inadequate for

the needs of a still growing school. Today there are twentyfive professorial chairs in the Faculty and more than two hundred graduates on the teaching staff, while the number of students in the Faculty has reached a figure of over six hundred. Until the beginning of World War No. 2 the clinical teachers were all part time, earning their living in practice and paid an honorarium for their University work. Since that date a great change has taken place in the appointment of whole time professors in Medicine, Paediatrics, Surgery and Gynaecology. Each of these has a whole time assistant, many have several assistants engaged in various special lines of research, in teaching of both undergraduates and of graduates, and few of them have any experience of practice.

It is too early as yet to give a reasoned judgement on the results of this change of policy, but it is a great change which will produce a marked modification in the education, outlook and training of students. Time will show whether the alteration is of advantage or not.

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*The Medical School and QE Hospital 1965.*



# The Birmingham Medical Institute

## A determination to survive

Keith Shinton (M 1947), Immediate Past President

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*“... why the Birmingham Medical Institute continues to survive”*

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**M**any institutes are founded, flourish and decline but some persist in spite of surrounding pressures. This has been the fate of many medical institutes where members of the medical and allied professions have congregated over the years. There are today only three such independent centres in England, The Royal Society of Medicine in London, the Liverpool Medical Institution and The Birmingham Medical Institute (BMI). This last one has had its periods of activity followed by a decline from one of which it is at present arising. It is therefore timely to consider why the Birmingham Medical Institute continues to survive when others have closed.

### Early history

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*“... founded in 1875 ...”*

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The Birmingham Medical Institute (BMI) was founded in 1875 to provide a meeting place and medical library for the medical profession in Birmingham and the surrounding area. It was initiated by a bequest of £1,000 from Dr George Fabian Evans, a former physician of the General Hospital. Meetings were held at Queen’s College in Paradise Street until the first Institute was built in Edmund Street in the city centre. In support, the General Hospital handed over its collection of around 2,000 books. The Midland Medical Society and the Birmingham (Subscription) Library also contributed books so that around 7,000 volumes formed the foundation for the library. The collection included some sixteenth century books

including those by such authors as Hippocrates and William of Occam. The most spectacular were illustrations of herbals and anatomical folios.

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*“... governed by a Management Committee ...”*

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From its inception the Institute was governed by a Management Committee, meeting monthly, supported by a Finance and General Purposes Sub-committee and a Library Sub-committee. Specialty Sections were formed for Dentistry, Psychiatry, Anaesthetics, and Orthodontics. The Midland Medical Society also became a Section. These were functionally self-contained but reported to the Management Committee. The officers were those of President, two Vice Presidents, Honorary Treasurer, Honorary Secretary, and Honorary Librarian.

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*“Income ... came from subscriptions”*

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Income for rental and administration of the building and purchase of books came from subscriptions paid annually by members, duly nominated and approved by the Management Committee. Subsequently, income was received from rental of offices to the British Medical Association (BMA) and the Local Medical Committee (LMC).

In addition to library facilities, members were invited to attend lectures on medical subjects pertinent to the time as well as social gatherings, musical evenings being a favourite feature.

The BMI took over publication of the Birmingham Medical Review (BMR), the origin of which is as yet unknown. This was published quarterly, and for a time monthly. Its purpose being to report topical medical affairs of Birmingham, update information on books added to the BMI library,

present historical articles and record eponymous lectures delivered at the Institute.

In addition to library duties, the librarian maintained a register of medical locums, nurses and male attendants and also arranged hire of surgical instruments to members of the Institute. In 1906 an arrangement was made with the University of Birmingham for members of the Institute to consult books in the University Library with a reciprocal arrangement for members of the University.

The First World War caused a decline in BMI membership and financial income. This resulted in the temporary demise of the BMR. The Institute survived reduction in income but despite vain hopes of a post-war revival of membership, the Edmund Street lease had to be sold to avoid bankruptcy. The acquisition of a disused warehouse in Great Charles Street provided a temporary home for the books and there was limited office accommodation at the front of the building. With its re-opening, members of the medical profession rejoined the BMI with enthusiasm. Clinical meetings were held in a long hall lined by oak shelving of library books. The BMA returned as a partner bringing meetings on medico-political topics for discussion. In

1926 The BMR was again published, reporting on medical society meetings, reviews of recently published books, and historical articles of medical and dental interest. In addition it published Hospital Outpatient timetables that proved to be indispensable for General Practitioners. Reports of the GP Panel Committee appeared regularly and for this publicity the LMC made a financial contribution to the BMI. But the Second World War halted progress. In 1939 the older books were packed in tea chests and sent for protection to the University Library at Edgbaston. The BMI building did not suffer from bomb damage but again there was a decline in membership causing financial strain. After the war the books were returned to Great Charles Street but the building was subsequently sold to make way for road widening.

### **BMI Library, 36, Harborne Road**

The Institute moved in 1957 to 36, Harborne Road, a property leased from Calthorpe Estates. Due to lack of space, the Antiquarian Book Collection was placed on permanent loan to the University of Birmingham Barnes Library. This move provided safe housing for the books but

limited their availability to members. The building in Harborne Road included a lecture theatre for around 120 people, a small library for major medical journals with a selection of specialist journals, a committee room and an office. In 1969 an extension to the building provided offices for the Local Medical Committee and the British Medical Association and an entrance foyer with a bar that was well frequented prior to both lunch-time and evening meetings. A small cottage for a resident caretaker was later added.

Regular meetings on current medical developments were organised for members by an Education Sub-committee that provided postgraduate

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#### *The library.*



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medical education for general practitioners of Birmingham and the surrounding area. Eponymous lectures were established in obstetrics and gynaecology in memory of Lawson Tait and another on occupational (industrial) medicine in memory of Sampson Gamgee, this being supported financially by the Birmingham Hospital Saturday Fund. The BMI became a Registered Charity with a set of Rules approved by a Management Committee that now included an Honorary Secretary who was responsible for the organisation of all activities.

## **Impact of Postgraduate Medical Education**

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### ***“Development of Postgraduate Medical Education (PGME) ...”***

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Development of Postgraduate Medical Education (PGME) on a national basis followed the Christ Church Conference of 1963. This resulted in the building of PGME Centres in NHS hospitals. Funds had to be obtained from donations and Centres registered as a charity but once established the centres were staffed and maintained by local Hospital Management Committees. Some financial support also came from the Regional Hospital Board through a Postgraduate Committee chaired by the Postgraduate Dean who was appointed by the local University Medical School. Hospital based postgraduate centres provided training for junior hospital staff and continuing education for general practitioners and consultants. Section 63 of the GPs Charter gave provision of financial support for those attending PGME sessions and some Health Authorities also included the provision of accompanying meals. Each centre had a medical library of current journals and books that was funded by the Hospital Management Committee.

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### ***“... recognition as a postgraduate centre was declined by the postgraduate dean.”***

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To counteract these changes the BMI’s administrative structure was enlarged by the formation of a General Committee of 15-20 members supported by Sub-committees – Finance and General Purposes, Educational Services, Library and Social Committee. A postgraduate tutor was appointed to be responsible for organising Symposia,

Surgical Workshops for GPs and a Forum on Medical Ethics. Affiliated Membership for non-medical/dental persons and courses for Practice Nurses was introduced. In recognition of its work a financial grant was awarded to BMI by the West Midlands Regional Health Authority but recognition as a postgraduate centre was declined by the postgraduate dean. In spite of efforts by the postgraduate tutor and the staff at BMI the educational activities of the Birmingham Medical Institute became severely reduced.

## **BMI Medical Social Club**

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### ***“... mainly a social meeting place ...”***

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As a consequence of postgraduate medical education being undertaken by local hospitals the Institute became little used as either a library or education centre. The age balance of those attending also changed so that it became mainly a social meeting place for established and retired Birmingham medical and dental staff. Functions included an Annual Dinner, a Summer Dining Night, dinners with a speaker each month, wine-tasting evenings, an Arts Club, and a Bridge Club. Antique shows, and outings to such places as Stratford-upon-Avon and Worcester were organised. Occasional musical performances by members also took place. Book Fairs were organised by booksellers and Exhibitions by pharmaceutical and medical instrument manufacturers. There was a limited educational activity, organised by the postgraduate tutor, in the form of GP lunchtime meetings, occasional symposia and lectures. The Sands Cox Society held their meetings in the hall as well as the Doctors’ Wives Association, meetings to support medical charities such as the Medical Benevolent Fund and a Ladies flower club. The Birmingham Medical Review was revived but this was for a small number of issues. In the 1960s functions were all well attended but with time attendance declined and in recognition of this the administrative structure was reduced to a General Committee. Membership was also declining and with it income that largely came from subscriptions paid by members, with a little from rental of rooms to the Birmingham Branch of the BMA and the LMC. Council appreciated that in 2013 the rental paid to Calthorpe Estates would rise considerably and that any significant increase in activity would require structural improvement. There was

therefore much discussion on the future of the Institute including possible financial stability being maintained from the sale of books in the Antiquarian Book Collection and also possible closure. While there was much discussion no decision was made.

## **BMI Conference Centre**

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### *“Significant competition ... Metchley Park Postgraduate Medical Education Centre ...”*

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Major change in PGME occurred again with the 1990 reorganisation of the NHS when PGME Centres became financed and controlled by the Regional Postgraduate Medical Education Committee, later termed “the Deanery”, instead of by the local District Health Authority. Trainee posts were established, appointed and financed by the Deanery that became part of the Strategic Health Authority (SHA). A change in delivery of education was occurring with widespread use of computers, E-learning and didactic lectures replaced by discussion groups. Significant competition to the BMI followed the opening of the Metchley

Park Postgraduate Medical Education Centre located near the Queen Elizabeth Hospital. A proposal to amalgamate the Institute with this new PGMC was rejected on the grounds that the BMI should remain an independent body.

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### *“Antiquarian book Collection should be sold.”*

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The ending of the lease in 2013 was coming ever closer so that serious consideration had to be made by the General Committee regarding the means of financial survival. Apart from amalgamation with the Metchley Park PGMC, affiliation with the Royal Society of Medicine, the Association of British Pharmaceutical Industries and the University of Birmingham Medical School were all considered. Finally in 2008 it was decided that income could be raised by the development of a BMI Conference Centre. This would require considerable structural improvement particularly drainage and resurfacing of the car park, installation of state-of-the-art lecture facilities in the hall and library, and upgrading of offices for modern computer use. The cost of this could be borne out of financial reserves with future income accrued from payment for lectures and teaching courses.



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*The BMI Conference Centre.*

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*The lecture hall.*

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It was appreciated that such a major development required a supervisor so that a Director of the Institute with an office and clerical support was appointed in January 2009. Along with the renovation the various locations within the building were named – Lawson Tait Hall, Fabian Evans Foyer, Anthony Hockley Rooms, Sampson Gamgee Committee Room and Solomon Wand Room. A tighter administration was established with Job Descriptions and a new set of Rules. Committees had Terms of Reference and regular dated meetings. A new category of membership, Honorary Fellowship was introduced for those considered by Council to have given outstanding service to Medicine in Birmingham and the West Midlands. To organise the teaching component an Education and Training Committee was formed with a Training Manager and representation from the Deanery. An extensive programme of courses, lectures, and seminars with prestigious speakers was prepared including some in association with the Royal Society of Medicine, London. These educational activities were accepted by the Deanery for CPD accreditation. Sadly, there was a poor response in attendances by the medical profession. Lectures for the general public on matters concerning public health attracted no audience. A possible cause was uncertainty caused by the proposal in the next reorganization of the NHS that financial support for PGME would be replaced by Appraisal and Revalidation. On

completion of the renovation of BMI the bills had to be paid and no new money was forthcoming. Council accepted that further proposed developments had to be shelved and once again closure had to be considered. The Director, with agreement of Council, decided to leave, the post and office being closed in August 2011. To avoid bankruptcy, the BMI Council decided that the Antiquarian book Collection should be sold. This was put in the hands of Dominic Winter Book Auctions who successfully raised sufficient money to pay the creditors, permit essential renovation and allow negotiations on continuing rental of the building to be concluded.

## **BMI Present and Future**

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*“The Education and Training Committee was reconstituted ...”*

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With an improved financial basis the Institute was able to move forward once again. The post of Administrator was introduced and the Finance and General Purposes Committee revived. The Education and Training Committee was reconstituted including membership of personnel concerned with the organization and training for medical

general practice. They produced an education programme that encouraged attendance by members of private medical sector as well as by the non-medical or dental professions. As a consequence, good support followed for courses on Women's Health and Men's Health, updates on Paediatrics, Dermatology, Ophthalmology and Cardiology. Tuition on clinical procedures such as Cardio-Pulmonary Resuscitation and Joint Injections became popular. In addition, a Social Committee was formed to organise Talk Lunches and Talk Dinners along with a series of Medical History meetings organised with the Department of Medical History, University of Birmingham. As ever, outside events had an important influence. Hospital postgraduate centres were in decline including the closure of the Metchley Park PGME Centre, so removing some of the local competition to the Institute. The reorganization of the NHS favoured private independent organisations as opposed to governmental bodies, so that general practitioners themselves could choose how they obtained their continuing medical education. With the demise of the SHAs the Deaneries became part of a Local Education and Training Board (LETB) that was supervised by NHS England. Overall these changes were beneficial to BMI so that in spite of continuing volatility in

the health services, the BMI continues to flourish. Future development will be influenced by Calthorpe Estates projects of Edgbaston Village and Edgbaston Medical Quarter.

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### ***"... why has the BMI survived?"***

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After so many vicissitudes and the closure of most similar medical institutions the question remains – why has the BMI survived? The most likely explanation is its operational flexibility as a private independent organization coupled with a determination by its Council, officers and loyal staff that it will continue to survive.

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#### *Acknowledgments:*

*Information included in this review was obtained from articles in the Birmingham Medical Review (BMR) particularly those by Brian Gough (Honorary Librarian, 1986) and minutes of BMI General Committee, later Council.*

## **THE 2014 SANDS COX SOCIETY AGM**

will be held on

**Friday 3rd October 2014, at 10.15am,**

at the Birmingham Medical Institute, Harborne Road, Birmingham

### **'The New University Hospital Birmingham: A Step Change in Health Care Delivery'**

*Guest lecturer:* MR TIM JONES (Executive Director of Delivery, QE Hospital)

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### **'From Pebble Mill At One to a New Dental School'**

*Guest lecturers:* PROFESSOR PHILIP LUMLEY (Director and Head of School of Dentistry)

DR DAVID ATTRILL (Senior Lecturer and Honorary Consultant in Restorative Dentistry)

There will be a meal at lunchtime.

# Project TransArc

Michael Cox, Final Year Medical Student

*“Memory is the store room of the mind, a dusty attic of experience stacked with knowledge, sometimes useless, sometimes priceless. Once in a while we must lift the shades, dust off the years, and with our souvenirs seek to recapture the past. For there lies reason for the present and vision for the future.”*

The following article related to a concept I first suggested in my Fresher’s Year, but was only able to pursue during the elective thanks to the kind help of the Sands Cox Society.

## Introduction

**I**n the UK 2525 people were transplanted with either a donor kidney or liver during 2012-2013; however this represents only a fraction of those on the organ transplant waiting lists.

***“Not all organs offered for donation are accepted, with many rejected on suspicion that they may function inadequately.”***

Currently donation is by voluntary registration on the organ donation register and donors are split into 2 main groups;

1. Donation after Brain Death (DBD)
2. Donation after Cardiac Death (DCD)

Numbers of organs from DCD donors have steadily been increasing with DBD organs decreasing in comparison. Not all organs offered for donation are accepted, with many rejected on suspicion that they may function inadequately. In addition, the method of cold static storage currently used leads to damage of the donated organs. This potentially results in further loss of organ function. This damage can be split into 3 phases;

1. Warm ischaemic injury
2. Cold ischaemic injury
3. Ischaemic/Reperfusion injury

Warm ischaemic injury occurs when the organ remains at body temperature (normothermia) but is deprived of adequate blood flow. This occurs until a flow of cold preservation solution can be established and the organ cooled, where upon the cold ischaemic injury phase begins. Once perfusion is re-established by anastomosis of the donor-recipient vessels, the organ is warmed back to normothermic conditions leading to ischaemic/reperfusion injury.

***“It is only until the implantation procedure that the surgeon can be certain of the functionality of the organ.”***

The current storage method has inherent problems and limitations. By removing an organ from physiological conditions, the organ is damaged along with the inability to assess primary function and viability. It is only until the implantation procedure that the surgeon can be certain of the functionality of the organ. A solution to these problems is to retain the organs in physiological conditions throughout the transplant process. This would potentially limit damage caused to the organ and also allow assessment of viability. One method of achieving this is via a normothermic perfusion protocol.

## Normothermic Perfusion

Normothermic perfusion replicates the basic function of the body; providing a supply of nutrients and oxygen whilst removing waste products at body temperature. In its very basic form a Normothermic Perfusion Machine (NPM) could therefore consist of a pump and oxygenator in series with the organ. In order to mimic physiology better a mechanism to vary perfusion pressures, a system to remove waste products, a way of varying CO<sub>2</sub> and O<sub>2</sub> levels and also a system of monitoring with feedback loops are also desirable. To create a universal device which is capable of perfusion of both liver and kidneys, two perfusion loops are needed in parallel circuits to allow perfusion of both the Hepatic Portal Vein and Hepatic artery, as can be seen in the diagram below.

Time is set aside during the 4th year of the Medical course to experience different aspects of health care. Due to my personal interest in Medical Engineering and Transplant Medicine, I took this opportunity to work upon the idea of Normothermic Perfusion. The aim was to design and create such a NPM, incorporating components already in general use where possible to reduce costs.

### **Pump Design and High pressure Reservoir**

Two designs for a pump were considered appropriate for a NPM, centrifugal and peristaltic. Commercially available perfusion systems such as OrganOx Metra use centrifugal pump technology. This product is simple and provides a constant flow of perfusate, but may cause increased haemolysis of the red blood cells used in the perfusate. They also require replacement of the impeller on every run which adds further cost. Peristaltic pumps offer an alternative to the centrifugal pump, having the advantage of causing less haemolysis and reduced consumables costs. A disadvantage is the pulsatile flow of perfusate which the pump delivers. It is unknown whether this has adverse effects on organs, as the natural pulsatile flow provided by the heart is “smoothed” via the elastic fibres of the arteries.

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***“The pumps were custom designed and built during the elective period by myself and tested for multiple 12hr run periods without issues.”***

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Final designs created during the elective period centred on the inclusion of 2 pumps, each with a capacity of 2000ml/min. This layout was chosen to allow perfusion of multiple different types of solid organs as well as allowing the NPM to be used for bridging Extracorporeal Membranous Oxygenation (ECMO). The pumps were custom designed and built during the elective period by myself and tested for multiple 12hr run periods without issues. The pumps were tested in the first of 3 developmental prototypes, the  $\Delta X-1$  (see later) providing useful design data for additional components of the device.

### **High Pressure Reservoir (HPR)**

As stated previously, the flow from a peristaltic pump is pulsatile. In the body, elastic recoil provided by elastic fibres

in the walls of the arteries modulates flow, allowing delivery of blood at an almost constant pressure to the capillary beds. It is impractical to use elasticated tubing in place of the arteries; however the recoil can be mimicked using an adaptation of Boyle’s law. The final design to be tested on the  $\Delta X-2$  prototype will use a pneumatic cuff around a perfusate chamber to modulate flow. During the occlusive phase, the pressure of the pneumatic cuff will exceed that of the perfusate loop and thus drive perfusate forward, smoothing out flow.

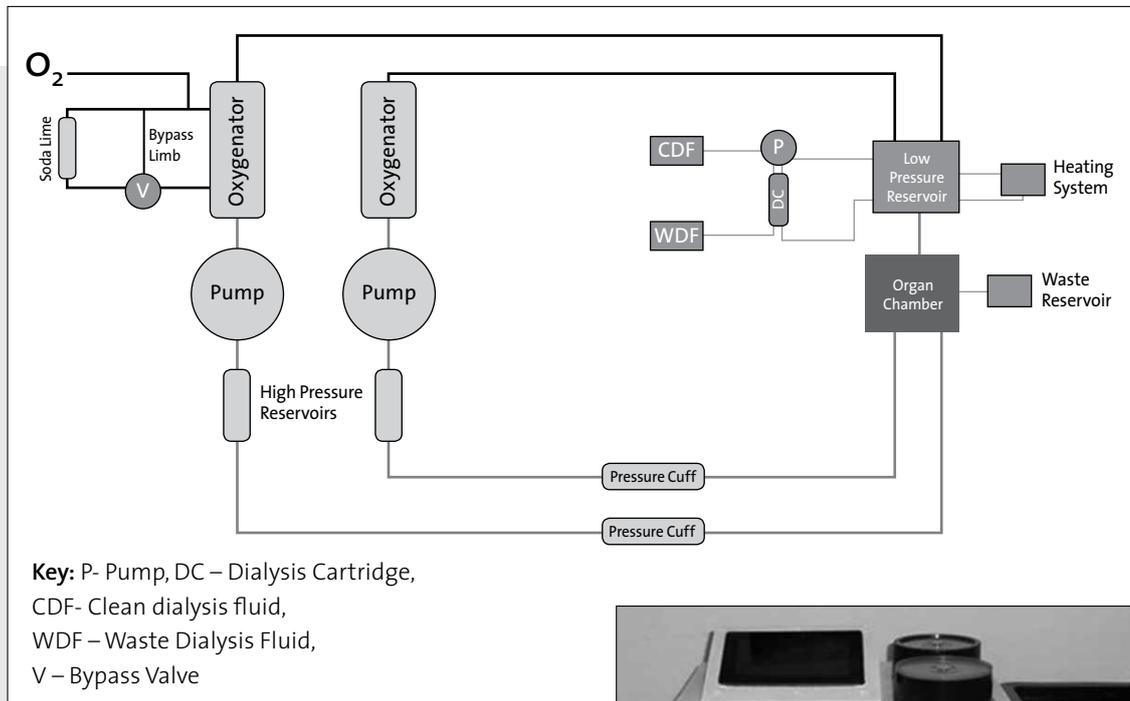
### **Pressure Control cuffs (PCC)**

Perfusion pressure of an organ can be altered through the contraction or relaxation of smooth muscle in the walls of the arteries; a good example of this is the auto-regulation in the kidneys. This relationship between flow rate, pressure and radius is described by Poiseuille’s law which states that change in pressure is inversely related to the fourth power of the vessel’s radius.

Studies suggest that by modulating perfusion pressure during the initial period of organ recovery, warm ischaemic damage may be limited thus greater organ function preserved. Consequently in the designs for my NPM a mechanism to vary lumen radius has been incorporated using hydraulic cuffs around a flexible chamber. This system will allow control of the perfusion pressure and so facilitate mechanisms of reducing warm ischaemic damage as well as allowing artificial auto-regulation when vasodilator drugs are present.

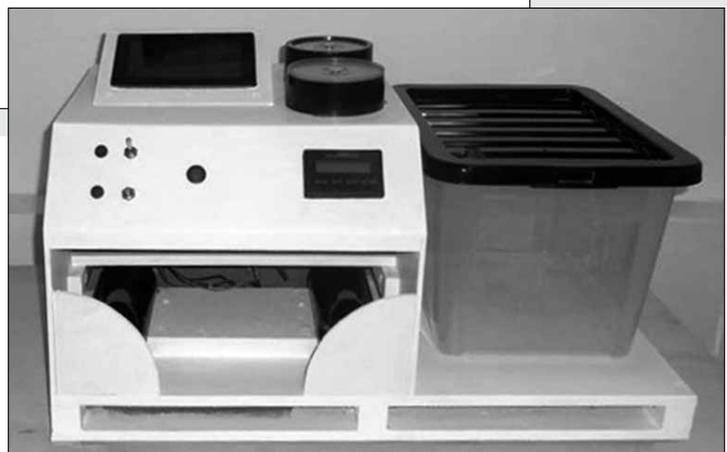
### **Oxygenator system**

Most systems which require oxygen carrying capacity use red blood cells in the perfusate, much like blood in the body. This is also true for my NPM which is designed around a RBC containing perfusate. Oxygenation is achieved using a commercial oxygenation cartridge system such as those already in ECMO systems. These cartridges allow effective removal of all  $CO_2$  and oxygen saturation of the perfusate. Designs of the oxygenation system evolved during the elective period, starting with a simple external source of  $O_2$  providing oxygen to the oxygenator and venting the removed  $CO_2$  into the atmosphere as is standard with other NPMs. The final design that will be tested on the second prototype ( $\Delta X-2$ ), mimics the respiratory system more closely (Figure 1). This system allows regulation of both



Right: Figure 1.  
 Design schematic.

Below: Figure 2.  
 ΔX-1 prototype.



O<sub>2</sub> and CO<sub>2</sub> levels and thus a degree of respiratory compensation for pH disturbances can be achieved. Carbon dioxide will be removed using Soda lime, with the produced heat being used to aid in the maintenance of normothermic conditions. As prolonged run times are envisaged, multiple changes of the Soda lime may be required, and therefore two cartridges in parallel have been included in the design with gas monitoring before and after. When CO<sub>2</sub> removal becomes inefficient, gas flow will be redirected to the alternate cartridge, allowing exchange of the spent cartridge for a new one.

## Dialysis Loop

In the body multiple systems are present efficiently to remove waste products. Isolated organs may not contain all these systems subsequently leading to accumulation in the perfusate, resulting in damage to the organ. A dialysis system has been included in the final design of the device to limit this, drawing perfusate from the low pressure reservoir and passing it through a dialysis cartridge at the same time as clean dialysis fluid (Figure 1). As the system is balanced in hydrostatic and osmotic pressures, no fluid transfer will occur during the dialysis. As studies have shown that metabolites such as lactate do not build up until late in the perfusion runs, it is not necessary to have the dialysis

system constantly active. Therefore it is linked to a perfusate monitoring system and only activated when required.

## Developmental Prototypes

Although it would have been possible to construct a full prototype from the designs created during the elective period, time constraints meant construction was split across 3 developmental prototypes

1. ΔX-1: Designed to test layout and pumping capacity
2. ΔX-2: Designed to test oxygenation, resistance, heating and control systems
3. ΔX-3: Pre-Production Prototype to test full system setup

To date the initial layout and pumping capacity tests have been carried out on the ΔX-1 prototype (Figure 2), showing

promise. This is currently in the process of being converted into the more complex  $\Delta X-2$  format to test the oxygenation and pressure control systems which will be incorporated in the final design. The final prototype  $\Delta X-3$  will include all necessary analysis and control equipment to conduct testing to validate the concept of normothermic perfusion against cold static storages. These initial tests will take place using animal models.

### Operational deployment

The NPM is primarily designed for the transportation of organs after recovery. During transportation the organ can be maintained in physiological conditions and its viability for transplant assessed. It can also be subjected to protocols designed to aid in its survival. These protocols include the Post-conditioning for the limitation of warm ischaemic damage and Pre-conditioning for the limitation of ischaemic/reperfusion injury. These protocols have been successfully trialled on organs such as the heart and kidneys, and may aid in organ survival. They however have an optimum window for deployment, requiring activation at the appropriate time for maximal clinical benefit.

Prior to organ transportation, the device may be used for bridging ECMO to maintain perfusion of the abdominal organs during recovery. By cannulation of the aorta and inferior vena cava via the femoral vessels, the output of both pumps could be combined. This would make it possible to perfuse all of the abdominal organs for a limited period of time and thus limit warm ischaemic damage by restoring perfusion after the 5 minutes hands off period. Therefore, an entirely new recovery protocol can be generated, where ischaemic damage to the organ is minimized as far as possible (Figure 3).

Such a use of the NPM would not require the dialysis system or infusion sets and so fewer consumables for the bridging ECMO deployment would be required. Additionally the final NPM layout is designed around a cartridge system; the quick change from bridging ECMO to organ transport modes would take very little time and thus result in little ischaemia.

An additional use of the device may be for isolated organ testing of new drugs and biological agents, offering an alternate way to test agents in human tissue models.

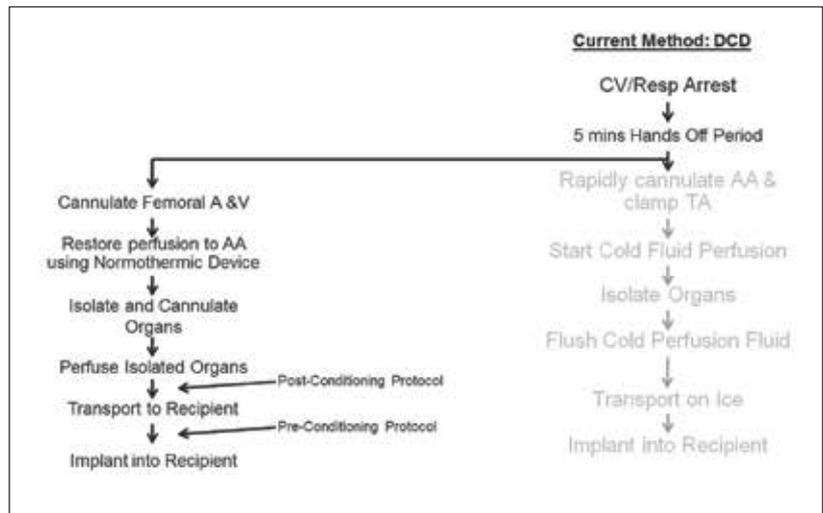


Figure 3. Current and proposed recovery protocols.

This may provide a beneficial use for organs which have been donated to help save lives, but are not viable for transplantation.

### Conclusion

In conclusion this article documents the key points of my elective project centred on the generation of a normothermic perfusion machine. Although it was possible to design the device and study its use and costs during the designated elective period, it was not possible to construct a full scale prototype. Initial prototypes were constructed to test the layout and pumping components, with progress being made towards testing the oxygenation and pressure control systems. Whether the final device does indeed provide an advantage over cold static storage remains yet to be clarified. However, if normothermic perfusion does result in less damage as well as allowing viability testing, the implications on organ transplantation may be widespread. These may culminate in more organs being available for donation. This may be of increasing significance in the future, where an aging population with an increased burden of obesity related diseases is predicted; factors which may have compound effects on increasing the demand for transplantation, but also decreasing the quality of available organs.

I would like to conclude by once again thanking the Sands Cox Society, without whom, this project would not have been possible.

# Dilemmas in the neonatal setting:

## Palliative care, withdrawal of intensive care and their health and economic impacts

Joseph Higginbotham-Jones, Final Year Medical Student

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### Introduction

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*“... the withdrawal of intensive care ...”*

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**D**uring my elective, on the neonatal unit (NNU) at Birmingham Women's Hospital (BWH), I aimed to expose myself to and reflect on the difficult decisions made by clinicians and parents on a daily basis, with regard to the withdrawal of intensive care and the subsequent process of palliative care.

### Literature review

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*“... outcomes of neonates are always hot topics of discussion ...”*

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The short and long term outcomes of neonates are always hot topics of discussion within both medical and non-medical communities. As recently as December 2012, the results of a large study looking into the improvement of short term outcomes for extremely preterm infants in England from 1995 to 2006, were well publicised. It stated that the number of babies born at 22 to 25 weeks gestation surviving to discharge from hospital increased from 40% in 1995 to 53% in 2006. Survival increased at each additional week of gestational age by 9.5% at 23 weeks, 12% at 24 weeks and 16% at 25 weeks. However, when looking into changes in neonatal morbidity between the two cohorts, there was no change in the rates of bronchopulmonary dysplasia and major cerebral injury. In addition to this, more babies left hospital requiring supplemental oxygen in 2006 compared with 1995. Whilst at a glance this study may lure anyone into thinking that outcomes are improving for this group of patients, key questions regarding long term outcomes

and subsequent quality of life were not answered. Another study performed by the same group looked into neurological and developmental disability in 30 month old ex-premature infants born at or less than 25 weeks' gestation. The results showed that 19% of patients developed cerebral palsy and 10% developed severe motor disability. A large meta-analysis published in 2009 looked into the long-term effects of very preterm birth on outcomes such as academic achievement, behaviour and attention. The results showed that very preterm children scored 0.6 standard deviations (SD) lower on mathematics tests, 0.48 SD lower on reading tests and 0.76 SD on spelling tests, compared with term-born children. In addition to these neurodevelopmental sequelae, many children are discharged from hospital requiring long-term oxygen therapy for bronchopulmonary dysplasia and other forms of long-term treatment for medical problems resulting from the complications of premature birth. Some children may also have to attend non-mainstream schools which can cater for their additional learning needs. These long-term commitments invariably lead to a poorer quality of life for the children, their parents who have the added stresses of providing more specialised care, and their siblings who often don't receive the same amount of attention as they would normally.

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***“... increase in the number of difficult ethical decisions ...”***

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Despite the advancement of neonatal intensive care improving survival rates in even the youngest premature babies, long-term sequelae have not reduced in incidence and, if anything, have increased. The associated poor quality of life has led to an increase in the number of difficult ethical decisions which parents and clinicians have to make regarding whether to attempt resuscitation in the first place or whether to withdraw intensive care later down the line. These decisions have also led to a crucial role for palliative care in this clinical setting.

### **Withdrawing intensive care**

The withdrawal of intensive care will always be a subject which sparks hot debate. Doctors disagree across Europe, the United Kingdom (UK) and even within hospitals, about the ethics, legality and morality of withdrawing intensive care in the neonatal setting. A study published in 1999

investigated and compared the practice of care withdrawal in neonates across Europe. The authors found that attitudes and practices varied widely between countries. For example, according to Italian law, doctors always have an obligation to treat unless a competent adult refuses consent. In neonates, non-treatment for severe congenital malformations or neurodevelopmental dysfunction is considered a form of discrimination in the eyes of the law, and doctors therefore have their hands somewhat tied with regards to decision making. In contrast, in The Netherlands, although prohibited by law, cases of active euthanasia in neonates have been legally pardoned, with doctors arguing that the relief of suffering is paramount to preserving life at all costs. A survey revealed that as many as 45% of neonatologists and intensive care physicians had deliberately and actively ended the life of a child. Countries including the UK, France, Luxembourg, Germany and Sweden, some more recently than others, adopt practices somewhere along the spectrum between Italy and The Netherlands. In these countries, active euthanasia is illegal and regarded as murder but the passive withdrawal of intensive care to reduce suffering is legal and in appropriate cases encouraged.

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***“... end of life decisions.”***

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The findings of these studies demonstrate the difficulties which doctors face regarding end of life decisions. Although laws throughout Europe are similar, their interpretation varies considerably, leading to a range of different practices by neonatologists in different centres. Even in countries such as the UK, where the withdrawal of treatment is an accepted aspect of medical practice, there is some degree of uncertainty surrounding the exact limits of this practice. More legal clarification and improved clinical guidelines would help doctors and families to make these already difficult decisions with the knowledge that they won't be prosecuted in Courts of Law. However, it is difficult to develop a guideline which is applicable to all cases: what is considered an intolerable burden between families depends on culture, religion, finances and many other factors.

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***“Palliative care has an ever increasingly large role to play ...”***

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## **Palliative care**

Palliative care has an ever increasingly large role to play in almost all fields of medicine. Due to the nature of the patients in neonatal medicine, it perhaps has even more of an important role to play in this setting than many others. When performed correctly and appropriately it can bring some degree of comfort for patients, families and staff, to even the most distressing situations.

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***“... not a single pathway used as a standard of care nationwide ...”***

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Whilst performing an extensive online search of the literature for guidelines and frameworks for neonatal palliative care I found it interesting that there was not a single pathway used as a standard of care nationwide. I found a variety of different pathways, with similar themes, published by ACT6 (a neonatal charity) and the British Association of Perinatal Medicine. However, on searching for national guidelines from the National Institute of Clinical Excellence (NICE) or the Royal College of Paediatrics and Child Health (RCPCH), I could not find anything published. After contacting a member of staff at the RCPCH I was informed that guidelines were currently being constructed but were not ready for publication yet. This helped me to understand the difficulties and uncertainties which clinicians face regarding the appropriate withdrawal of care and implementation of palliative care in neonates, when they are not backed up by nationally used guidelines. Having had personal and professional experience of the benefits of the Liverpool Care Pathway used in adults, I believe a similar pathway for neonates would have a positive impact on patients, families and staff.

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***“... economic impacts have to be taken into consideration ...”***

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## **Economic impact**

Although it is not a topic which clinicians ever want to talk about when it comes to patient care, economic impacts have to be taken into consideration. The National Health Service (NHS) is already overstretched financially and in the neonatal

setting, providing even just a few hours of inappropriate intensive care to babies who should medically, ethically and morally be cared for palliatively, can have huge financial implications. In 2008-09, one day of neonatal special care costs £476, one day of high dependency care costs £759 and one day of intensive care costs £1081. The costs of palliative care vary depending on the level of care provided. Some babies may just be extubated, handed over to the parents and allowed to pass away without any intervention or monitoring. Others may be given pain relief or other medications. Despite this variation, palliative care invariably incurs lower costs than prolonged stays in intensive care units. Although saving money may not provide much motivation to many doctors, the appropriate use of the finite resources which the NHS possesses may improve the quality of care which could be provided for a larger number of patients. At the same time, babies for whom intensive care would not improve their outcome would be managed with palliative care which would be in their best interests.

## **Case comparison**

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***“... benefit patients and ease their suffering ...”***

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During my time on the NNU I encountered two cases which I felt provided perfect evidence of how the withdrawal of intensive care and initiation of palliative care can be used effectively to benefit patients and ease their suffering whilst also shortening the emotional distress experienced by the parents and staff.

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***“... congenital myopathy ...”***

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The first case was that of a small for gestational age baby born at 38<sup>+2</sup> weeks with oesophageal atresia diagnosed on antenatal ultrasound scanning. He was born with Apgar scores of 2 and 3 at 1 and 5 minutes respectively. The baby was hypotonic, with poor respiratory effort so intubation and ventilation were required, and limb malformations were also noticed. After consultation with the genetics team, it was found that the baby had a congenital myopathy which was deemed to be too severe for him to survive. The diagnosis and prognosis were discussed with the parents

and everyone involved came to the agreement that the best course of action would be to withdraw intensive care, commence palliative care and allow nature to take its course. Three days after birth this plan was put into action, and one hour after the removal of ventilation the baby died in his parents' arms.

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***"... multiple congenital abnormalities ..."***

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The second case was that of a small for gestational age baby born at 38<sup>++</sup> weeks gestation with multiple congenital abnormalities and a left sided diaphragmatic hernia. She was born with Apgar scores of 9 at 1 and 5 minutes. The hernia was successfully surgically repaired at Birmingham Children's Hospital (BCH), however on her return to the NNU concerns were raised regarding abnormal neurological function including poor sucking and uncoordinated swallowing. Formal neurological assessment and magnetic resonance imaging (MRI) indicated structural abnormalities including microcephaly, a small cerebellum and large lateral ventricles. The baby was discussed at a multi-disciplinary team meeting where it was confirmed that she had a poor prognosis and that intensive care would not improve her long term outlook. It was recommended that intensive care should be withdrawn followed by the commencement of palliative care. The parents were reluctant to accept this, however after careful discussion with senior staff, a plan was drawn up to withdraw intensive care and discharge home, several weeks after birth, with some basic equipment such as oxygen cylinders and simple face masks.

These cases exemplify the difficulties which medical staff face regarding end of life decisions in neonates. One of the greatest being if a family does not accept or agree with the decision that their child should no longer be intensively treated as it is deemed futile. I can empathise with families in this situation and I believe they are well within their rights to question and even disagree with doctors' decisions, but it can create an awkward situation where neonates are undergoing intensive care when it is not in their best interests. I felt that the cases perfectly exhibited two ends of the spectrum of the appropriate use of palliative care after the withdrawal of intensive care. In an ideal world, all patients would be managed as quickly and with as much

dignity as the first example but this often is not the case for myriad reasons. Such conflicting cases provide further evidence that guidelines used on a national scale would provide clarification and assistance in these clinical settings.

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**Conclusions**

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***"... difficult end of life decisions ..."***

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My elective gave me a fantastic opportunity to work in an unfamiliar area of medicine and see how they go about making difficult end of life decisions on a near daily basis.

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***"Nationwide guidelines would be helpful ..."***

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Although guidelines do exist regarding withdrawal of intensive care and commencement of palliative care, there are variations in practices across Europe, between UK centres and even between doctors working in the same centre. Nationwide guidelines would be helpful in giving staff more assurance and confidence to know when to stop futile intensive care. I also feel that further legal clarification regarding the exact limits of the practice of withdrawal of care is required.

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***"... huge economic impact..."***

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The appropriate provision of palliative care and a reduction in the number of inappropriate hours or days of intensive care in this group of patients could have a huge economic impact. It would allow resources to be used more effectively and would have a positive impact for a larger number of patients.

Overall, my elective was a very enjoyable and educational experience. I learnt a lot about the medical and ethical aspects of this branch of medicine and came away from it with a greater understanding of the difficulties faced by all of the people involved in the withdrawal of intensive care and the initiation of palliative care in neonates.

# Translational Research in Birmingham: a Focus on Chronic Lymphocytic Leukaemia

Graham McIlroy, Final Year Medical Student

## Introduction

**E**vidence-based medicine is a fundamental tenet of modern medical practice, and is enshrined in the GMC's Good Medical Practice. For many clinicians, this means treating patients according to the most appropriate and up-to-date guidelines. However, a considerable amount of work is required to generate guidelines, including research into the basic biological processes behind health and disease, drug development and clinical trials. During my elective period, I used the example of research into chronic lymphocytic leukaemia (CLL) in Birmingham to explore how the work of scientists and clinicians is adding to the evidence base in an effort to improve patient care.

## Translational research

The premise of translational research is to convert advances in basic biological understanding to improvements in health: the 'bench-to-bedside' model. However, the process of translational research is not straight forward. A number of steps are needed to translate novel biological discoveries into meaningful improvements in health. Research must pass through pre-clinical studies to clinical trials, then to meta-analysis and guideline development. There are several impediments to translational research. There is a perceived gulf between basic and clinical research, attributed to differences in training, research priorities, and funding and publication demands. It can be difficult for basic scientists to test their hypotheses in human subjects, and there is often little time for clinicians to pursue their own research interests. As well as cultural and philosophical differences between research schools, the vast amounts of bureaucracy

associated with trials are a disincentive to both basic and clinical scientists. When teams of scientists and clinicians work together within a supportive infrastructure, novel discoveries can be applied to medicine which leads to improvements in health.

## Chronic Lymphocytic Leukaemia

CLL is a malignancy of mature B lymphocytes in the blood. Predominantly a disease of old age it is the most common form of leukaemia and affects an estimated 24 000 people in the UK. According to the most recent statistics, survival rates of CLL are relatively favourable compared with other haematological malignancies, but are not improving. CLL is a heterogeneous disease, and outcome can be predicted by a number of prognostic indicators. Median survival decreases with advancing clinical stage, with increasing lymphatic involvement and bone marrow suppression. Similarly, molecular markers can predict survival. Patients with a non-mutated *IGHV* gene have a median survival of 8-9 years, whereas median survival of patients with a mutated gene extends to decades.

Since CLL can follow a long and indolent course, the decision to start treatment is usually in response to symptomatic disease such as bulky lymphadenopathy, bone marrow failure or constitutional symptoms (fatigue, weight loss, fever, night sweats). Treatment typically comprises cytotoxic chemotherapy and immunotherapy, and is based on the molecular characteristics of the CLL and the performance status of the patient. For the highest-risk patients allogeneic (donor) stem-cell transplantation is the only potentially curative treatment; however the risk of treatment-related mortality often prevents its use.

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*“It is therefore vital that there is a flow of new drugs from laboratories to the clinical setting, through trials and then into routine practice, so that patients can continue to enjoy life in remission and free of symptoms.”*

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In patients with progressive disease, standard treatment options are quickly exhausted, and allogeneic transplantation is often not appropriate or available. Continuing treatment can depend on entry into clinical trials. It is therefore vital that there is a flow of new drugs from laboratories to the clinical setting, through trials and then into routine practice, so that patients can continue to enjoy life in remission and free of symptoms. A number of groups at the University of Birmingham are working on CLL, and some of their research is detailed below.

### **Professor Stankovic: Understanding the DNA damage response**

Professor Tanja Stankovic’s lab looks at the DNA damage response pathway, and its role in CLL. The lab’s main focus is the ATM protein and the members of its signalling pathway. Studying these proteins in CLL patient samples allows the lab to understand their role. This includes their pathophysiology, their predictive and prognostic values as genetic markers, and the role of DNA damage in cancer more generally.

Genetic and genomic aberrations are hallmarks of many cancers, and are particularly common amongst haematological malignancies. In CLL, loss of the p53 tumour suppressor is associated with treatment resistance and poor survival. ATM is a DNA damage sensor, which signals upstream of p53 to inhibit the cell cycle or to induce apoptosis. Professor Stankovic found that ATM protein levels were reduced in 40% of CLL samples. The group then went on to show that ATM loss could impair the DNA damage response, and that ATM-mutated CLL cells are resistant to cytotoxic chemotherapy. The Stankovic lab continues to study the DNA damage response in CLL. One approach is by investigating how ATM- and p53-encoding genes are sequentially lost as a CLL cell population changes over time and in response to treatment. In addition, the lab is also exploring the basic biology of this pathway, and is already

identifying future drug targets. For instance, the PICLLe trial is exploiting the sensitivity of ATM-deficient cells to further DNA damage. This could provide new hope to a group of patients that currently have a poor prognosis.

### **Dr Cobbold: Innovating a novel immunotherapy**

Dr Mark Cobbold’s group works on a range of disease models using immunology research to develop new technologies and treatments. In an exciting and entirely novel approach, the lab is developing a treatment for CLL that directs the immune system to attack malignant cells using patient immunity to cytomegalovirus (CMV).

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*“By applying their expertise of viral immunology to molecularly-characterised malignant B-cells, the group has increased both the toxicity and specificity of an already effective treatment.”*

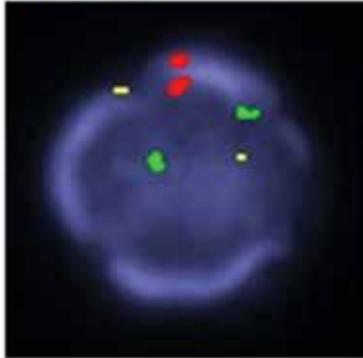
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Many new anti-cancer drugs are monoclonal antibodies, which specifically target the cell type involved in the cancer. This approach has been used in B-cell malignancies for a number of years, and rituximab is now an established component in the treatment regimen for CLL. CD20, the molecular target of rituximab is expressed at reduced levels in CLL, opening the possibility for some improvement of this immunotherapy. Dr Cobbold’s group has engineered an Antibody Peptide Epitope Conjugate (APEC) by linking a CMV epitope to the rituximab molecule. By applying their expertise of viral immunology to molecularly-characterised malignant B-cells, the group has increased both the toxicity and specificity of an already effective treatment. As the group continues to explore the details of its mechanism of action, Dr Cobbold hopes soon to test the efficacy of the APEC in clinical trials.

### **Professor Bunce: Understanding the niche, and redeploying drugs**

The lab of Professor Chris Bunce takes two approaches to develop treatments for CLL. The first is to understand the basic pathophysiology of CLL in order to direct rational drug

## Normal



Red = 17p  
Green = 11q  
Yellow = 13q

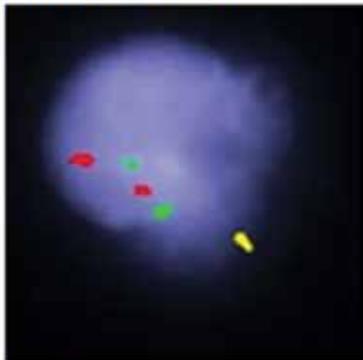
Figure 1: Fluorescent in situ hybridisation of malignant B-cells. Chromosomes are detected with fluorescent labels, and are normally present in pairs.

In CLL, chromosomes can be duplicated or deleted, which can be seen with the gain or loss of the fluorescent labels.

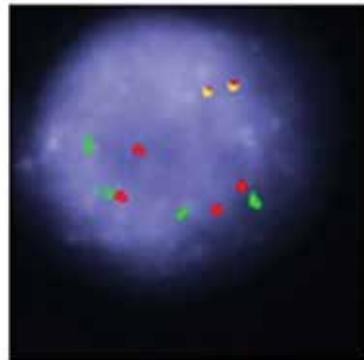
Different populations of cells can be detected in a single patient, and the proportions of normal and abnormal cells can change over time.

Image courtesy of Nicholas Davies and Prof Tanja Stankovic.

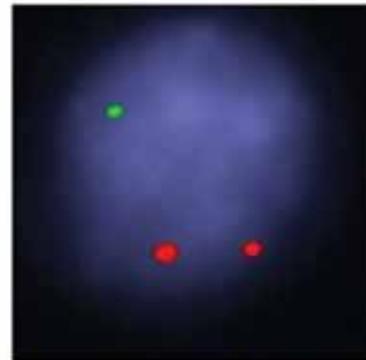
## Abnormal



Del 13q



2x gain 11q & 17p



Del 11q; del 2x13q

design. The second approach is to redeploy existing drugs used in unrelated conditions to CLL.

The lymph node is emerging as an important source of CLL cells. Disrupting this microenvironment is now a major focus for the development of novel drugs. A major focus of the Bunce lab is to determine the range of cells present and their communication in the lymph node. Interactions between T-cells and CLL cells involving the CD40 protein are of particular interest to the group: the aim is to establish these signals as a future pharmacological target.

The Bunce lab is also engaged in an expanding programme of drug redeployment. A major benefit of using established drugs is that they have complete pharmacokinetic and safety profiles, thus avoiding the need for lengthy and expensive pre-clinical and phase I studies. The group has screened a large number of drugs, and identified the combination of bezafibrate (a lipid-lowering drug) and medroxyprogesterone acetate (MPA, an oral contraceptive), which can induce apoptosis and prevent proliferation of cultured CLL cells. Following from this work, the BaP trial is currently investigating this drug combination in a phase II trial for safety and activity against CLL.

*“the BaP trial is currently investigating this drug combination in a phase II trial for safety and activity against CLL.”*

## Clinical Trials Unit: Taking novel drugs to trial

The translation of research findings into clinical trial data is facilitated by the Cancer Research UK Clinical Trials

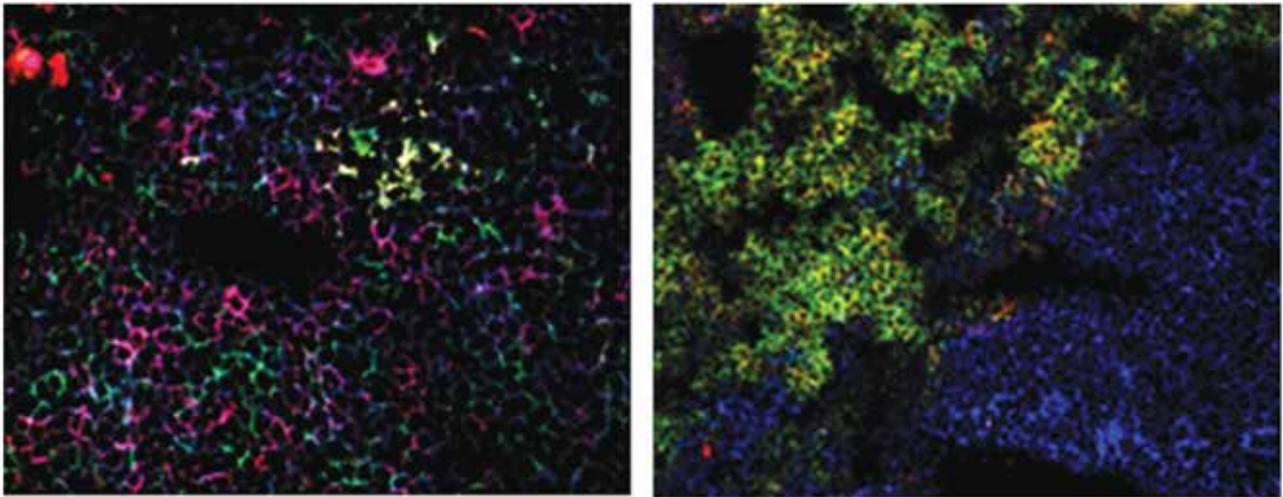


Figure 2: Fluorescent immunohistochemistry image of a lymph node.

Left: in a lymph node, there are many cell types present.

Right: the close interaction between T-cells (green) and B-cells (blue) is a potential target for future therapy in CLL. Image courtesy of Laura Cronin, Jane Birtwistle and Prof Chris Bunce.

Unit, a part of Birmingham's College of Medical and Dental Sciences. The unit is a single point of contact for biological and clinical researchers, and is involved in all areas of trial administration. There is a dedicated haematology team, which guides researchers through the initial stages of designing a trial, gaining funding, passing statutory requirements, recruiting sites and patients, to handling and presenting results. The unit also boasts experts in statistics and programming, ensuring that its trials are of the highest quality and rigour. The Clinical Trials Unit is an excellent resource for anybody engaged in translational research, serving to break down bureaucratic barriers. It is through this unit's efforts that the PICLLe and BAP trials are being run.

### Clinical guidelines: Turning evidence into clinical practice

The final step in the process of translational research is the generation of clinical guidelines. This gives doctors involved in the day-to-day care of patients access to the best evidence, and patients to the best care. The CLL guidelines are written by the British Committee on Standards in Haematology (BCSH), and cover all aspects of the disease. Professor Don

Milligan, former chair of the BCSH, co-author of the current CLL guidelines and consultant haematologist at Heartlands Hospital, believes that in the future it would be better to restrict guidelines to novel and controversial matters. While little has changed in the way CLL is diagnosed, the rapid progress in drug development means that guidelines are out of date very soon after publication. It is also important that future guidelines address other aspects of caring for patients with CLL, such as stratifying low-risk patients and treating patients with co-morbidities.

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*“The final step in the process of translational research is the generation of clinical guidelines.”*

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### Birmingham as a centre for translational research

Birmingham is an excellent place to carry out translational research, and has become a leading centre for research into haematological malignancies. Birmingham itself has a large and ethnically diverse population. The city is served

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by a number of hospitals, each with their own research strengths and interests. The University of Birmingham is one of the country's top universities, with a large medical school and a strong research focus. Research at the School of Cancer Sciences was judged to be internationally excellent or better in 80% of cases. The University is recognised as a Centre of Excellence by the Leukaemia and Lymphoma Research (LLR) charity, and receives more research funding from LLR than any other UK institution. The researchers mentioned in this report are in consensus that Birmingham is appropriately placed to carry out world-leading research because of the close relationships between the University, the hospitals and the local population.

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*“While little has changed in the way CLL is diagnosed, the rapid progress in drug development means that guidelines are out of date very soon after publication.”*

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The CLL research community at the University of Birmingham is an excellent example of how translational research can be carried out. The often-cited gulf between scientists and clinicians does not exist: strong links between the University and hospitals ensure the efficient transfer of ideas, patient data and primary samples of CLL cells. Many of the researchers have both medical and scientific backgrounds, allowing them to address simultaneously both scientific and clinical questions. This bridges the gap between the laboratory and the clinic, and enables communication with a broader audience.

## **Improving translational research in Birmingham**

Research into CLL at Birmingham reflects many of the requirements of a successful translation research programme. However, there are a number of issues that still need to be addressed before the University fulfils its potential.

Two significant barriers in the drug development process are the amount of bureaucracy involved and the spiralling

cost. It is important to identify how Birmingham could improve. With the current level of investment required to develop a new drug, it is essential to recognise the importance of commercialisation and engagement with the pharmaceutical industry. Drug companies have the expertise and equipment required to develop, manufacture and market novel agents. The two principal ways to commercialise drug development are to spin-out a company from the University, or to collaborate with companies that already exist. And the future is looking brighter across Birmingham's Medical School, as the new Pharmacy course sees the arrival of a number of new and motivated researchers with knowledge of industry and how the University might better engage with it.

## **Conclusion**

The example of CLL shows that Birmingham can be an excellent place to carry out translational research. This city has the combination of an excellent University, hospitals set up to carry out research, and a large diverse patient population. The University hosts a diverse array of research groups, who are exploring a number of aspects of CLL pathophysiology and developing new ways of tackling the disease. The collaborative approach between research groups and clinicians is already resulting in drug trials. By improving links with the pharmaceutical industry, Birmingham could further raise its profile in translational research, and do more to improve the lives of patients.

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*“The collaborative approach between research groups and clinicians is already resulting in drug trials.”*

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I would like to thank the research groups of the University and the clinicians of the Heart of England and the University Hospitals Birmingham NHS trusts, for their time and hospitality. I am especially grateful to the Sands Cox Society for their bursary to support this elective.

# PHOTO COMMENTARY

Erna Kritzinger (M 1974)

**T**hese photographs were taken at the Heritage Motor Centre in Gaydon, Warwickshire – a “must visit” place for the motor aficionado. Home to the world’s largest collection of British cars (nearly 300), it houses informative and interactive exhibitions, charting the history of British motoring from the 1890s to present day.

The HMC is also child friendly and offers a great day out for all of the family, with a play area, picnic site, gift shop, cafeteria, Land Rover 4 x 4 experience and free guided tours.



*Above: 1934 Triumph Gloria – Bonnet Mascot  
A specially crafted mascot, located on the bonnet, has been used as a symbolic adornment and brand identifier nearly since the inception of motor cars.*



*Left: 2004 Thunderbird FABI  
Lady Penelope’s pink 6-wheeler was manufactured by the Ford Motor Company for the live-action film Thunderbirds.*

Despite being an ignoramus about motor cars, even I can appreciate this unique collection of classic, vintage and veteran cars. Furthermore, as an ophthalmologist (retired), I am often bemused about the expressive “faces with head lamp eyes” of some of the models on display.

*Right: 1951 Jaguar XK 120 Fixed-head coupè  
Took the world by storm when it was introduced at the London Motor Show.*

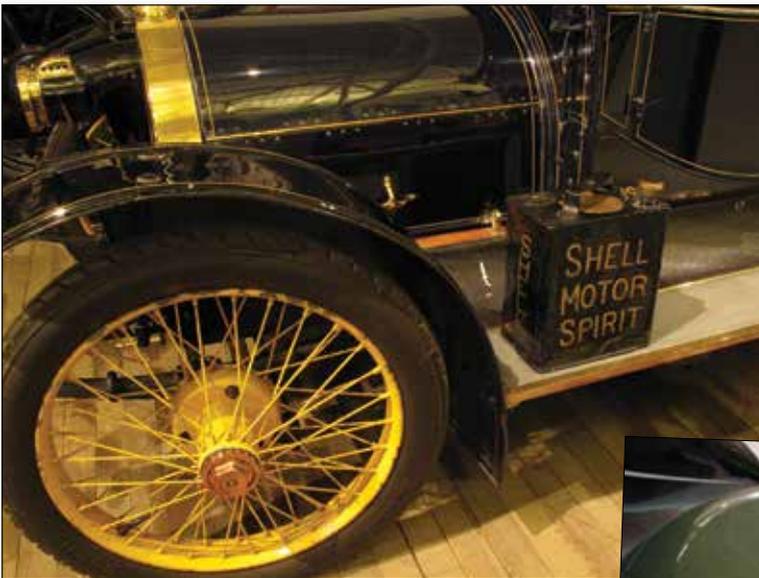




Above: 1934 Triumph Gloria  
A popular car made by the Triumph Motor Company in Coventry in the 1930s.



Above: 1921 Morris Oxford F-type Radiator Cap  
In the early years, car radiators were housed outside the engine compartment. This radiator cap, placed on the bonnet, is decorative as well as functional and incorporates a thermometer gauge, conveniently visible to the driver.



Above: 1919 Wolseley E2A Stellite  
Produced in a factory in Aston, Birmingham, it still had to carry its spare can of fuel. The first purpose built drive in petrol station was opened in 1920 by the AA in Aldermaston – but for use of AA members only.

Right: 1957 MG EX181 record car  
Stirling Moss achieved a record 245.6 mph on the Utah Salt Flats in this car.



# An Elective for the Third Age

## Inter Care – Medical Aid for Africa

Vincent Riley ( M 1970 )



*Above: Vincent Riley at Chekereni Health Centre which is in a remote area.*

*Right: Ladies waiting in labour at Huruma Hospital.*



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***“...my opportunity to embark  
on an elective abroad...”***

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**I** cannot possibly forget my ‘elective’ in 1968. Many hours were spent in the Arthur Thompson Library revising for a second attempt at my Pathology Examinations! So, no visits to sunnier climes or exotic locations. Over the years I have listened entranced to the accounts of Medical Students both at Leicester and Birmingham Medical Schools presenting glowing accounts of their elective periods at both home and abroad and quite clearly these had often been life changing experiences at the outset of whatever career path life was about to take them. Following the end of a career in Genitourinary Medicine at the Leicester Royal Infirmary in 2007 my opportunity to embark on an elective abroad was fulfilled.

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***“Watching the doctors throw away in-date  
...medicines that patients had returned  
to the surgery...”***

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In 1969 an African priest Fr Charles Kalakula was part of a study group attended by husband and wife, Dr David Rosenberg and Dr Patricia Keefe who were General Practitioners in London. Fr Charles was invited into their home for Christmas and the couple offered him a home for the next six months. Watching the doctors throw away in-date samples from pharmaceutical companies and medicines that patients had returned to the surgery, Fr Charles was horrified at the waste, and exclaimed that his Bishop was desperate for medicines for small rural health centres in his Diocese of Sumbawanga. This was the genesis of Inter Care. In essence a chance meeting and the recognition that a need could be met resulted in action – justice not charity in the sense that resources should be shared. The rural poor could be helped and lives saved. Though the Diocese in question was at the furthest western edge of Tanzania, somehow supplies were assembled and dispatched and the Diocese is still being supplied today.

Gradually the two doctors involved colleagues and when the volume of returned medications could no longer be

accommodated in their own home they were able to persuade the charity War on Want to provide premises and some funding. Dr David was appointed Medical Director. In this role he was able to visit many countries including several English-speaking countries in Africa, to assess where best to target aid. He came across a large convent of African Catholic Sisters who were running rural health units. This led to other African congregations who were struggling to develop their potential as the missionary orders withdrew at the time countries were gaining independence. Forty rural medical units run by the sisters were added to those being supplied by War on Want but by 1973 there was a change in policy whereby the poorest rural projects could no longer be helped. By 1974 Dr David and Dr Pat had set up and registered their own organisation, Inter Care, to pick up on the needs of these. The Rosenbergs had by then moved to Leicester, now the national base for the collection, sorting, and re-distribution of medicines. Over the years the number of units helped has expanded to today’s 125 in 6 sub-Saharan African countries – Sierra Leone, Cameroon, Ghana, Zambia, Malawi and Tanzania. Inter Care makes use of the network provided by religious institutions to supply the units. This enables the organisation to reach over 9 million people in some of the poorest rural areas in Africa. Beneficiaries vary in size and scope. They include small hospitals, health centres, dispensaries, schools, orphanages and prisons. There are 29 units on a waiting list. Each unit receives 2 consignments a year indefinitely until the need no longer exists.

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***“...to reach over 9 million people...”***

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Pharmacies in the UK follow professional guidelines which require disposal of all returned medication. This is not only a great waste and environmentally damaging but it is at great cost estimated at £300-400 million a year (York Health Economics Consortium 2010). Lobbying for a change in regulations is ongoing. General practices however, are permitted to forward returned medicines to Inter Care which holds the appropriate licences to handle waste. Returned medicines are classified as industrial waste. Over 1200 General Practices have signed up to help and further recruitment takes place annually at the RCGP’s Annual Conference. Inter Care follows the WHO guidelines on drug donations and insists on a completed request form, based on the Essential Drug List, from each

unit, to establish exactly what medications are required. It aims to supplement normal in-country provision. All medication must have a 15 month expiry date to allow for a 1 year shelf life once it has reached its destination. So, this is recycling at its very best.

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***“Inter Care labelled medicines on the Pharmacy shelves...”***

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There are 4 part-time staff and 60 volunteers at Inter Care. The latter are drawn from many varied walks of life but include doctors, pharmacists and nurses. A representative aims to visit each of the units served on a 3-yearly cycle to maintain and develop personal relationships and gain updated information on their needs. In 2011 a unique opportunity arose for a group of volunteers, which I joined, to self-fund a visit to a number of clinics in the vicinity of Mount Kilimanjaro, Tanzania. The opportunity to undertake my real elective had arrived. The personal impact was enormous. The group was treated with great hospitality wherever it went. The generosity of the local people was exemplary and humbling. We witnessed the pride in the country and the determined efforts to advance healthcare despite the limitations of powercuts and shortages – often basic – a bulb for a microscope, cotton wool, bandages, urinary catheters, urine testing strips to name a few. I was personally able to report back on a visit to Huruma Hospital, one of 10 units we visited. This is a 200-bed hospital with a Nurse Training School attached. There is an annexe where over 90 high-risk expectant mothers, who may live at a considerable distance from the hospital, can stay during the latter stages of their pregnancy. I learnt of the skills of Clinical Officers who are able to carry out

common surgical procedures. We noted the Inter Care labelled medicines on the Pharmacy shelves. But we were distressed to see a number of children being treated for kerosene burns.

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***“Over £11 Million pounds worth of medicines has been donated...”***

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Over the years Inter Care has been able to help with training for staff at the units, by sending textbooks, surgical instruments and educational material – a recent BNF is sent with every consignment. In addition any dressings, syringes, crepe bandages and other useful medical goods received from General Practices are forwarded. Over £11 Million pounds worth of medicines has been donated since 1974. Funds are required for collection of medicines and shipping costs and the purchase of medicines to supplement each consignment. These are raised through local and national fundraising events. Increased income means that more units can be helped. Inter Care is supported by numerous groups and individuals throughout the UK without whom it could not function. This help was recognised by the granting of The Queen’s Award for Voluntary Service in 2012.

It is Inter Care’s 40th Anniversary in 2014 and a second elective is being planned!

My thanks to Mrs Margaret Greiff, M.B.E, Patron and Dr Tony Jarvis, F.R.C.G.P., Trustees for their help in preparing this article.

[www.intercare.org.uk](http://www.intercare.org.uk)

**Leon Abrams 1927 – 2012  
(M 1945)**

Leon Abrams was an imposing figure of a surgeon whose size was matched by his enthusiasm for surgery, innovation and a delicate touch crucial in the paediatric cardiac surgery aspects of his practice.

Though born in Leeds he moved to Birmingham in 1927 where he spent the rest of his life. He graduated in medicine in 1945 and after his surgical training he returned to the University Teaching Hospital, Queen Elizabeth in 1957 as a consultant in adult and paediatric cardiac surgery. With this appointment he developed the new techniques necessary to deal with acute life threatening cardiac defects of the newborn. He was also one of the first surgeons to perform successful cardiac bypass surgery and urgent mitral valve replacement in the presence of acute endocarditis. He was also involved in pioneering work assessing the cardiac output response to exercise including himself as a volunteer.

However he is remembered most medically for his pioneering work in developing and successfully implanting the first variable rate pacemaker in 1960 with Ray Lightwood (an electrical engineer) that subsequently became the Lucas-Abrams pacemaker. A blue plaque is mounted on the wall of Birmingham University Medical School to commemorate this achievement. He also invented the Abrams needle used for many years to obtain diagnostic biopsy material from the lung parietal pleura.

A great and patient teacher who also found the time for his family and wife Eva, to whom he was married for

60 years. He also enjoyed sailing and was a member of numerous medical and non-medical external boards.

He retired in 1980 and despite suffering from a variety of health issues late in life, remained active and never lost his sense of humour. He is survived by his wife and 3 sons as well as numerous patients, colleagues and friends whose lives he enriched.

**Robert Stockley**

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**David JP Barker  
(M 1962, Guy's)**

Former professor of clinical epidemiology Southampton University, honorary consultant physician Southampton University Hospitals Trust, and former director MRC Environmental Epidemiology Unit (b 29 June 1938; q 1962; CBE, PhD Birm, FRCP Lond, MD Lond, FFPHM RCP (UK), FRCOG, FRS), died from a cerebral haemorrhage on 27 August 2013.

David Barker was a physician and one of the most influential epidemiologists of our time. His “fetal programming hypothesis” (known as the “Barker hypothesis”) transformed thinking about the causes of diabetes, cardiovascular disease, and cancer. He challenged the idea that they are explained by a combination of bad genes and unhealthy adult lifestyles, and proposed that their roots also lie in early life: “The nourishment a baby receives from its mother, and its exposure to infection after birth, permanently ‘programme’ the body’s structure and metabolism, and determine its susceptibility to chronic disease in later life. He created a new

area of research, which became known as the developmental origins of health and disease. He argued that tackling the epidemics of chronic disease in developed and developing countries requires a shift in focus to prioritise the health and nutrition of girls, pregnant women, and infants. Over 30 years he tenaciously pursued a deeper understanding, and translation into action, of these ideas.

David was educated at Beaudesert Park and Oundle, and he studied medicine at Guy’s Hospital, London. He became a research fellow at the University of Birmingham and in 1966 completed his PhD thesis, *Prenatal Influences and Subnormal Intelligence*, a harbinger of his later work on fetal programming. Soon afterwards, he obtained a Medical Research Council (MRC) grant to study *Mycobacterium uicerans* infection (Buruli ulcer), working from Makerere University, Kampala. The project was cut short when President Idi Amin plunged Uganda into crisis, declaring Westerners unwelcome. However, David had done enough to link transmission of Buruli ulcer to wounds caused by razor sharp reeds growing near the river Nile. He had also learnt the importance of observing how people lived and listening to them to understand disease.

In 1972 David moved to the University of Southampton, which he was proud to make the base for the rest of his career. He was a consultant physician at the Royal South Hants Hospital and recruited able clinicians to join his research. With Donald Acheson and Martin Gardner he established the MRC Environmental Epidemiology Unit in 1979 and became professor of clinical epidemiology. He was an inspired teacher and with Geoffrey

Rose started an annual course in Southampton (epidemiology for clinicians), which still runs today, and wrote books and articles that introduced a generation of researchers to epidemiology.

He became director of the MRC unit in 1984. His research into thyroid disease, Perthes' disease, Paget's disease, and appendicitis led him back to evidence of nutritional and infective influences in early life. He suspected that such influences underlie the rapid waxing and waning of disease for example, the mysterious disappearance of rheumatic heart disease and unexplained ascent of coronary heart disease. The unit's detailed mapping of mortality in England and Wales led to his observation that areas with the highest infant mortality in 1910 had the highest burden of cardiovascular deaths in the 1970s. He and statistician Clive Osmond, his lifelong research partner, confirmed strong geographical correlations between infant mortality and adult chronic disease occurring decades later.

David took the unusual step of hiring a historian to search for old birth records. With colleagues in Southampton and Cambridge, he went on to show, using Hertfordshire records, that people of lower birth and infant weight had more cardiovascular disease and diabetes in middle age. With collaborators in Helsinki, he related patterns of childhood growth to these diseases. With colleagues in India, he showed similar relations in developing populations. With the Dutch Hunger Winter group in Amsterdam, he showed that exposure of pregnant mothers to famine left a legacy of chronic disease in their children.

He established collaborations with physiologists in Adelaide, Auckland, and Toronto, who were studying fetal development in animals and harnessed strong evidence that early life undernutrition had lifelong adverse effects on all body systems. The bringing together of the hitherto separate worlds of fetal physiology and epidemiology led to the formation of the International Society for Developmental Origins of Health and Disease and international conferences.

David retired in 2003 but did not stop his research. He continued to work at the MRC unit, now the Lifecourse Epidemiology Unit, and contribute to the Southampton women's survey. He was instrumental in setting up the Southampton Initiative for Health to develop practical ways of improving maternal diets. He spent part of each year at Oregon Health Sciences University in Portland, a centre for placental research, and Emory University, Atlanta, investigating the biology of human growth.

David was an inspiring leader. He was enormous fun and a brilliant raconteur. He was also a deeply private, thoughtful, and caring man, for whom family life was important. His first wife Angela, with whom he had five children, died in 1980. He married Jan in 1983 and enjoyed the addition of her three children to his family. Together they created a unique environment at Manor Farm, East Dean, which housed four generations, and became a centre for scientific work with visitors from around the world. Jan supported David in all his endeavours; indeed, her informality and warmth were central to his research partnerships.

David published more than 500 research papers and 10 books. He was a fellow of the Royal Society and was awarded a CBE in 2005. His numerous honours included the Royal Society Wellcome Gold Medal (1994), the Prince Mahidol Award (2000), and the International Epidemiology Association Richard Doll Prize (2011).

He died suddenly from a cerebral haemorrhage on 27 August 2013. He leaves Jan, eight children, and 13 grandchildren.

**Jan Barker, Mary Barker, Caroline Fall, Clive Osmond, Cyrus Cooper**

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### Brian Beach (M 1965)

Born in Leintwardine, Herefordshire, the son of a general practitioner, Brian Beach attended a Quaker school in York and learnt to play the organ in York Minster. He went to Ludhiana as a Nuffield scholar while a student. After house jobs in Birmingham, he went to Rhodesia as a paediatric registrar in Salisbury and Bulawayo. He then worked in Hereford, where he met his wife, also a doctor, and gained the MRCP before spending two very enriching years at All Saints Hospital in the Eastern Cape, South Africa.

They returned to the UK to take up a husband and wife partnership in west Herefordshire. He loved rural general practice, eschewed committees of all sorts, and, inspired by his time at St Christopher's Hospice with Cicely Saunders, became committed to providing a high standard of domiciliary palliative care.

An intuitive and much respected clinician, Brian also had a sparkling

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sense of humour and an impish sense of fun. He was loved by patients and colleagues alike.

He retired from the practice in 2002 and did some locums in the north of Scotland. He then had time for his beloved Blüthner piano, started having lessons again, and gave recitals with musical friends at home. The arrival of his grandchildren delighted him. His illness started after nearly 10 years of active retirement, and he died at home.

He leaves his wife, Helen; a son, two daughters (one of whom is a GP); and eight grandchildren.

**Helen Beach, Hilary Sindall,  
Oliver Penney**

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### **Michael John Gilbert (M 1959)**

Former general practitioner (b 1936; q Birmingham 1959; DCROG, AFOM), died from acute myeloid leukaemia on 22 May 2012.

Michael John Gilbert (“Mike”) was born in Smethwick and went to King Edward grammar school. After qualifying he went to south Wales to train in obstetrics and gynaecology. His parents bought him a Cooper Mark 5 for £145 for passing his medical finals, which was the beginning of a lifelong passion.

In 1962 he went into general practice in Grenfell in northern Saskatchewan, Canada. It was a town of 1200 people 84 miles from the city of Regina. There was a small purpose built hospital. He and his partner, Mike Stafford, did any surgical procedures

they felt they could safely perform with the pictorial guide to surgery firmly placed next to the operating table. They were also responsible for the welfare of the people living in four Cree Indian reservations. He hunted, fished, and raced and was the Formula Vee champion for a year. The winter was no deterrent; races took place on ice.

In 1968 having spent seven years enduring the Canadian winters he went on a two year contract to work on St Vincent in the Grenadines. He was initially the anaesthetist and then became the medical superintendent of Kingston General Hospital, where his responsibilities included the running of the tuberculosis hospital. He spent many happy hours sailing around the island and fishing. Every day after work he would go to the beach near his house to snorkel. There was only one day in two years that he missed. He always said that the view from the roof of the TB hospital looking over the islands was his favourite in the world, and he went back in 2010 to see it for the last time.

In 1971 he joined Shell and went to Nigeria, working in Port Harcourt and Warri. His duties were mainly clinical, with a special interest in obstetrics and anaesthetics. Knowledge of his love of animals soon filtered through to the local population, who would bring all sorts of animals caught in bush traps for him to buy. He soon had a mini zoo in his garden. He was seen most evenings in the bush hut enjoying a beer, with Touk, his rock hyrax, sitting on his shoulder nibbling his beard. He kept two royal pythons on his bookcase, and his favourite party trick after a curry lunch at his house was to invite guests to play “pass the python.”

In 1974 he went to Oman, where he became chief medical officer of a desert exploration and production oil company. He was responsible for the welfare of employees spread over an area of 55 000 square miles. There was a base clinic and several desert satellite clinics. He enjoyed his trips to the interior and valued the skills and friendship of the staff working in these remote locations, many of whom remained lifelong friends. He became involved in diving and aviation medicine.

Mike was a keen member of the boat club and spent many happy hours in his Delquay (“Del-kee”) dory, fishing for barracuda and king fish, and taking night time shark fishing expeditions with friends. They never caught anything on these late night adventures, which was just as well as small boats and large sharks do not mix. Health and safety had not yet been invented to spoil the fun.

In 1982 he went to Brunei for two years as the anaesthetist at the Shell hospital in Panaga, and became involved in offshore occupational health and hygiene. He used the opportunity to travel widely in the Far East. He then returned to UK to work for Shell with special responsibility for the Shell tanker fleet, and later took up a consultancy in occupational health at St Thomas’ Hospital. His last post was chief medical adviser for British Gas worldwide, which enabled him to continue with his zest for travel.

Returning to England meant he could pursue his love of racing. He bought an Austin 7 and was an active member of the Pre-War Austin Seven Club and 750 Motor Club. He later sold the Austin, bought a Riley, and had a Cooper Mark 9 restored. He became a

member of the Vintage Sports Car Club and 500 Owners Club. He had many successes, but there were also nerve wracking moments such as the time he forgot to lock the steering wheel into position and it came off in his hands as he approached a bend. He was able to race in his later years only because of the help, support, and kindness shown to him by his friends, which he greatly appreciated. When asked about his life he said "I've had fun."

Mike leaves his wife, Anita; five children (Andrew, Stephen, Samantha, Laura, and Cassandra); and five grandchildren.

**Anita Gilbert**

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### **Desmond John Green (M 1975)**

Former consultant radiologist Nottingham University Hospitals (b 1952; q Birmingham 1975; FRCR, FRCP), died from prostate cancer on 22 April 2013.

Desmond Green ("Des") was born and educated in Gainsborough, Lincolnshire. He studied medicine at Birmingham University, where he was active in the soccer team. After several medical posts in Birmingham – where he met his wife, Cath, a radiographer—he entered the radiology training scheme in Oxford.

In 1986 he was appointed to Nottingham City Hospital as consultant radiologist with an interest in nuclear medicine. He went on to represent the Royal College of Radiologists on the joint nuclear medicine committee with the Royal College of Physicians and was eventually made an honorary fellow

of the RCP for his contributions. He was awarded the president's medal by the British Nuclear Medicine Society just before his death.

His research interests included bone densitometry, on which he coauthored several papers and presentations at international meetings.

Des will be remembered as a source of practical advice and encouragement by generations of trainees who passed through the Nottingham radiology training scheme. He was the RCR clinical tutor for the scheme and introduced the concept of logbooks at a time when they were not in general use. He was an excellent networker, and Nottingham benefited from the various external radiologists he persuaded to visit as speakers and examiners of the trainees.

His interest in training was continued as a member of the education committee of the RCR, and his knowledge of nuclear medicine was put to good and frequent use on the College training scheme accreditation visits.

Des's training interest was expanded by his appointment as associate postgraduate dean in what became the East Midlands Deanery, which brought him into contact with several other groups of trainees. He died at home and leaves Cath and two daughters.

**Adrian Manhire, Donald Rose**

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### **Eric Holmes (M 1968)**

Dr Eric Holmes, a GP in Ilfracombe from 1974 to 2001 died on August 16th 2013.

Eric was born in 1944 and grew up enjoying climbing and walking in his beloved Northumberland. At 17 he was accepted by the British Schools Exploring Society on an expedition to Finland and into the Arctic Circle, which he never forgot, always trying to encourage youngsters to experience similar expeditions and later doing some interviewing of applicants for the BSES.

He started his medical training in 1963 at Birmingham Medical School, qualifying in 1968. During this time he met Jan, a Queen Elizabeth trained nurse, marrying her in August 1966, after he had joined the British Army as a medical cadet.

His short service commission in the army took him to Catterick, Northern Ireland and Germany where he received a Special Brigadiers Commendation for his work setting up the medical centre there. He left in 1974, as a Major, with Jan and their 3 small children and joined the Woolacombe and Ilfracombe Practice as a GP. His patients remember him as a smiling and cheerful man who was dedicated to his role as a Doctor who always had time to listen. During his time in practice, he got involved in many things in the community, fighting hard, for example, with other colleagues, to keep the Tyrrell and other cottage hospitals open. He was a Medical Officer for the North Devon branch of the Red Cross and apart from teaching first aid he often attended events as the official Red Cross Doctor.

In 1991 he served in the First Gulf War, being promoted to Lieutenant Colonel in charge of the health and welfare of the prisoners of war. Afterwards he became President

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of the Ilfracombe branch of the British Legion.

He gave 27 years of devoted service to his patients, retiring in 2001 when he developed cancer. Several years after, he joined Hospice as a Trustee, thoroughly enjoying his 6 years working there before retiring yet again due to ill health.

He was always a loving father, enjoying walking, camping and skiing holidays with family and friends. He loved bird watching with Jan and also tinkering with and driving his MG TF. He was justifiably proud of his 3 children – Julie, Richard and Philip and subsequently his 3 grandchildren – Tom, Harry and Sam. He is sadly missed by Jan and the whole family.

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### **Barbara Elizabeth Mansell Lloyd née Eades (M 1948)**

Former general practitioner, Small Heath, Birmingham (b 1925 q Birmingham 1948 MB ChB) died November 30th 2013.

Barbara Lloyd was born in Brearley House, Small Heath to Albert Harpin Eades, a general practitioner and his wife, Barbara, a nurse. She grew up in the practice house and attended King Edwards High School and Birmingham Medical School.

After she qualified she met Llewellyn Lloyd (M1951 Birmingham Medical School) at Yardley Tennis Club and Yardley Old Church. They married in 1952. They just had time for a honeymoon in Scotland in their caravan, before Llew was sent to Kuala

Lumpur in Malaya for two years to do National Service. Those two years were hard for her – she remained in Small Heath with her father to run the medical practice – on the promise that on Llew’s return they would all be equal partners.

Barbara carried on as a GP in the same practice house in Small Heath whilst bringing up their two daughters - Fiona and Elizabeth, and “holding the fort” when Llew flew out to his many meetings and commitments! I think that most people realize that she was the “power behind the throne”!

In her free time she loved to sew. She enjoyed singing and was a member of the chorus in an amateur Gilbert and Sullivan group – “The Savoyards”.

She was very interested in local Small Heath history and was a governor at the Wynclyffe Rd Infant and Nursery School in Small Heath for a time.

In 1968 Barbara and Llew bought a beautiful bungalow in Horley, Oxfordshire. It was their second home. Every weekend after Saturday morning surgery they would pack their bags and head to the country until Sunday night. They did not have a phone there until the late 1980s – it was their “bolt-hole”. They became part of village life and loved being part of the community.

It was tragic when Barbara was afflicted with a severe stroke in 2001. Life changed for them both forever. But Barbara’s sheer grit to survive and Llew’s utter devotion enabled them to live together for another 12 years – including the celebration of their 60th wedding anniversary in 2012. In 2013 she developed a melanoma of the eye – which was ironic as she was an English rose who hid from the sun!

She died peacefully at Neville Williams Nursing Home, where she lived with Llew for the final years of her life.

She is survived by her husband Llewellyn Lloyd O.B.E., J.P, and daughters Fiona Brookes and Elizabeth McKeown, who is a GP practicing in Toronto Canada.

**Elizabeth McKeown**

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### **John Lloyd Jenkins (1951)**

General practitioner Welwyn Garden City (b 1928; q Birmingham 1951), died from myelomatosis on 21 July 2013.

After qualifying and junior hospital posts in Birmingham, John Lloyd Jenkins took a short service commission in the Royal Air Force, serving in Sri Lanka. After military service he accepted an opportunity to work as a singlehanded family doctor in rural Manitoba (Canada), where he gained valuable experience.

In 1958 he returned to England to join a family practice in Welwyn Garden City, where, for the next 40 years, he served the local community as a greatly respected family doctor. He was instrumental in guiding his partners through this period of great change in general practice while, in a broader context, his diplomacy and negotiating skills were valued by the many local and national medical committees on which he sat.

His last years were clouded by malignancy, which he bore with dignity. He remained a devoted family man and will be greatly missed by friends and colleagues.

**Peter Constable**

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**Robert Donald McLean  
(M 1957)**

After house jobs at Preston Hospital and Tynemouth Jubilee in his adopted Tyneside, Robert Donald McLean (“Bob”) moved to Birmingham and Wolverhampton hospitals. He was appointed consultant gynaecologist and obstetrician to the Dudley hospitals in 1968 where he worked as a singlehanded consultant for many years. His main areas of interest were infertility and carcinoma of the vulva. He retired in 1994 as senior consultant in a team of three. His wife of 37 years, Mary (Mollie), died in 1995, shortly after his retirement. He leaves a daughter, Moira.

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**John R Moore  
(M 1961)**

John R. Moore was born in Wolverhampton and raised in a strongly Methodist family, which undoubtedly influenced his work ethic, personal integrity, and choice of caring profession. He acquired his special interest in children’s disability early in paediatric training and pursued this for four years as a consultant at Sutton Coldfield Hospital. He then moved to Leicester Royal Infirmary in 1976, shortly after the inauguration of Leicester University Medical School, wanting to be more involved in teaching.

With his specialist team he established a busy, highly organised child development centre, caring for most children with severe and multiple disabilities in Leicestershire until he moved into a community

paediatric post in 1990, where he used his great experience, empathy, and communication skills in the community paediatric environment. John retained a lasting interest in paediatric development and care in Africa after his first visit to Uganda in 1980. After retirement in 1997 he helped to establish the successful Leicester-Gondar (Ethiopia) medical link (academic, educational, and therapeutic) and steered it to charitable status. John was a totally reliable, supportive, and dedicated colleague. He was active in many fields including being a Methodist local preacher, fundraising for various charities, and being involved in the development of the Rainbows Children’s Hospice and helped set up a local myeloma group.

He leaves his wife, Helen; three children; and seven grandchildren.

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**Geoffrey Donald  
Parbrook (M 1953)**

Former consultant anaesthetist and senior lecturer Glasgow (b 1928; q Birmingham 1953; MD, FFARCS), died from a myocardial infarction on 22 November 2012.

After national service with the Royal Air Force Geoffrey Donald Parbrook (“Geoff”) trained in anaesthesia. In 1962, while a senior registrar in Aberdeen, he carried out research into postoperative pain relief using premixed gases. In 1967 he was appointed as a consultant in Glasgow. He developed teaching courses for undergraduates and junior anaesthetists, particularly a course of audiotape slide programmes, in

conjunction with a physicist and graphic designer. These programmes formed the nucleus of the 1982 book *Basic Physics and Measurement in Anaesthesia*, which went on to several editions. Geoff had a lifelong interest in chess and was also a magician, who regularly entertained at children’s parties. He leaves a wife, Evelyn; three sons; and seven grandchildren.

Evelyn Parbrook, Alick Reid

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**Malcolm Herbert Stroud  
(M 1945)**

I first met Malcolm in a small group of Freshmen outside the Great Hall of Birmingham University, within moments I noticed his steady gaze and quiet demeanour, we talked a little. Later at the medical School, we shared confidences about school and home life. I was sure I had found a new friend. Malcolm went on to complete his qualification. M.B.ChB., in 1945 and later M.R.C.S., F.R.C.P.

He was appointed as house surgeon at the Queen Elizabeth Hospital (B’ham) and hence to Kidderminster in February 1946. Soon Malcolm was called into the Army to serve his period of National Service. Army life completed he joined Dudley Road Hospital, Birmingham. Further studies rewarded him with F.R.C.S. in 1952. Malcolm became first assistant to the Professor of E.N.T. Studies, University of London 1953-’55 and, later appointed Consultant Surgeon to Dudley Road Group of Hospitals, Birmingham. At about this time Malcolm identified opportunities for advancement in the United States. He was offered and accepted

a position at Washington University school of medicine in St.Louis, Missouri, to commence on July 1, 1965 as assistant Professor. In July 1972 he was appointed Professor, Malcolm's bright and questioning mind took him deeply into the field of Otolaryngology, now supported by facilities which a few years ago were just a dream. With the feasibility of improved treatment in a number of

procedures, Malcolm produced several papers which were published and benefitted the profession as a whole,

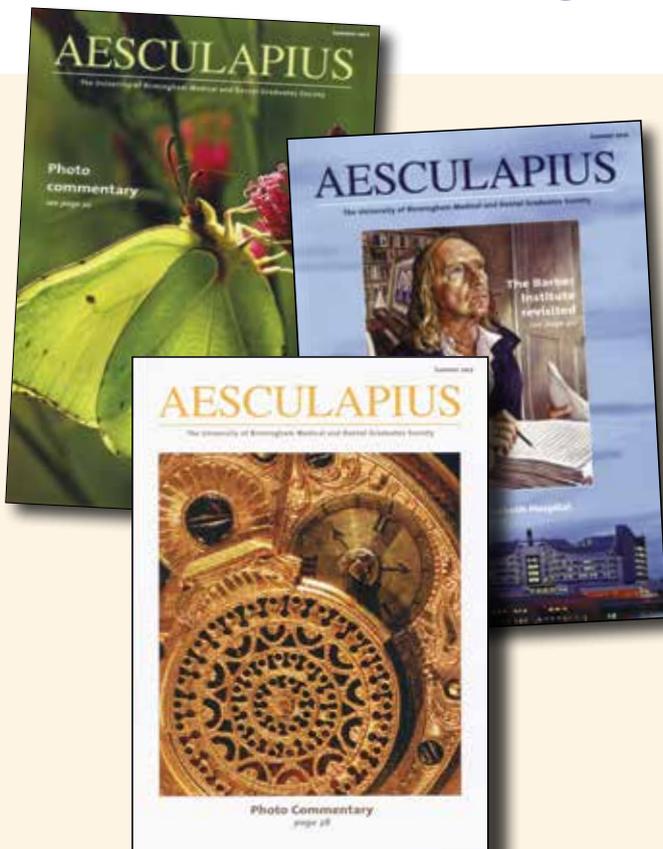
Malcolm's abiding concern was, will it work? His self effacing demeanour endeared him to all who knew him – a big ego had no place in his make up. He had a great sense of humour, it was just below the surface, one could generate a belly laugh at any time in his

company. A friend I shall sorely miss, who's lost expertise will be felt both sides of the Atlantic.

Our deepest sympathy goes to Malcolm's lovely wife Barbara and their children Jane, Nigel and Honor.

**Peter Goodwin,  
Malcolm Herbert Stroud**

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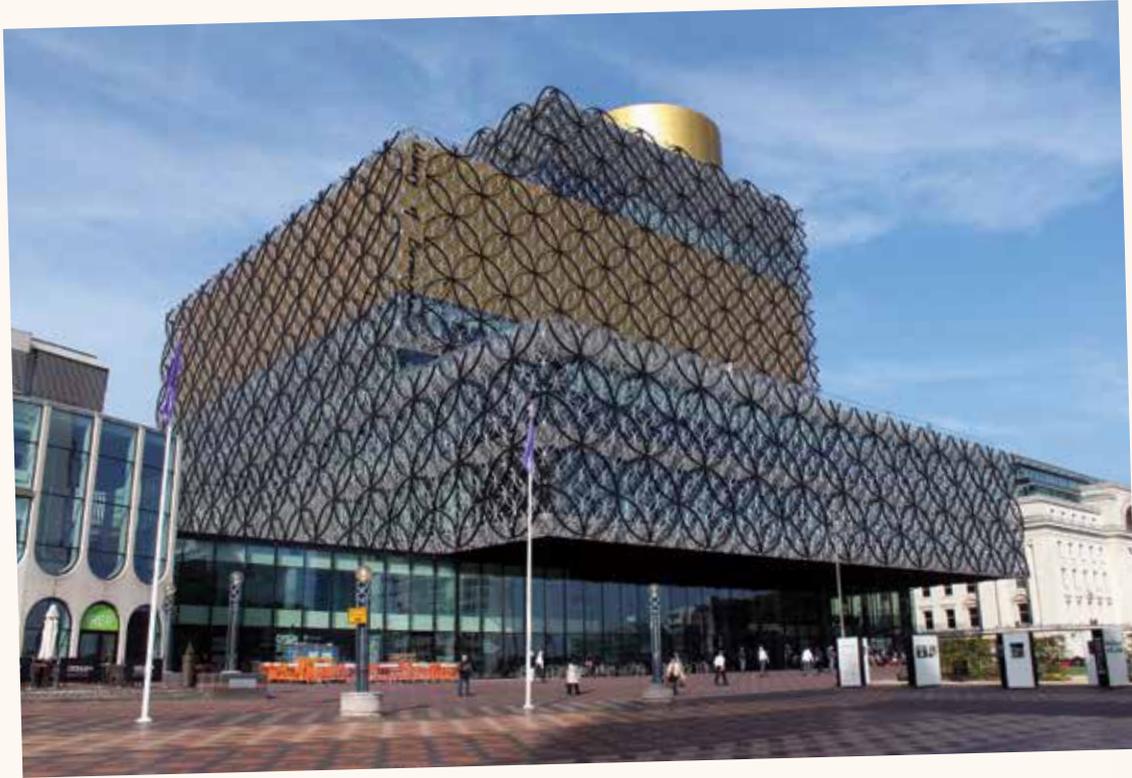
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# A ‘diary of the human race’

## *Archival and historical collections at the Library of Birmingham*

Sian Roberts, Collection Curator, Library of Birmingham

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*“...attracted over a million visitors within the first four months...”*

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**T**he Library of Birmingham opened to the public on 3rd September 2013 and attracted over a million visitors within the first four months of existence. One of the primary functions of the Library is to provide a fitting home for the city’s wealth of internationally significant archives, photographic collections, and early and fine printed books. Opening Birmingham’s first

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*Above: Library of Birmingham, 2013 (Photograph M. Williams)*

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reference library in 1866 the Unitarian minister and advocate of the civic gospel George Dawson declared that ‘a great library contains the diary of the human race’, an apt description that is as relevant to the Library and its collections today as it was almost 150 years ago.

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### *“Birmingham Shakespeare Library”*

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As a founder of the Birmingham Shakespeare Library (founded to celebrate the tercentenary of Shakespeare’s birth on 23 April 1864) Dawson laid the foundation of one of the Library’s most significant collections today. When the original reference library was destroyed by a catastrophic fire in 1879

its replacement, designed by John Henry Chamberlain, contained a designated room for the Shakespeare Collection. Although the Shakespeare Collection outgrew the room as early as 1906, the Shakespeare Memorial Room as it became known still survives; it was moved to the Central Library in 1974 and more recently to the ninth floor of the new Library of Birmingham where it is open to the public alongside a viewing platform offering magnificent views over the city. The Shakespeare Collection of over 44,000 books, photographs, posters, theatre programmes and scrapbooks is now housed in the new library's storage areas and includes the renowned 'First Folio', the first collected edition of many of Shakespeare's works published in 1623.

A rich collection of early and fine printed rare books contains many highly significant items including early scientific works such as a second edition of Robert Hooke's *Micrographia* from 1667, and an important collection of medieval atlases donated to the Library by the Cadbury family from which Ptolemy's *Cosmographia*, printed and hand-coloured in Germany in 1482 and shown here, derives. The Library's best known historical book is probably *Birds of America*, the creation of naturalist John James Audubon. Dating from 1827-1838, it features 435 colour engravings of every American bird species, and

measures 1.3m by 2m when opened due to Audubon's desire to portray all the birds at life-size.

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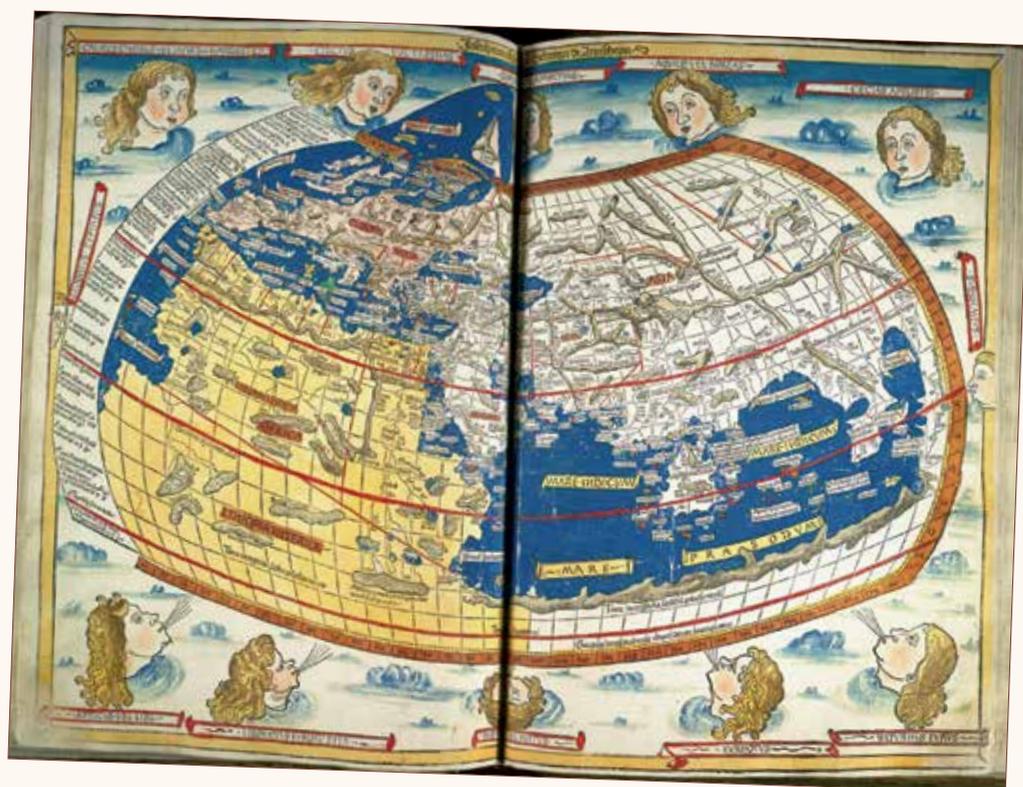
***"...outstanding archival collections dating from the 12th century to present day."***

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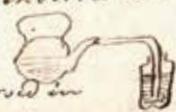
In addition to rare books the Library is home to the city's outstanding archival collections dating from the 12th century to present day. A crucial resource for the history of Birmingham and the West Midlands, many of the archive collections are also of national and international importance attracting historians and scholars from all over the world. They include, for example, the business archive of John Hardman and company founded in partnership with Augustus Welby Pugin in 1838 and probably best known for their work on the New Palace of Westminster with Sir Charles Barry, the records of children sent to Canada and Australia by Middlemore Emigration Homes between 1872 and the Second World War, and the papers of the Cadbury family and the estate records of their garden village at Bournville.

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*Ptolemy's Cosmographia*,  
1482 (AE093/1482)



10. I found that the quantity of water used for projection in fire engines was much greater than I thought was necessary to cool the quantity of water of water contained in the steam down to below the boiling point. I mixed 1 part of boiling water with 30 parts of cold water I found it only heated to the arithmetical mean betwixt the two heats & that it was scarcely sensibly heated to the finger.

I took a glass tube & inverted it into the nose of a tea kettle  the other end being immersed in cold water I found a small increase of the water in the air making the kettle boil that there was only a small increase of the water in the refrigerator that it was become boiling hot. This I was surprisid at & on telling it to Dr Black & asking him if it was possible that water under the form of steam could contain more heat than it did when water

James Watt's Experiment Notebook, 1765-1814. (MS 3219/4/170)

**"...business and family papers of Matthew Boulton and James Watt."**

One of the most significant of our collections is the Archives of Soho, which comprises of the business and family papers of Matthew Boulton (1728-1809) and James Watt (1736-1819). A vast accumulation of order books, pattern books, accounts, and drawings of engines, sword hilts and the array of other consumer goods produced at Soho, household and estate papers, family correspondence including James Watt Junior letters home from Paris during the revolutionary terror, and James Watt's scientific notebooks such as the one illustrated here. One of the joys of the archive is that it not only offers an insight into the minds of Boulton and Watt, but also provides a wonderful illustration of how ideas travelled across national and international boundaries in the period. Both men conducted

an avid correspondence with most of the great names of the eighteenth century scientific and philosophical worlds, and the collection includes correspondence with other members of the Lunar Society and Midlands enlightenment such as Erasmus Darwin and Josiah Wedgewood, and with those further afield including Benjamin Franklin, Joseph Black and Aimé Argand to name but three.

From the 18th century onwards the collections are also strong for the history of the development of civic and local government, charitable and philanthropic concerns, educational initiatives, and the religious life of Birmingham, be it Anglican, Unitarian, Quaker or Jewish. The collections relating to public health and medicine are particularly rich beginning with the archive of the Birmingham General Hospital from 1765 and some of the individuals concerned with it, to the plethora of medical institutions and hospitals found in the city by the twentieth century.



Watercolour drawing of a foxglove for William Withering's *An account of the foxglove*, 1785. (MS 3994/3)

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*“...collections...represented on the exterior  
of the building by the golden box...”*

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When not in use by researchers the collections are stored in specialist, state of the art, storage accommodation on levels five and six of the building and represented on the exterior of the building by the golden box that can be seen above the terrace in the accompanying photograph. A low oxygen environment has been designed to prevent fire, and the storage rooms are maintained at a range of specific temperature and humidity levels to prevent deterioration.

Public access and research facilities for the collections are located on the fourth floor and include the Wolfson Research

Centre for using original archives, photographs, and early and fine printed books, and the Heritage Research Area where printed and online resources for family and local history are available. One of the features of the Library of Birmingham is that we now also have an exhibition gallery enabling us to display our collections for the first time, and work is currently underway on an exhibition to mark the centenary of the First World War which will open on 29th September.

Further information about the Library of Birmingham and our collections can be found at

[www.libraryofbirmingham.com](http://www.libraryofbirmingham.com)

or follow our blog at

<http://theironroom.wordpress.com>



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# Evidence based self-care strategies for dental pain and preventative oral health care advice via Smartphone technology

Yatisha Patel (D 2013)

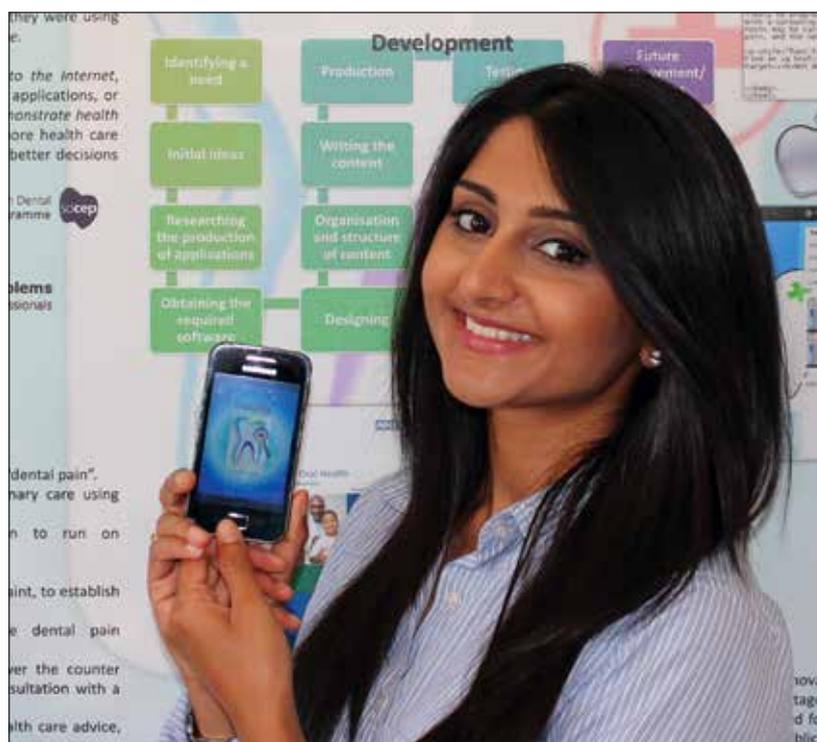
## Background

*“...the majority of facial pain presentations are of a dento-alveolar origin.”*

In the 2009 Adult Dental Health Survey, one in six adults (16%) reported current pain or long-term pain in England, Wales or Northern Ireland. In a primary care setting, the majority of facial pain presentations are of a dento-alveolar origin.

*“Non-prescription medicines/home remedies may be used...”*

An individual suffering from toothache may not always seek to solve the problem by visiting a dentist. Non-prescription medicines/home remedies may be used in combination with formal care as self-care strategies to manage the pain. The ease of accessibility to over the counter (OTC) analgesics increases the likelihood that patients experiencing acute or chronic dental pain are more likely to self-medicate. Contraindications, correct dosage and frequency of OTC analgesics must be considered before being consumed by patients to manage dental pain of moderate to severe intensity.



*“...dental pain can interfere with normal functioning and daily living...”*

The increased intensity of dental pain can interfere with normal functioning and daily living; toothache therefore being strongly related to high morbidity rates. Barriers to visiting a dentist regularly may result in people only looking to receive treatment in an emergency – avoiding

## Experience of current and long-term dental pain

<i>Dentate adults who were examined</i>	<i>England, Wales and Northern Ireland: 2009</i>
<b>Experience of dental pain</b>	<b>%</b>
Current pain but not frequent pain in last 12 months	6
Frequent pain in last 12 months but no current pain	7
Both current pain and frequent pain in last 12 months	3
<b>Any current dental pain or frequent pain in last 12 months</b>	<b>16</b>
<b>No current dental pain or frequent pain in last 12 months</b>	<b>84</b>

preventative dental care advice that they should be receiving routinely.

*“...patients use online resources to access health care information...”*

It is common knowledge that patients use online resources to access health care information – however there is uncertainty surrounding the reliability of information available. Dentists also expect patients to make more proactive decisions about managing their own dental health with the use of the Internet – if only they could refer their patients to appropriate sources for information.

*“The Internet is now accessible in 83% of households.”*

The Internet is now accessible in 83% of households. It is considered to be highly involved in accessing information and assisting communication – in particular in relation to

social networking sites. Individuals have been using an online blogging service, Twitter, to express their experiences of toothache. Twitter is designed as a network to allow users to communicate with one another; it is evident that users have been using this media platform to seek advice actively for managing dental pain. “Tweets” (short posts) expressed have related to experiences of toothache, methods of pain relief using medication, visiting the dentist and impacts on daily life. 18% of total tweets analysed at the time relating to dental pain were geographically located to users in the UK.

*“...53% of Internet users now use a mobile phone to connect to the Internet.”*

The use of networking sites such as these provide a useful platform to promote health information; especially as reports from the Office of National Statistics suggest that 53% of Internet users now use a mobile phone to connect to the Internet. Smartphones or tablets can be used to access applications, or “Apps”, which can offer an interactive media platform to convey or demonstrate health advice. The Department of Health had appealed for more health care apps to be created in 2011, to provide information for patients to make better decisions about their health.

## Aim

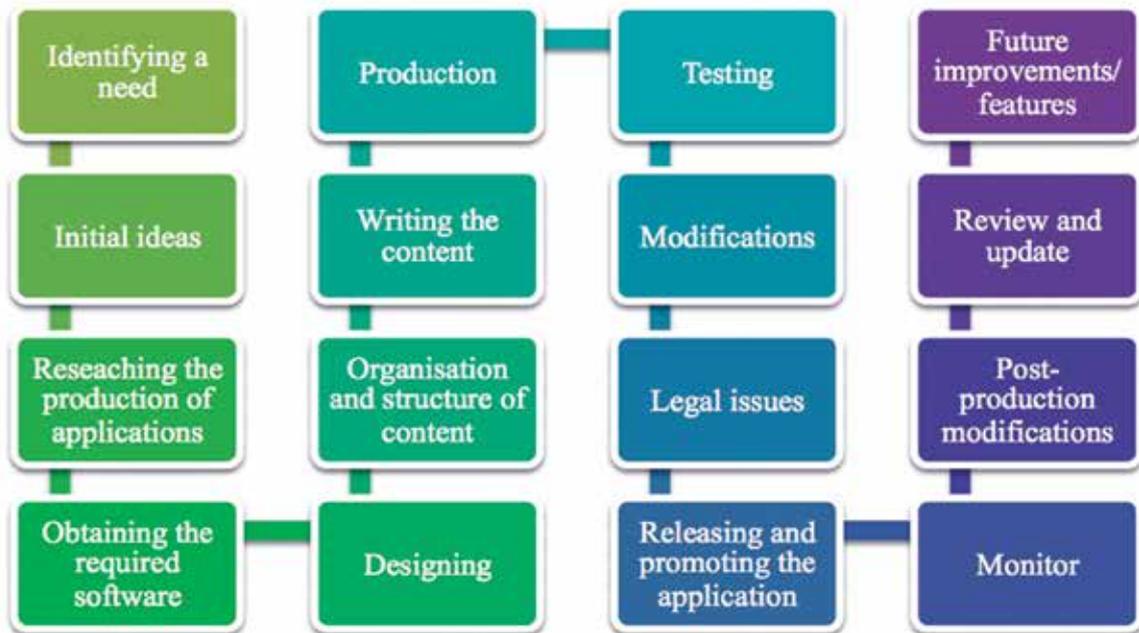
*“...evidence based self-care strategies...”*

The aim of this study is to deliver evidence based self-care strategies and preventative oral health care advice via smartphone technology.

## Objectives

- To investigate the use of social networking sites in relation to dental pain.
- To evaluate pharmacological and non-pharmacological advice; to provide to patients as self-care advice.
- To develop a new media platform for patients to access evidence based oral health care advice – by distributing a unique peer reviewed app for patient use.

## Explanation of development



## Methodology and explanation of development

*“...identify common dento-alveolar causes of facial pain...”*

Various literature sources were searched to identify common dento-alveolar causes of facial pain in primary care, and signs and symptoms that are sensitive to the initial complaint. During my research, I reviewed current prescribing guidelines regarding OTC analgesics to relieve dental pain – in order to provide relevant temporary pain relief advice, until an appointment with a dental care professional can be arranged. Using a number of resources, evidence-based preventative oral health care advice was selected, suitable to convey to patients. Once I obtained the necessary software, I was able to design and compile the information that I had researched into a number of HTML content pages. The application was then developed, and tested on the simulator to see how it would run on

smartphones and tablets. Peer reviews enabled me to identify any modifications that needed to be made, before it could be made available to the public. Since being released, the application was promoted via social media networking sites e.g. Facebook and Twitter, and is constantly being monitored.

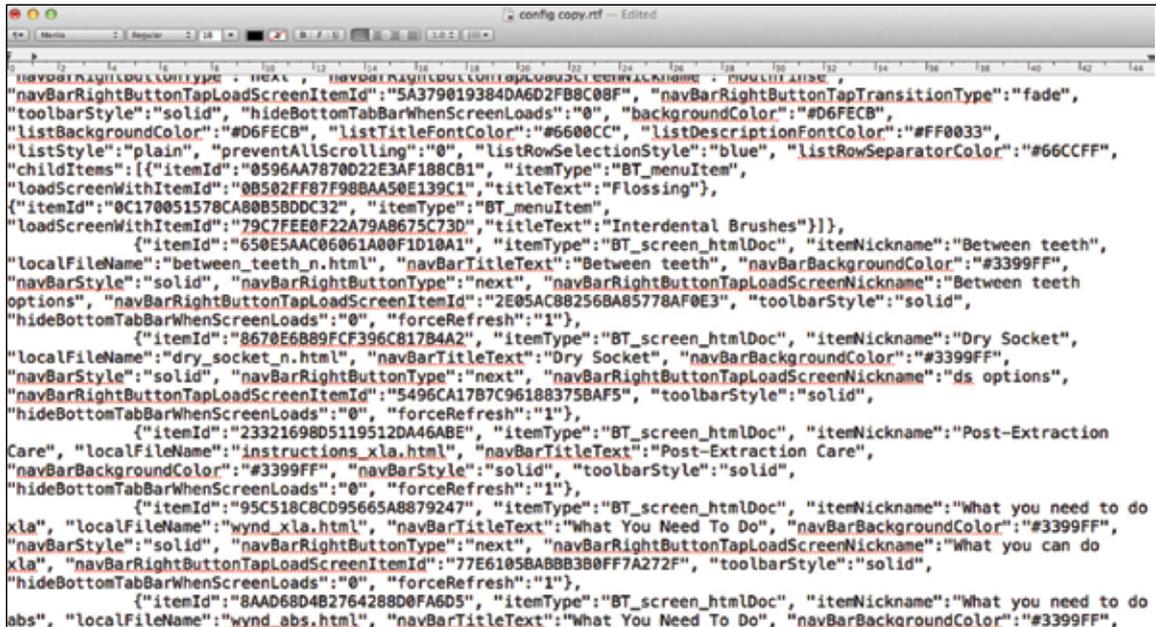
## Discussion

*“...seeking advice from social networking sites like Twitter.”*

The associated morbidity rates and high prevalence of pain reported in relation to dental pain led to members of the general population expressing their anguish or seeking advice from social networking sites like Twitter. It was important to recognise the use of different communication platforms that patients have been using, in order to target these individuals from a different approach that they may

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## An example of coding



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find effective and useful for temporarily managing acute dental pain.

The application was named “Dentify”, in which different dento-alveolar problems that arise in primary care were analysed and initial management guidelines were outlined – according to evidence-based advice and literature based research. As the purpose of the application was to offer self-care advice, including pharmacological advice in some scenarios, it was crucial to state that the application had not been designed to replace the need to see a dentist; it was only created to provide temporary guidance and preventative oral health information.

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*“On initial completion of the application it was tested by peers and patients alike...”*

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Designing and developing the application required organisation and structuring of the written content, as well as incorporating graphic designs illustrated by a digital

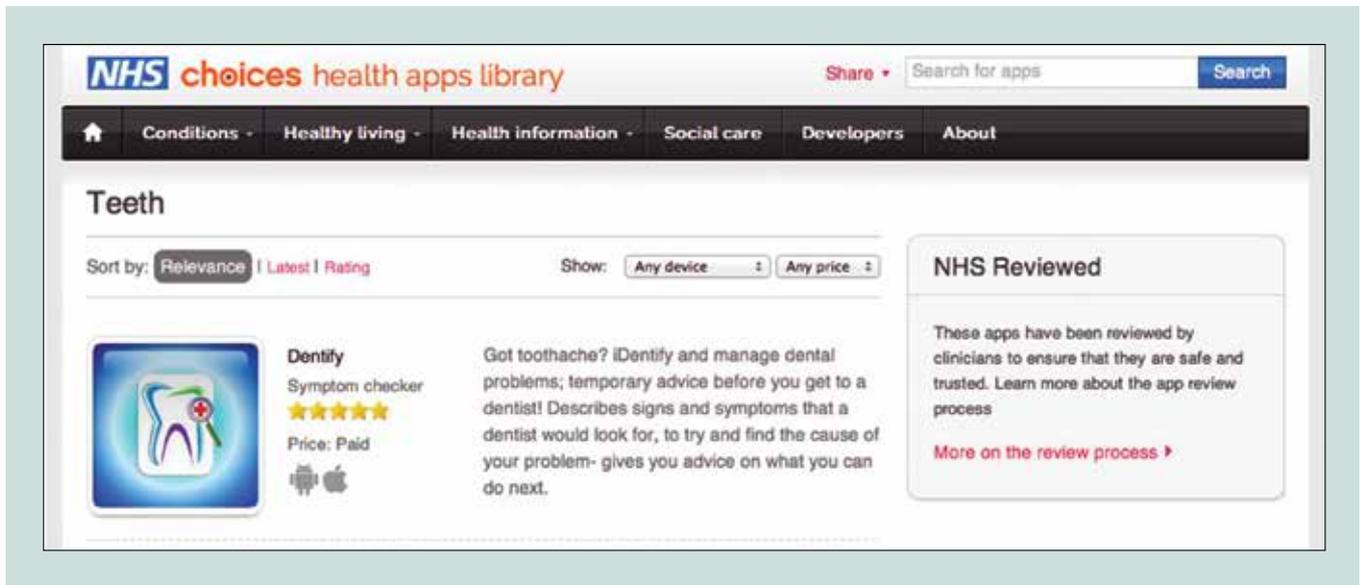
artist. On initial completion of the application it was tested by peers and patients alike, to ensure navigation and use of the application was satisfactory, but also to identify any preliminary modifications which needed to be made. If the project was to be carried out again with more time and resources, it would have been beneficial to increase the number of reviewers and appoint professional application designers at this point; this would ensure improvement in functionality and features of the application.

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*“...searched-for items relating to dental pain which then pointed users in the direction of the application”*

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In order to promote the use of the application, a Twitter account, Facebook page, and a website domain were created, to appear in searched for items relating to dental pain, which then pointed users in the direction of the application – therefore immediately targeting users who have difficulty managing dental problems. With increased resources and



time on the project in the future, the application is likely to be promoted further by expansively advertising the application more on networking sites such as Facebook, and other media platforms. The app is successfully listed on the NHS health apps library, controlled by the NHS Commissioning Board, ensuring that the app is peer reviewed and safe for patient use.

Considering the purpose of the application, it will require updates to ensure information provided is up-to-date and altered accordingly in the future, based on continuing guidelines and research.

## Summary

*“... a lack of evidence-based core information and advice that patients can follow easily..”*

There is a large amount of health care information and guidance accessible by the public through various media platforms. However, there is a lack of evidence-based core

information and advice that patients can follow easily, to manage acute dental pain and make informed decisions on managing their oral health.

## Acknowledgements

I would like to take this opportunity to express my sincere gratitude to Professor Damien Walmsley who was my Elective advisor for the project. Without his support, guidance and words of encouragement, this project would not have reached as far as it has done. I would also like to thank Dr Kirsty Hill who again supported my elective idea, and Professor Giles Perryer who granted permission for use of University equipment to get started. All the staff at the Dental School have been very supportive of the project, many thanks to Professor Deborah White for pushing the project forward on a national scale. A special thank you to members outside of the Dental School, Dillon Patel Art for image manipulations and David Patel, designer of Website Culture. I would also like to thank my family and friends who were involved in the testing and peer reviewing processes. Finally, many thanks to the Sands Cox Society and the Rippin family, whose financial contributions to the project have supported my small idea to become a reality, which extended beyond my own expectations.

# The use of Equine Assisted Therapy with at-risk adolescents

Lili Dawson, Final Year Medical Student

## Abstract

*“There is something about the outside of a horse that is good for the inside of a man.”*

Sir Winston Churchill.

*“The use of Equine Assisted Psychotherapy with ‘at-risk’ adolescents ...”*

The use of Equine Assisted Psychotherapy with ‘at-risk’ adolescents was objectively observed over a period of a month at the Red Horse Foundation. There is limited research regarding this emerging field, however many studies have demonstrated its efficacy and benefits for those involved. This report contains anecdotal evidence and case studies regarding the group of children observed both at the centre and in their school environment. Throughout the group there was a general enjoyment of time spent with the horses and an appreciation of how their behaviour affected the horses. However, there was varying impact of the therapy on their daily lives possibly reflecting the influence of exposure to high-risk environments on the efficacy of the therapy.

All names have been changed to protect client identity\*

*“The horse responds to the immediacy of your intent and your behaviour ...”*

## Introduction

Horses are prey animals making them highly sensitive, perceptive and honest in nature. The horse responds to the immediacy of your intent and your behaviour, and does so without assumption or criticism.

*“Equine-assisted psychotherapy (EAP) ...”*

Equine-assisted psychotherapy (EAP) combines traditional therapeutic interventions with a more innovative component involving relationships and activities with horses. Amongst other benefits it allows the client to develop their problem solving skills, manage emotional issues and tackle destructive or negative behaviours which are contributing to their psychological issues.

Although there is limited research available on EAP, there are studies suggesting its efficacy, B.T. Klontz et al showed



*Scenery at Red Horse Foundation, Thrupp, Gloucestershire.*

that those who participated in EAP experienced a stable improvement in their psychological symptoms. A further study looking at at-risk adolescents showed that those who participated in an EAP program experience greater positive therapeutic progress in psychological functioning than those who do not participate in an EAP program.

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*“... to study the use of EAP with adolescents ...”*

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The aim of my project was to study the use of EAP with adolescents at the Red Horse Foundation; in particular

how it affects the children both at the centre and in their everyday lives. This was done by objectively observing the progress of ten ‘at-risk’ adolescents during my month stay at the Red Horse Foundation in Thrupp, Gloucestershire.

### **At-risk adolescents and horses**

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*“... complex emotional and behavioural coping strategies ...”*

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Studies have pinpointed specific factors that frequently operate as high risk factors in the development of an ‘at-risk’ adolescent. Such risk factors can increase the risk of subsequent negative life outcomes. Children with multiple risk factors often display complex emotional and behavioural coping strategies as a result, which can be maladaptive and dysfunctional.

However, some of these children will develop into well adapted individuals. This is because they are deemed ‘resilient’. Resilience is a result of accumulative protective factors which can be developed in an individual.

Most of the children were from an emotional and behavioural special needs school. Their programme consisted of development of resilience factors and emotional awareness.

## The children at Red Horse Foundation

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*“... develop resilience factors and promote emotional awareness.”*

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The majority of children in the group have attachment issues and the consequent difficulties that they encounter put them at risk for future negative life outcomes. In order to minimise this risk, EAP/EAL aims to develop resilience factors and promote emotional awareness

In an avoidant attachment pattern, the child will learn to suppress their emotions and become withdrawn.

### Alex\*

#### Background:

Alex\* was adopted at 10 months old from an orphanage during which time he spent the majority of his time distressed in a cot, with no primary care-giver. Although he found a positive and nurturing home with his adoptive parents, his Mother reports developmental delays. He also called everyone who attended to him ‘Mummy’. Although there were no behavioural difficulties reported, his Mother spoke of his quiet and introverted nature, that he rarely expressed any emotions and that other forms of therapy hadn’t been useful.

#### Initial sessions:

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*“... he chose a different horse at each session ...”*

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Initial sessions worked on developing trust. Interestingly, he chose a different horse at each session possibly reflecting his early experiences leading to a maladapted attachment model. In initial sessions Alex\* was obedient with the tasks given but didn’t appear to be mentally engaged with very limited speech. This posed the question of whether his ‘default’ state is dissociation in situations of heightened arousal.

Before the second session his Mother reported that he went home and displayed an unusual positive emotional outburst, ‘that was brilliant Mum’. During the next session Alex\* seemed happier and more relaxed in his environment and around the horses. He was notably more present; offering more answers and engaging in the tasks although he still had moments of dissociation. He struggled with backing the horse up, but this was more of an assertiveness issue. Once he was shown how to back a horse effectively and reassured about being assertive, he became a lot more successful and responded positively.

*“He was quietly affectionate towards his horse ...”*

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He was quietly affectionate towards his horse throughout his third session. The task was to move the horse without a rope into a box in the corner of the arena. Alex\*, shut down and didn’t attempt different strategies, he retreated to stroking his horse who displayed signs of frustration, possibly reflecting Alex’s\* own frustrations. This was also seen in the group work, where there were moments where he attempted to join in with driving his horse into the corner, but he quickly retreated. This could be interpreted as a difficulty with externalising actions.

### Making changes

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*“... he had seemed more expressive at home ...”*

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Using natural horsemanship Alex\* was taught how to move a horse with intention and body language. Again, he struggled with external movement but to a much lesser degree. With the presence of a therapist, the ingredients of moving a horse were explored. Using examples of natural horse behaviour, Alex\* was able to discuss emotions, respect and assertiveness through the perspective of a horse. This seemed to lessen the anxiety associated with discussing emotions for Alex\* as his responses were much quicker and comprehensive. His Mum reported that over the previous weeks he had seemed more expressive at home, especially when he talked about the horses and RHF. Throughout the sessions Alex\* was able to learn how to be effective with

the horses to produce the desired outcome. This in turn increased his self-confidence and self-esteem, which led to greater social interactions and a decrease in dissociative behaviour.

On the other hand if parents are inconsistent with their emotional support for their child, this results in a 'resistant/ambivalent' attachment pattern and leaves children 'clingy' and anxious.

### **Peter\***

#### **Background:**

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*"Peter\* displayed disordered attachment."*

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Peter\* displayed disordered attachment. He has a tendency to become overly attached to females who show him affection and kindness and has an imaginary girlfriend. He comes from a high-risk background. In frustration he can be prone to aggressive and disruptive outbursts.

#### **Progress:**

During his sessions at RHF he became very attached to one of the smaller ponies. He has shown an increase in positive behaviours such as: management of self, relationship to the environment, connecting with horses, staff and peers. He has also shown a general decline in negative behaviours such as impulsivity and hyper arousal.

#### **Child's thoughts:**

When asked about his experiences with the horses he said that 'the horses have helped him to become calmer and less agitated'. He spoke of his favourite horse, saying that she is

'beautiful'. He states that his time at RHF is the best part of his week and he openly spoke about his aspirations to work with horses in the future, driving carriages.

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*"... the horses have helped him to become calmer and less agitated."*

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In situations where children have developed insecure strategies for dealing with emotion, they have difficulty in recognising and consequently tolerating their emotions.

### **Matt\***

#### **Background:**

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*"Matt\* has a diagnosis of ADHD"*

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Matt\* has a diagnosis of ADHD and is currently receiving medical treatment. Matt\* is a sweet natured boy from a large and chaotic family, with inter-familial aggression, alcohol and drug abuse. He is now placed with a foster family, who are 'helping him to be calmer and not lose his temper as much'.

#### **Progress:**

His main problems whilst at RHF have been distractibility and aggression towards his peers. He often finds it difficult to sit in the yurt and talk at the beginning of a session, but has learned to respect other people over the period. He is very proud of his knowledge acquired at RHF and likes to show others what he can do with the horses. Progress notes show an improvement in cooperating with peers and staff, attention to tasks and follow through of tasks with a decrease in impulsivity and hyper arousal.

#### **Child's thoughts:**

When asked about the horses he said 'I like to work with them because they don't say things back, you can just 'be' with them'. He also said that 'he can be calm around them because he didn't want to scare them.'

Emotional and behavioural problems in children may also be due to trauma. Trauma during the developmental years can leave a marked imprint on an individual's personality.

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Although trauma cannot be avoided in all cases, it is the consequent management of that child which determines the extent of the negative impact on their lives.

## **Kelly\***

### **Background:**

Kelly\* was removed from her mainstream school due to her angry outbursts and an inability to concentrate. At this time she had recently lost her father. During the subsequent two years attempts were made to engage her in counselling and various forms of therapy with little effect.

### **Progress:**

During her time at RHF she has also gradually opened up in talking about the loss of her father. A significant change was seen after a session looking at herd dynamics and observing the horse's feelings. She was able to discuss the feelings of her horse, noticing when she became anxious but wasn't able to talk about her feelings so this was not pushed. At the next session she was completely engaged and offering problem solving strategies. After her work with the horses she talked about the loss of her father, disclosing her sadness, feelings of loss and her anger.

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*"... gradually opened up in talking about the loss of her father"*

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### **Outcome:**

Since that session she has requested counselling to talk about losing her father. This is a huge step for Kelly\* as she is learning to reflect on her emotions and resolve internal conflicts. Beginning the process of understanding and learning from her grief will be vital in order to minimise the risk of negative life outcomes for Kelly\*.

## **Other students**

Throughout the period of time the other students varied in their engagement and benefit from the programme. Other



*Horses have a unique ability to sense limbic activity and autonomic nervous system arousal levels in others.*

---

children from the school only participated in a few sessions, one due to lack of engagement and the others due to removal from the school. Overall, there was a clear enjoyment of their time spent with the horses. All of the children were able to find a calm and responsive state by the end of most sessions.

## **The impact of EAP on the children's everyday life**

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*"... it isn't clear what effect it has on their everyday lives ..."*

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Although there is evidence to suggest that there is a long term effect of EAP, it isn't clear what effect it has on their everyday lives when they are away from that environment.

From observations made whilst at the school it would appear that the effect of EAP on their behaviour at school is minimal. There was an abundance of violence, aggression and hyperactivity. Interestingly, their teachers described them as 'wobbly' and 'out of control' on their

return from RHF. This could be due to the sheer contrast in environments between RHF and the school and their continuing exposure to high risk environments at home.

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*“... children from more stable environments demonstrated more positive behaviours ...”*

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Interestingly, the children from more stable environments (despite previous trauma) demonstrated more positive behaviours with less emotional instability. One child with a history of an abusive and neglectful upbringing and subsequent social services intervention responded remarkably to the therapy. During her sessions she was calm, focused and noticeably content. Even in situations that would usually provoke an extreme violent outburst (such as feeling threatened/confused), she was able to control her emotions and reflect on how they would have affected her horse. This serves as a great tool for this young girl to learn how to manage effectively her heightened arousal states. On speaking to her adoptive Mother she said, ‘working with the horses is teaching and reinforcing qualities in her daughter that will help her to recover and succeed in life’.

## Conclusion

The true extent of the potential of EAP as a successful psychotherapy alternative is at this time unknown. It is possible that its effects are due to the development of resilience factors, emotional education, developing attachments with a horse, experimenting with relationships and learning in a safe and natural environment. However, its efficacy is limited in cases where the child is still exposed to high risk environments. Children who are regularly exposed to risk factors may find it more difficult to establish new patterns of behaviour and emotional regulation that can be translated into everyday life. For these children, a greater amount of time may need to be spent in therapy whilst minimising risk as much as possible. This may explain the positive trends in the majority of the studies carried out with children in residential programmes.

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*Finally I would like to thank the Sands Cox Society for their support of my elective.*

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# University of Birmingham's Blue Plaque Trail

Clare Mullett, University Curator

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*"... nine portrait statues of great figures ..."*

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**C**arved in stone over the main entrance to the University of Birmingham's Aston Webb building, in the nine portrait statues of great figures from the worlds of art, philosophy, science and industry, is Joseph Chamberlain's vision for the University: 'A school of universal instruction, not confined to any particular branch of knowledge but taking all knowledge in its province.' These guardians watch over those who pass beneath, reminding them that the University is part of a living tradition of culture and learning.

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*"... University of Birmingham has been a home to pioneers ..."*

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Since its earliest days, the University of Birmingham has been a home to pioneers who have changed the world we live in. From the sciences to the arts, their groundbreaking achievements have been recognised and honoured at every level, including the Nobel Prize.

## University's Blue Plaque trail

The University's Blue Plaque trail, modelled on schemes adopted in many British cities, demonstrates how Chamberlain's vision has been realised. It celebrates those who have helped shape our heritage as a research university and showcases the University's broad cultural offer and its range of unique museum artefacts and archives.

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*"... the birth of inventions ..."*

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The University saw the birth of inventions such as the Cavity Magnetron used in radar and microwave ovens which

changed the world as we knew it. The feasibility of the atomic bomb, secrets of particle physics, mathematical analysis of Bessel functions and the mass of the earth were all discovered here. Furthermore, the work of the University's geologists has helped us to understand climate change and the formation of mountain belts.

## Health and life expectancy

Health and life expectancy throughout the world has been improved through the work of the University of Birmingham, with developments such as the variable-rate heart pacemaker, pioneering experiments in skin grafting, the synthesis of Vitamin C, and the obstetrical 'flying squads' of Hilda Lloyd. Social policy improvement, investigation into economic reform, and innovative town planning involving such individuals as Margery Fry, Sir William Ashley, Francois Lafitte and John Sutton Nettlefold have also greatly enhanced the quality of life worldwide.

## Composers, musicians and writers

Composers, musicians and writers of the stature of Sir Edward Elgar, Louis MacNeice and David Lodge, have taught at the University of Birmingham; Sir Granville Bantock helped found the City of Birmingham Symphony Orchestra; and new critical areas of academic study were developed here by Nikolaus Pevsner in the history of industrial art and design, Professor John Sinclair in corpus linguistics, and the Centre for Contemporary Cultural Studies in the study of 'mass' culture.

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*"Outside the Medical School ..."*

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Outside the Medical School, the blue plaques mark the achievements of Dame Hilda Lloyd, Leon Abrams and Ray Lightwood. Here are the excerpts from the trail:

## Dame Hilda Lloyd

Dame Hilda Lloyd, Professor of Obstetrics saved many through her midwife 'flying squads' set up in 1936.

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*"... first female professor ..."*

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Hilda Lloyd became the first female professor at the University of Birmingham in 1944 and the first female President of the Royal College of Obstetricians and Gynaecologists in 1949. Passionate about working to alleviate the symptoms of poverty that led to the deaths of many poor pregnant women, one of her many accomplishments was pioneering the use of obstetrical 'flying squads' in Birmingham.

Hilda Nora Lloyd (née Shufflebottom) was born in Birmingham and educated at King Edward VI High School. She entered Birmingham Medical School and qualified in 1916, at a time when around 40% of medical graduates at the University were female due to WWI. After further training and junior posts in London, Lloyd returned to Birmingham as a resident in Obstetrics and Gynaecology at the Maternity and Women's hospitals. She qualified as a surgeon in 1920.

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*"... chair of Obstetrics and Gynaecology in 1946 ..."*

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After rising through the ranks, becoming a lecturer in 1934, professor in 1944 and chair of Obstetrics and Gynaecology in 1946, she served on planning committees for blood transfusion and radiotherapy, the hospital governing board, NHS maternity committee and the advisory board for the Royal College of Nursing. Local engagement led to national recognition and in 1949, after overcoming considerable opposition, she was elected by her male peers to be the first female President of a Royal Medical College, at the Royal College of Obstetricians and Gynaecologists. Despite this initial opposition, her ability, charm and tact led to two unanimous re-elections.

Lloyd was interested in practical solutions and one of the major innovations she introduced was the use of obstetrical 'Flying Squads' in 1936. The Birmingham



Jacob Epstein Dame Hilda Lloyd. Bronze bust, 1951.  
Research and Cultural Collections, University of Birmingham.

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'Flying Squads' combined obstetrical care with the capacity to carry out emergency resuscitation and, most crucially, blood transfusion. The team generally consisted of an obstetrician who was skilled at resuscitation, a midwife and a nursing student, travelling in an ambulance equipped with transfusion supplies. Whilst the majority of each flying squad's time was spent dealing with deliveries and post-natal emergencies, they also dealt with complications surrounding abortion. Given its illegal status, back street abortions or self-aborting led to a significant proportion of deaths. The ability to provide emergency care and transfusions at the scene therefore saved the lives of many women.

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*"... introduced the use of obstetrical 'Flying Squads' in 1936."*

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Whilst childbirth in the UK today is a relatively safe event, this has not always been so. Since the 1950s, the 'Confidential Enquiries into Maternal Deaths' have collected information about why mothers die in pregnancy and childbirth. Lloyd was one of an influential group of obstetricians and midwives whose work led to the initiation of such a ground breaking audit.

## **Leon Abrams and Ray Lightwood**

Leon Abrams and Ray Lightwood developed and implanted the first variable rate pacemaker in 1960.

Cardiothoracic Surgeon, Leon Abrams and Medical Engineer, Ray Lightwood developed and implanted the first patient controlled variable rate heart pacemaker. It was subsequently developed as a commercial pacemaker with the support of the electronic engineering company Joseph Lucas Ltd of Birmingham.

Development of the pacemaker started in response to the high mortality associated with slow heart rates after open heart surgery. Abrams and colleagues at the Queen Elizabeth Hospital realised that such a device would also be of value in patients with slow heart rates arising from other causes.

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***"... first patient controlled variable rate heart pacemaker."***

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With Abrams and Lightwood's use of electrodes attached to the heart coupled to an external pacemaker, they were able to keep all the electronic components outside the body, and could replace in the (highly likely) event of failure. The primary circuit consisted of an inducing coil supplied by a portable device which produced short pulses at adjustable intervals and intensity. This was, therefore, the first rate-adaptive (patient controlled) permanent pacemaker.

The first implant took place in March 1960, with two further implants in April 1960. These three patients made good recoveries and returned to a high quality of life. By 1966, 56 patients had undergone implantation with one surviving for over 5½ years. In 2002, there were still three surviving pacemaker patients within Birmingham whose first pacemaker system had been of the Lucas-Abrams type.

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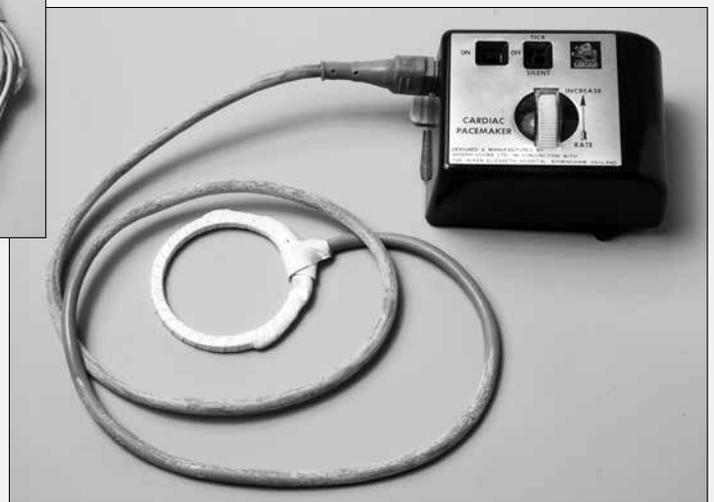
***"The commercial Lucas-Abrams device was introduced in 1964 ..."***

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*Above: Original mock up of pacemaker.*

*Right: Early commercial Lucas model.*



The original device used four 9 volt dry batteries. The commercial Lucas-Abrams device was introduced in 1964 and used a single 1.5 volt battery, lasting approximately one month. Patients were able to change the battery themselves and were issued with two devices to cover the event of failure.

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***“Leon Abrams developed an artificial heart valve ...”***

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Other projects that Ray Lightwood was involved in include an electronic fibrillator, the prosthetic blood vessel and a pain inhibiting pulser. Leon Abrams developed an artificial heart valve which was in regular use for many years.

The use of pacemakers to improve heart function in patients with severe heart failure is now the subject of a number of research projects held jointly between the College of Medical and Dental Sciences and University Hospital Birmingham.

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***“... the immense accomplishments of men and women who have worked here in the past.”***

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The scope and scale of individual and collective achievements at the University of Birmingham are remarkable, and the blue plaques around its campus serve as reminders of the immense accomplishments of men and women who have worked here in the past. We hope they will inspire those who pass by and will encourage yet greater achievement in the future.

Although the University's Blue plaque trail is complete, if you would like to suggest other achievements of international importance that we might be able to celebrate, please do get in touch.

[rcc@contacts.bham.ac.uk](mailto:rcc@contacts.bham.ac.uk)

The Blue Plaque trail is available to download here:  
<http://www.birmingham.ac.uk/culture/collections/blueplaque.aspx>

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## **Introduction**

**H**aving really enjoyed volunteering with disabled children in the past, I wanted to explore how I could incorporate my passion for working with disabled children into my career in medicine. Therefore I organised my elective with the Developmental Paediatrics team in Auckland, New Zealand. Spending time in developmental paediatrics, neuropaediatrics, neurosurgery and clinical genetics at the Wilson respite and rehabilitation centre, I learnt how to interact with disabled individuals and their families, and quickly appreciated how crucial the multidisciplinary team is in improving quality of life for children and their families.

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## **Children with disabilities**

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***“Developmental disabilities ... affect  
~4% of children ...”***

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Child development occurs in a predictable manner, and all should achieve developmental milestones in speech and language, cognition, daily living and gross, fine, motor, social and personal skills at appropriate times. Developmental disabilities, including global developmental delay, intellectual disability, multiple congenital abnormalities and autism spectrum disorder, affect ~4% of children, comprising a significant part of paediatric caseload.

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***“... not all children with developmental delay develop intellectual disability ...”***

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Developmental delay occurs when the child takes longer to acquire skills; it can either be specific or global depending

# Guidelines for chromosomal microarray testing counselling in paediatrics

Emma Godfrey, Final Year Medical Student

if one or more fields are delayed. The delay is classified as significant when skills are less than two standard deviations below the age appropriate average. Many children with developmental delay are later found to have intellectual disability. Intelligence quotient testing formally assesses cognitive function in children, and those with a score less than 70 are said to have intellectual disability (further subdivided into mild, moderate and severe: 70-50, 50-30, <30, respectively). However, it is important to note that not all children with developmental delay will go on to develop intellectual disability as conditions such as cerebral palsy, autism spectrum disorder, anxiety and some neuromuscular disorders, or lower socioeconomic status can cause delayed development. Multiple congenital abnormalities broadly defines those born with ambiguous genitalia, two or more major anomalies, multiple minor anomalies or growth retardation associated with anomalies, while autism spectrum disorder is a term used to encompass a vast spectrum of disorders that are primarily characterised by severe social impairments in reciprocal social interaction and communication, restricted interests and rigid and repetitive behaviours.

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*“... to find the underlying cause of disabilities ...”*

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The aim of the developmental paediatric service is to find the underlying cause of disabilities as defining the molecular defect, assist medical management, guide prognosis, facilitate access to school/insurance services, enable future genetic counselling and be reassuring for families. My previous work with disabled individuals has highlighted how this is a complex task, with many lacking a definitive diagnosis. Such children generally end up being classified as having “global developmental delay” in the UK, whilst most disabled children I met in Romania were labelled as “autistic”.

Current recommendations are that all children with developmental disorders should receive a range of investigations including serum creatine kinase, calcium, thyroid function, iron, urea and electrolytes, urate, lead and biotinidase levels, alongside genetic testing, an EEG, neuroimaging and metabolic tests if specific features occur. Currently chromosomal microarray (CMA) is the first line genetic investigation. However, CMA testing is ambiguous, can generate uncertainty and raises ethical issues.

## Chromosomal Microarray

CMA compares thousands of DNA sequences from a patient sample against a control DNA sample, identifying copy number variants (CNV), low level mosaicism and chromosomal rearrangements. Aiding diagnosis of children suffering from developmental disabilities, it detects abnormalities in 15-20% of those with developmental delay, intellectual disability, multiple congenital abnormalities, and in 5-10% of those with autism spectrum disorder. Compared with conventional karyotype testing, CMA is more likely to give uncertain results, especially as CNV are present in >1% of the population, with the majority being benign.

## Challenges associated with CMA testing

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*“... difficult to differentiate between benign and pathogenic variants ...”*

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**Ambiguous results:** The relatively novel nature of the test means databases are limited, making it difficult to differentiate between benign and pathogenic variants, resulting in the term “variants of unknown significance” (VOUS). International databases help determine their likely significance, but parental genetic testing is often required;

new mutations are probably causal, but this is less likely if the VOUS is present in parental DNA. Interpretation is further complicated by the multifactorial nature of many disorders, together with variable expressivity, multiple phenotypes and incomplete penetrance. This increased uncertainty can create patient anxiety and professional doubt. Moreover, CMA does not detect balanced translocations, inversions, transpositions or small-scale or point mutations, as it only has a maximum resolution of 1 kilobase; therefore, a normal result does not mean there is no genetic cause. This needs to be explained to families as there is still an increased likelihood of having another child with similar problems and further targeted testing may be needed. Families should also be forewarned that CMA can potentially uncover incidental findings (e.g. concomitant pre-symptomatic mutations, and issues relating to paternity).

<b>Table 1: Possible outcomes and their significance that should be explained</b>	
Normal	~65-70%: does not mean no genetic cause/ that their child is 'normal'
Variants of unknown significance	~10-20%: further subdivided in to likely, uncertain and likely
Abnormal	~5-20%: specific causal mutation identified
Incidental findings	<1%: pre-symptomatic mutations
Family relationships	non-paternity, parental consanguinity, incest

***“Consent for DNA storage is recommend in the UK ...”***

**DNA storage:** Consent for DNA storage is recommend in the UK, and is legal requirement in New Zealand under Rights 7 (9) and (10) of the Health and Disability Commission Code. The added emphasis in New Zealand is in part in respect for Maori culture. The Tangata Whenua (people of the land) view DNA and genes as tanonga (property/possessions); in 1840 Chiefs signed the Treaty of Waitangi with the Crown to have ‘undisputed control over their land, their villages and their possessions’, therefore

some Maori do not support patenting of genes or sending DNA off-shore for testing and storage.

***“... careful pre- and post-test counselling in order to achieve informed consent and reduce anxiety.”***

**Informed consent:** As CMA results can be ambiguous, generate uncertainty and raise ethical issues, patients should have careful pre- and post-test counselling in order to achieve informed consent and reduce anxiety. Information sheets should supplement consultations, reminding patients what has been discussed, helping decrease anxiety and obtain informed consent. It is recommended that abnormal results or VOUS should be discussed face-to-face as this increases understanding and minimises confusion from misleading internet searches. Subsequently a clinical genetics referral is useful, allowing specialists to explain what the findings mean and then monitor for new advances.

**How are the challenges of CMA testing met in clinical practice?**

***“... to develop draft standards for counselling ...”***

The Developmental Paediatrics team at Auckland hospital were aware of differing practices between doctors, with possible shortcomings in service provision. Therefore, whilst on my elective I conducted an audit, aiming to identify any areas of weakness and suggest improvements, thus improving the standard of care and the experiences of families. To conduct an audit, there needs to be a gold standard against which current practice can be compared. Currently, despite several papers stressing the need for formal guidelines, no such guidelines covering CMA counselling have been published by any professional body, with the American Academy of Pediatrics recommendations for genetic testing predating CMA use. I therefore worked with my supervisor in Auckland to develop draft standards for counselling (Table 2), using a systematic review of the current literature (US, New Zealand, Australian and European articles) and through discussions with genetic and developmental paediatric specialists. No similar audits have previously been published.

## Standards for an audit

Table 2: Standards for an audit of conducting chromosomal microarray in children with developmental disorders in Auckland, New Zealand	
The following should be taken and documented:	
<b>Pre-test:</b>	
1.	All patients should have appropriate pre-test counselling in order to achieve informed consent, including discussion of potential test outcomes and of storage of DNA
2.	A plan should be made on how results will be communicated, including normal results and VOUS
3.	All patients should be given a CMA Information sheet
4.	All should sign a consent form agreeing to the procedure
<b>Test results: Unless agreed otherwise in advance and so documented:</b>	
5.	Patients should be informed of their abnormal test result face to face, within 4 weeks of the result becoming available
6.	Patients should be informed VOUS within 4 weeks of the results becoming available, how this is done being decided in advance with the patient
7.	Patients should be informed of normal results in writing within 4 weeks of the results becoming available
8.	A genetics referral should be offered to all families where there was an abnormal or VOUS result within 4 weeks of the result becoming available

## The Audit

*“... 28 patients who had had CMA requested”*

Administration had identified 28 patients who had had CMA requested by the Auckland Developmental in 2011, through

return of laboratory analysis. I examined their medical records extracting information on demographics; receipt of written information about CMA; documentation of counselling (test discussion, possible results, DNA storage); written consent; the result, and documentation of when/how conveyed to parents; whether offered a genetic referral. With the help of a statistician I then analysed the results (figure 3).

## Audit results

Figure 3: Audit results			
Pre-test counselling		Documented counselling: 14/28	
		Documented consent for DNA storage: 3/28	
		Documented discussion of potential CMA results: 4/28	
		Received Patient information Leaflet: 8/28	
		Signed a consent form: 1/28	
Test Results	Normal 20/28	8/20 families were written to Average 6 days	None were offered genetics referral
	VOUS 5/28	1-told face to face, 2- phone, 1 by voicemail, 1-written to Average 24 days	4/5 were offered a genetics referral
	Abnormal 3/28	2/3 were told face-face, 1 was written to Average 36 days	All were offered a genetics referral

## Discussion and conclusions

### *“... management of no cases meeting all the draft guidelines ...”*

My audit showed clinical practice varied greatly, with management of no cases meeting all the draft guidelines that I had developed in consultation with the local clinical team. The only standard achieved >50% of the time was referral to a clinical geneticist. Although this could reflect lack of documentation of discussion, it is not possible to exclude clinical practice that is less than ideal; moreover, documentation is an important aspect of patient care and the value of formally documenting such information is widely recognised.

### *“... standards developed were appropriate for future use ...”*

At the end of my elective I met with the developmental paediatric team to present my findings and discuss the results. They agreed that the standards developed were appropriate for future use, with the possible exception of written consent. They argued that as CMA does not cause ‘significant adverse effects on the consumer’, and as it would detract from their main focus of the consultation, consent is unnecessary. However, Auckland’s genetics department and the literature review reasoned that signed consent not only served legally to document consent, but as source of information for the family. Therefore it was decided to use consent forms at clinicians’ discretion.

### *“... the team supported the use of a checklist ...”*

To improve families’ experiences and ensure they receive appropriate counselling, the team supported the use of a checklist, ensuring that steps involved in pre-test discussion occur (figure 4). They felt it would not only serve as a useful reminder for them but guide registrars through the process.

### *“... the clinical team are now confident in using CMA ...”*

**Figure 4: Checklist for pre-test meeting**

• Discussion of what the test involves
• Discussion potential outcomes
• If the family are happy to go ahead with the test
• Discussion and consent for DNA storage
• Information leaflet given
Consent form signed

The team also supported the recommendation for improved training of clinicians ordering CMA. CMA was introduced in Auckland in 2010, meaning that this audit reflects a time where clinicians were becoming familiar with this relatively new test. Although the clinical team are now confident in using CMA, when it was introduced many said they were uncertain. Several articles worldwide have drawn attention to need for better training of those ordering CMA, as many clinicians feel ill-equipped to counsel and interpret results. This is a particular issue in many settings as the capacity of the medical genetics workforce is often insufficient to meet demand.

### *“... need to develop guidelines proactively and implement clinical education in relation to CMA..”*

My audit has highlighted the need to develop guidelines proactively and implement clinical education in relation to CMA. This would improve the experience of families undergoing genetic testing. With the rapidly expanding field of clinical genetics and the introduction of exome sequencing, development of authoritative guidelines in this area is even more imperative as such high resolution testing will detect more incidental findings and VOUS.

## Acknowledgements

I would like to express my very great appreciation to Dr Phillipa Clark developmental paediatrician Auckland New Zealand, for her support and advice. I would also like to thank; the Stuart Green Memorial Trust, the Clinical Genetics Society and the Institute of Medical Ethics for their generous contributions.

# Love at First Sight

Richard Cherry (M London 1967)

*“According to Michael Flanders there are only two sorts of stamp, “English, in sets at the beginning of the album, and Foreign, at the back, all mixed up”.”*

**S**omeone should have told him that they are works of art. Or when textbooks are dull, read stamps on the subject.

There are more than two centuries of Orthopaedic history in this one.

Nicolas Andry was a French physician who in 1741 published *Orthopédie*, a book dealing with the use of splints for the treatment of deformities in childhood. The title came from the Greek for *straight* and *child* and his picture of the gentle realignment of a bent sapling soon became the universal symbol of Orthopaedic surgery.

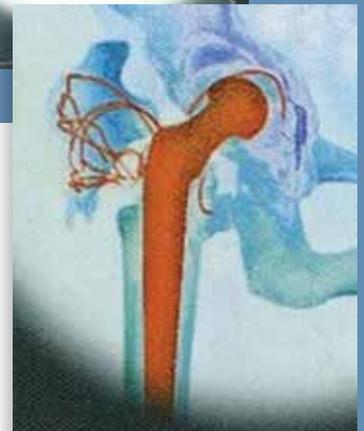
More than 200 hundred years after Andry the Japanese produced this stamp to celebrate a symposium on total hip replacement. We see all the features, with the bony anatomy of the pelvis and femur, the acetabular and femoral components, and cement mantle. Who needs a textbook!

*“To my surprise there are so many stamps in this category that I have had to introduce my own ranking system.”*



Figure 1:  
Japan – Hip Replacement.





It is important to get the details right though. Our own Royal Mail had a narrow escape in 2010 with one of the stamps in a set celebrating British achievement. The original design for the Charnley hip replacement had a failed trochanteric attachment. Fortunately it was noticed after the designs were published in our national newspapers. Nobody knows who submitted the original, and the Charnley Trust have declined to comment.

It was the Japanese stamp that started my Thematic Collection about 30 years ago, when I saw it on a postcard from a surgeon to a friend who had a hip replacement. – yes, Love at First sight. It took me half a day to find a dealer who stocked it; he sold me a block of four for only 35p. Several dealers offer a thematic service for new issues and I have had a subscription ever since for “Medicine and Health”. To my surprise there are so many stamps in this category that I have had to introduce my own ranking system. By far the most numerous are “definitives” (ordinary day-to-day stamps) with an overprint to raise

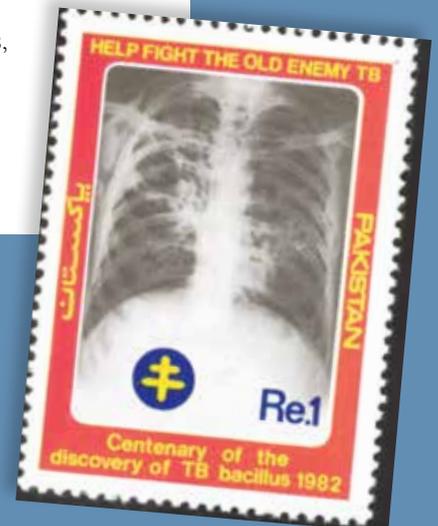
money for the Red Cross or some other charity, or as part of a public health campaign. I put those at the bottom of the list if they do not illustrate any genuine medical history. They do say something about the social history of particular countries though, with frequent references to Tuberculosis in the early 20th century and AIDS latterly.

This CXR from Pakistan qualifies, even though the print quality is rather blurred. It shows TB at a more advanced stage that we usually see in the UK.

Top: Figure 2:  
UK – British Achievements.

Above right: Figure 3:  
UK – Charnley hip  
replacement.

Right: Figure 4:  
Pakistan – Tuberculosis.





Top: Figure 5:  
Canada –Frederick Banting and  
Wilder Penfield.

Above: Figure 6:  
Canada/China – Norman Bethune.



Top of the list are those that celebrate achievements in that country. These really do illustrate medical history. From Canada.

I am indebted to Alex Wright who told me that Frederick Banting was formerly an Orthopaedic surgeon, with time on his hands because his Practice was rather quiet. He read journals in his spare time and came across experimental work on the pancreas that eventually led to the discovery and production of Insulin.

Canada and China had a simultaneous issue celebrating Norman Bethune (look him up on Wikipaedia).

It is a lot easier to obtain *Foreign* stamps these days because *foreign* travel is so frequent. Dealers in the big cities usually have the complete set of that country's stamps and these gnome-like individuals in their dusty little shops are always pleased to sell me the missing items that I have browsed from Gibbon. I had a major triumph in San Francisco in 1991 when the dealer in US Stamps Inc saw what I was looking for. "You might be interested in this album that belonged to man who died recently". There were hundreds of stamps that I needed, from lots of countries, all dated before I had started collecting. "How much?" I said. "It's two hundred dollars". I hesitated a millisecond before agreeing, no haggle. His colleague came up, "Maybe the gentleman would be interested in the second volume". I realised then that what I had seen was countries A-K and that he was offering L-Z. That cost another 250 US, so 450 in all. There were nearly three thousand stamps in the collection, and at less than 20c each it was a bargain.

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*"A great way to spend a wet  
afternoon may however become  
a major project ..."*

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I have taken this a step further with friends who mention plans for an exotic holiday and who then get strangely excited by the idea of taking my shopping list with them. A *great way to spend a wet afternoon* may however become a major project, dwarfing everything else that they do. Nevertheless, they always dine out on the story of how they found the gnome (dealer), and how it has inspired them to start a thematic collection on music or football.

Infection control started with Semmelweiss and can be traced via Pasteur, Lister Fleming Ehrlich, Florey and Chain. (Figure 7: Semmelweiss on Hungarian stamps and Figure 8: Ehrlich and von Behring on German stamps.)



Above: Figure 7: Hungary – Semmelweiss.

Left: Figure 8: Germany – Ehrlich & von Behring.

Some stamps speak of a decline in medical care. Look closely at this 2001 issue from Syria and remember what has happened subsequently; the skull was a warning of the lethal effects of inhaling cigarette smoke.



Above: Figure 9: Syria – anti smoking.

Papanicolaou is rightly celebrated in Greece – but I had not heard of his disciple, Prof Juan Crottogini until Uruguay issued this stamp.

He made a formidable contribution to Women's health as gynaecologist and then as a politician.



Right: Figure 10: Uruguay – Juan Crottogini.



Nobel Prize winner sets should be kept together even if not all are medical. There are three out of five in this Australian issue.

Notoriously there are countries that produce commemoratives as a source of revenue and not with any genuine intention of using them for mail. I try to avoid them, unless they are very pretty and not too expensive. The albums would otherwise be overcrowded with issues from Macedonia, Transkei, San Marino and obscure Pacific Islands. I am inconsistent with my rules though, especially with Medicinal Plants of which there are enough for an entirely separate collection. There are good reasons for the name, *Lignum vitae*, but the others must wait for another day.

Finally, perhaps you might like to think about your travel plans. If any of you fancy the idea of a stamp-search one morning do please let me know.

[richard.cherry@doctors.org.uk](mailto:richard.cherry@doctors.org.uk)

Above: Figure 11: Australia – Nobel prize winners.

Right: Figure 12: Medicinal plant *Lignum vitae*.



# From Birmingham to Bermuda

Gordon Bates (1989)



**H**ow many of you have read through the international jobs section of the BMJ and thought, if only? In June 2013, I realized a long held ambition and went to work for the Child and Adolescent mental service in Bermuda. I had first seen an advertisement for the consultant post in 1998 and seriously considered the move then, with my young family. However, I was advised at the time that I would need more experience. Fast forward fourteen years and I spotted the job again in the BMJ. It was a ghastly, grey autumnal Midland's day and I had spent over an hour on the M6 commuting to work. On a whim I filled in the online application form.

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*Cooper's island and Bermuda's fabulous beaches.*

Bermuda Hospital's board was looking for a substantive consultant but I offered my services for three months as part of a career sabbatical that I had planned for the summer of 2013. I heard nothing and forgot about it. About six weeks later I came home from work to hear that my wife had had a nice chat with the personnel lady in Bermuda and they both felt that I was perfect for the job. All I needed to do was to get through the teleconference interview later that week. I was pleased I had mentioned my passing whim to my wife otherwise it might have been a more challenging conversation with her.

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*"...I offered my services for three months as part of a career sabbatical..."*

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The interview was difficult in practical terms rather than because of the questions. Being interviewed by four people that you cannot see makes it hard to gauge when to speak and when to stop speaking. I tended to fill in the gaps by talking. They were looking for someone with both inpatient and community experience as there was a small inpatient unit which could be opened when necessary. I had experience in both areas and fitted the bill. I was offered the job.

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*“...hardest part was supplying the documentation...”*

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Probably the hardest part was supplying the documentation to ensure my work permit and registration with the Bermuda Medical Council. There is so much bureaucracy they have a whole Credentialization department at the hospital. I had to find a public notary in the UK to notarize all my university documents and college membership certificates. I had to get the GMC to send a letter by post to Bermuda to demonstrate I was in “Good Standing”. A simple visit to the GMC website was insufficient. I had to have a full medical check-up including chest x-ray and antibody levels. I had to find certificates demonstrating I had recent life support and control and restraint training. The list went on. I had to send them via Federal Express only to discover a week later that more paperwork was required. I ended up driving to the FedEx department at Birmingham airport on a Friday to ensure the paperwork got there in time for the monthly immigration meeting. It took about three months to secure all the paperwork and get confirmation so I could start. During my time in Bermuda, I discovered that I had it easy as a British national and that three months is considered fast. The process is far worse for people from other countries.

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*“My good first impressions were confirmed immediately.”*

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At the end of May I flew into Bermuda. It is a small but stunningly beautiful island. It is only 20 square miles in area and has 65,000 inhabitants. Although it is in the mid Atlantic rather than Caribbean it has typically tropical fauna. There are palm trees and hibiscus as well as oleander shrubs

and poincianna trees which have bright red flowers and were in full bloom when I arrived. My good first impressions were confirmed immediately. My taxi driver returned unprompted, an hour after he had dropped me, with the hand baggage which I had left in his car. My hand baggage had all my cash for the first month as well as all my hard won employment documents. Losing it would have been a disaster. The cabbie even refused a tip.

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*“Bermudian people are polite and take pride in their traditions.”*

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Bermudian people are polite and take pride in their traditions. People wish a “Good Morning” to strangers in the street. Work colleagues are known as Mr, Miss or Doctor for years, before first names are considered appropriate. The island grinds to a standstill for the summer two day bank

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*Bermuda Child and Adolescent Psychiatry Clinic.*



holiday which surrounds the annual cricket match between two local sides. Bermuda's airport immigration department is the only one that I know, which has not only a large picture of a very young Queen Elizabeth but a fireplace to mount it above!

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*“The Child and Adolescent (CAS) team was friendly...”*

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The Child and Adolescent (CAS) team was friendly and welcoming (although I remained Dr Bates for my entire stay). Most were from Bermuda but some from Caribbean islands. The team was well-staffed with a services manager, a psychologist, a social worker, a staff grade or resident

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*Flatts village: one of Bermuda's original ports and close to the clinic.*

doctor and an inpatient and outpatient nurse. There were also positions that were new to me: clinical assistants (who chased up reports and paperwork and reminded families of forthcoming appointments) and experiential therapists (who used activities to foster positive therapeutic relationships with the children).

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*“My timetable and outpatient clinics were prearranged...”*

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I was given a day's overlap with the outgoing consultant, which helped with the transition, particularly with the complex young people on the inpatient unit. My timetable and outpatient clinics were prearranged so I just had to get on with it. The follow up work was mostly medication review for boys with ADHD and girls with depression but the new patients were more varied. In my first week I got very excited



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because I made a Kleine-Levin syndrome diagnosis which eventually led to my presenting at the Grand Round at Bermuda's General Hospital.

I had to learn about a whole new configuration of services, some with obvious UK equivalents some without. There is an Education department, a Child and Family service (Children's social services), and the Child and Family centre and Bermuda Youth counseling services, two charity funded counseling service. There are school counselors who are not trained counselors and school adjustment counselors who are. There is a strange overlap with private practice that is partly paid for by Bermudian's work insurance schemes. There are several counseling psychologists on the island but a fair amount of doctor-shopping, too. If families do not like the Bermuda opinions they take their children to Boston for a US opinion. The CAS is then expected to carry out somebody else's management plan.

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***"The majority of referrals come from schools or parents."***

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The majority of referrals come from schools or parents. There are private general practitioners but they only refer occasionally. There is no equivalent of the British GP taking a central gate-keeping role and acting as case manager and information repository for the patient. As a result there is no need to write clinic letters which significantly reduced my work load. The downside is considerable duplication of work across all medical specialties.

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***"...major social stigma ... with mental health..."***

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There is major social stigma associated with mental health issues among black Bermudians and significant resistance to medication use, I presume related in part to a high proportion of Seventh Day Adventists on the island. With very few exceptions, medication has to be paid for by parents. Some prescriptions run to hundreds of dollars which also impacts on their use.

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***"...problems when the father cannot be found."***

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There is a high proportion of single mothers with children from different fathers. CAS will not treat without father's permission which can lead to problems when the father cannot be found. Many fathers do not like the idea of psychiatric treatment for their children but are not in the position of looking after them and seeing the behavior every day. This means they have the power but not the responsibility. Many single mothers will have more than one job which limits the time they can spend with their children. One of the mothers that I met communicated with her daughter almost exclusively through text messaging, reminding her to do her homework and chores but rarely seeing her from week to week.

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***"Obesity is a major problem on the island..."***

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Obesity is a major problem on the island for both adults and children. This is despite the fact that food is generally expensive as almost all has to be shipped in. However high fat, high calorie foods are cheaper and sugar rich soft drinks are preferred to diet alternatives. Antipsychotics drugs are used in psychosis as well as ADHD and autism. They have the potential to reduce auditory hallucinations and delusions as well as problem behaviours like temper outbursts and aggression. They also increase appetite and cause significant weight gain for many young people. Usually child psychiatrists monitor with regular height and weight checks and blood tests. When each set of blood tests costs several hundred dollars parents are reluctant to fund the insurance "copayments"; if they have the insurance at all. It reminds you of the value of the NHS.

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***"Bermuda ... has its fair share of social difficulties..."***

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Bermuda is an idyllic holiday destination but has its fair share of social difficulties, drug use, problem families and child psychiatric disorder. Low taxes mean government-funded services and safety nets are very limited. The global downturn has had an impact on tourism and international financial services, Bermuda's major industries. As a result government money as well as family budgets are stretched. This is quite a change. In the recent past, Bermuda had quite a boom time and many of the population benefitted. My

predecessor told me a story, dating back a few years, about asking the cleaner what she was doing the forthcoming weekend. He was rather taken aback to discover that she was going to New York for the weekend for “a bit of shopping”. Not any more.

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***“The poor literally cannot afford to wash.”***

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In the UK, a possible marker for parental abuse in the form of neglect is soiled clothing and evidence of poor personal hygiene. The picture is more complicated in Bermuda. Each resident is expected to supply 80% of their own water needs from rain water captured by specialized step-shaped roofs (see picture). The rich can dig wells on their land to supplement this in order to water their lush and beautiful gardens. Additional water can be delivered by little tanker lorries but it is expensive. If you have a small property or no property you will struggle to collect sufficient water.

This exaggerates the inequalities. The poor literally cannot afford to wash. At the CAS clinic we ensured that some of the patients got a wash when they visited for ADHD medication review, to reduce their stigma and chances of being bullied.

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***“...a bit of humour ... worked...”***

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Despite the differences there are considerable similarities to UK work. Most of my observations seem trite and obvious but children do better when their parents are able to respond to their needs, teenagers like to be involved in decision-making about their care and everyone responds to respect, warmth and interest in their predicament. Even when I struggled with Bermudian “back town” vernacular and accent, I discovered that a bit of humour and a polite request for repetition worked as well for me in Bermuda as it did in the Black Country, UK.



*Step Shaped Roofs.*

# News from the Dental School

Damien Walmsley ( D 1987 Manchester) School of Dentistry

## It is finally happening!

**Y**es it is true! They are building a new Dental School and Hospital. It is so exciting to make this statement after several years of writing for Aesculapius and every issue I have been promising the reader that it was going to happen with no real certainty behind the statement. This time it is for real and we have pictures to prove that it is indeed taking

place. The building has commenced and there was a Turf Cutting ceremony where representatives of the School and Hospital were present. We expect to move in to the new building on the Pebble Mill site around August 2015 and we are planning how to organise our official transfer so that it does not cause too much disruption to students, patients and our research.

*New dental school and hospital.*



## Welcoming Freshers

Do you remember what your first week was like at the University of Birmingham? Our new students got their first introduction to the clinical skills lab with Mr Upen Patel, lecturer in Prosthetics, with older students showing them the phantom heads – giving BDS1 their first opportunity to play dentist.

*Freshers.*



## European Activities

The SMILE Project 2012 part of a European Dental Students Association (EDSA) prevention program aims to promote oral hygiene to non-dental students throughout various European Dental schools. A stall was set up in The University of Birmingham Centre and students were asked to fill out a questionnaire related to their oral hygiene habits. After completing this, they were given a demonstration by Birmingham dental students on how to brush their teeth and oral health. Every student who took part was given 2 free toothpaste samples and oral hygiene advice leaflets. The project was a complete success with more than 50 dental students volunteering from 1st to 5th BDS and we reached over 1,000 University students! The volunteers were extremely enthusiastic and encouraging, promoting oral hygiene to its maximum! Thank you to Negar Mirzai (Final Year), EDSA, P&G and University of Birmingham for helping run this Project.

## Online Masters

The Distance Masters in Advanced General Dental Practice was launched on schedule on Wednesday, 27 February and to celebrate this auspicious event, Professors Trevor Burke and Giles Perryer together invited all members of staff for a celebration of the launch in the Osborne Room. Professor Burke who leads the successful part-time campus-based MSc Advanced General Dental Practice course for 11 years teamed up with Professor Perryer to create a distance learning option allowing dentists anywhere to gain a higher degree without interrupting their practice.

Professor Burke took the opportunity of thanking everyone for his or her help and contribution to the course and looked forward to its success. Further details of the course may be found on the University of Birmingham Web Pages or contact Lyn Malthouse l.malthouse@bham.ac.uk

### *Distance Masters Course.*



*BDH has got talent, judges and the winners.*

## Dental School has talent

The Annual Birmingham Dental School has talent night showcased the amazing abilities of our students including singing, beatboxing and breakdancing. There was a rather intense Eatathon as well. The compere was Professor Iain Chapple and not only did he introduce the students but his two daughters, Natasha and Jessica also gave heart-rendering renditions from Musicals. The video interludes were fun including dancing in the canteen (featuring a stoic Neville Hall!) and some very interesting pole dancing. The judges were Mr MacKenzie, Prof Landini, Prof Walmsley, Prof White, Mrs Stanley and Prof Perryer all of whom provided some amusing comments throughout the concert. Mr Upen Patel was even able to provide a text voting procedure. The eventual winner was Alessandro, 2nd Year Dental Student, for his Beatboxing.



## Cheese and Wine Quiz Night

The Annual Cheese and Wine Quiz Night goes from strength to strength. This year with the advent of a roaming microphone for quizmaster Prof Walmsley, the organisers were able to get more students per square metre into the canteen. Tickets for the event sold out faster than a Rolling Stones concert with the lion's share going to the Final Year who had already taken their final examination paper that morning. The questions were very difficult and included a challenging Dental Knowledge round. Professor Lumley was called into adjudicate on the Weine classification of root canals and there was some banter with final years and SHOs about odontogenic keratocysts. The tiebreaker for the top three teams was won by Quizzle Kicks (I think the correct term). Thanks must go to the organising team led by Sarah Franks and included Patrick Stewart, Maryan Ezzeldin and Harpreet Kaur.

*The Wine and cheese Quiz.*

## Reunions of 30 and 50 years

As many readers of Aesculapius will know the Sir Arthur Thomson Charitable Trust makes a provision for an annual dinner to take place of those graduates that qualified 30 years ago. This proves to be rather good fun as some of the graduates have not seen each other since they qualified. Professor Deborah White was on hand to take photographs of the event and there was much reminiscing and talk about past and present events in their careers and life. Special thanks must go to Carinna Chilton in Dental School Office who organised the event.



*Above: 30 year reunion.*



Peter Neal organised a 50-year reunion of his year with a special afternoon at the School of Dentistry. The afternoon started with a tour of the building and lectures and then a session in the 8th Floor Clinical Skills Laboratory led by the dental instructors, Glyn Thomas and Martyn Baylis. Glynn found the year's old Materials issue book which had records for every time students signed to have gold for a dental restoration. He even found some names in the ledger and for fun demanded financial outstanding payment for lost ounces! Glynn and Martin also put together some old equipment, porcelain and dentures etc., for a real trip down memory lane.

*Left: 50 year reunion.*

## Degree Day

It was deckchairs on the lawns around Chancellor's Court and a special order of sun all day revealed the campus in its full glory. Many people took the opportunity to enjoy the sun before it was time to for our graduands from the School of Dentistry to make their way to the Great Hall. The staff looked resplendent in their robes and there was the personal touch as Professor Lumley announced the names of the graduands before they shook hands with the Chancellor Sir Dominic Cadbury. The honorary graduand was Kay Alexander from BBC West Midlands who delivered an inspiring speech following the conferment of her honorary degree.

After the ceremony, the campus became a photographer's paradise with many happy smiley faces around wanting to



share their delight on receiving their degree. Someone had made sure that the sun was still shining for everyone.

In the afternoon people gathered for Prize giving at the Dental School. Our guest of honour was the Chief Dental Officer, Barry Cockcroft. There was loud applause as the prize winners were announced to staff, parents and friends in the audience. Barry Cockcroft then gave the address and provided memories of his time as a student at Birmingham. After the ceremony it was "fizz and cup cakes" in the canteen. Everyone left very happy and content in the knowledge that the celebrations were still not over as we look forward to the Graduation Ball.

*Left: Degree Day.*

*Above: Prize giving.*

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## Donald Spence retires

Staff, students past and present gathered together with many other colleagues and friends at Horton Grange on the University Campus to pay tribute to Donald Spence. Professor Philip Lumley, Head of the School of Dentistry gave the address and outlined Donald's long and illustrious career at the School. Donald joined back in the sixties after a short time working for British Rail. He started out as an instructor technician in Prosthetics followed by a spell in Orthodontics. It was the academic work that caught Donald's interest, gaining an MSc by research followed by being appointed the Dental School Admissions Officer. His capacity for work led to him taking on many other jobs including Welfare Tutor to the Student body and assisting with the modularisation of the undergraduate dental course. Aesculapius readers will have many memories of Donald and we wish him a happy retirement.



## Gerry Flaum

Gerry Flaum, associate specialist in Oral Surgery is retiring. Gerry qualified from Sheffield Dental School in 1972 and then worked in practice in the Birmingham area. It was in 1979 that he took up a part time position in the Dental Hospital. He started at the same time as another former colleague, Richard Caddick. He is an enthusiastic teacher and was President of BUDSS Dental student society for the year 1986/87. He has not only been a valued member of the team in Oral Surgery but has run many Sedation dental postgraduate courses over the years. We wish Gerry well in his retirement.

*Left: Donald Spence.*

*Below: Gerry Flaum.*

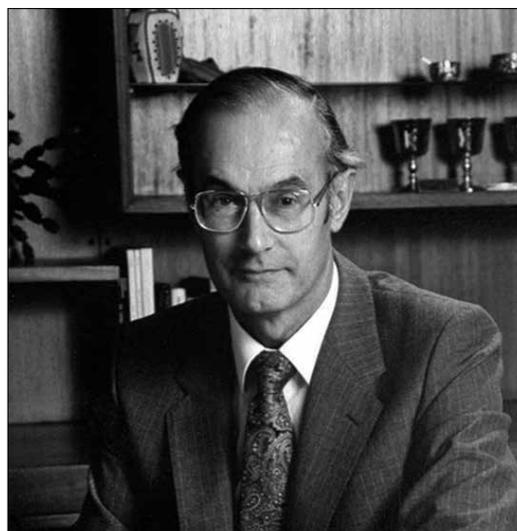


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## David Shovelton

It is with sadness that the School of Dentistry were notified about the death of Professor David Shovelton, former Director of the School of Dentistry. Professor Shovelton was a highly respected clinician, academic teacher and researcher. He held several high profile positions on the national stage including being a member of the General Dental Council and the Royal College of Surgeons. His research work on the repair of the human dental pulp following cavity preparation published in the 1960s and 70s was pioneering and was responsible for a new understanding of the response of odontoblasts to caries and mechanical insults. Professor Shovelton was also part of the Department of Health team that published the Schanschieff report into unnecessary treatment in Dentistry.

*David Shovelton.*



## Don Glenwright

Don was a very long serving, loyal and hard working senior member of staff who retired in 1997 to spend time with his family and garden. Don was former head of Periodontology and Chair (Assistant Director) of the Curriculum Development Committee, responsible for the new curriculum that still runs today. Nationally Don was President of the British Society of Periodontology from 1980 to 81. He was a gentleman, incredibly kind and popular and very innovative, the special study modules being one of his many contributions to the school. Our thoughts go to his wife Gill, daughter Katie and son Robert, and his very new granddaughter Jess.

*Don Glenwright.*



## Remember Gift Aid!

*giftaid it*

The Gift Aid scheme is already a big help to us and we benefit by about £1,500 a year in reclaimed income tax; over £5.00 for each signature.

**However**, less than 50% of eligible members have signed up so far. The only criterion for signing is being a UK taxpayer. Signing up costs nothing and indeed higher rate tax payers can claim a small rebate. Also, there is no future commitment except notifying the treasurer if you cease to be a UK tax payer.

I do urge the many members who have not done so to take this simple step to help your Society.

If you cannot remember whether you have signed up already, please sign up again. There is no penalty.

**John Jackson, Treasurer, Sands Cox Society**



# The Sands Cox Society 32nd Annual Meeting

Damien Walmsley (D 1987 Manchester)

**P**rofessor Robert Stockley, President 2012-13 and Chair welcomed members to the 32nd Annual General Meeting which was held at the Birmingham Medical Institute. At the meeting Dr David Spooner, elected President and Chair for 2013-14 then chaired the main meeting.

There was the opportunity to hear presentations from Students who had received bursaries from the Society for their Elective projects. The student presenters had been the recipients of the following awards: Medical Student bursaries Mr Michael Cox, Miss Lili Dawson, Mr Joseph Higginbotham-Jones and Mr Graham McIlroy; The John Rippin Dental Elective Bursary – Miss Krishna Patel; The Sands Cox John Rippin Best Elective Report – Miss Krishna Patel and the Stuart Green Memorial Bursary – Miss Emma Godfrey.

The Sands Cox lecture was given by Professor Sir Keith Porter who is Professor of Clinical Traumatology, Clinical Service Lead for Military and Civilian Trauma Services at the Queen Elizabeth Hospital. The title of his lecture was “From Bastion to Birmingham – lessons learnt and future aspirations” which highlighted the amazing work of all the clinical staff who cared for the wounded soldiers from their initial care at the front line to their rehabilitation back into civilian life.

The final act of the day was to award the prize for the best student presentation and this went to Miss Emma Godfrey. The Society would like to thank Sharon Charles for her excellent organisation of the day and to all the speakers who gave excellent presentations.



*Top: the bursary winners.*

*Centre: Rob Stockley, Martin Kendall, David Spooner, Sir Keith Porter.*

*Bottom: Dr Spooner addresses the presenters.*

# To explore and compare paediatric dental health intervention in a rural (Hoi An) and urban part of Da Nang, Vietnam

Krishna Patel, Final Year Dental Student

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## Preamble

This elective was supported by the Sands Cox Society and this article provides an account of my investigation into paediatric care in a rural and urban part of Vietnam. I wished to explore a country that had a strong sense of culture and diversity. This elective helped me to understand how a developing country is changing with the increase of care focused in the municipal areas and leaving the rural areas relatively unchanged.

## Background

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*“...unintended growth of inequality between the rich and poor.”*

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Vietnam is a developing country in Southeast Asia, with a population of 88.78 million people. The aftermath of the Vietnam War resulted in famine and a collapse in the economy. The Doi Moi reformation brought about great economic reforms, where privatisation of the economy reduced poverty and stimulated growth in all sectors. However, the increase in standard of living also stimulated negative repercussions such as unintended growth of inequality between the rich and poor.

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*“Over 70% of the population live in rural areas...”*

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Over 70% of the population lives in rural areas with poor access to dental services and village government clinics are often understaffed and poorly equipped. This strain on the health services has led to the establishment of many unregistered private health care services. There is no quality assurance with the private health care services where many provide services poorer than public services. Current practice in both systems falls below the national standard. In spite of this, the desperation to access health care is therefore a greater concern rather than the quality of care provision.

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*“...limited access to dental care in a vast population.”*

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The course of oral disease is generally unaltered by professional dental care. The first National Oral Health Survey in 1989 reported a low oral hygiene status and a moderate level of caries. On average the ratio of dentists to the general population in this region is 1:43,000, ranging



*Dr Pankaj Taneja anesthetising  
a child at the dental outreach in  
Hoi An.*

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from 1:178,500 in rural areas to 1:13,400 in urban areas. One hundred and fifty six rural districts (from a total of 363 rural districts) had no dentists at all. This shows the extent of limited access to dental care in a vast population.

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***“...dental decay in Vietnam is growing rapidly.”***

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A National Oral Health Survey took place in 2001, and showed that the problem of dental decay in Vietnam is growing rapidly. In adults the average number of decayed teeth is high as eight and more than 85% of 6-8 year olds are affected by tooth decay. This could be due to the lack of education and practice of good oral health. Without dental intervention, decayed teeth have poor prognosis and a higher incidence of tooth loss.

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***“...free dental services to underprivileged children in Vietnam.”***

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Since 1996, the charity “East Meets West” has been organizing and implementing free dental services to underprivileged children in Vietnam. The city clinic in Da Nang treats children with special needs and complex cases that may need surgery. The Charity also organises

six dental outreaches per year to provide treatment to children living in rural parts of Vietnam, where many of the children treated have never visited a dentist before. Oral Hygiene Instructions are provided through the school visits where children are taught the importance of looking after their oral health.

**Aim and objectives**

***Aim:***

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***“To explore the impact of paediatric dental health intervention...”***

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To explore the impact of paediatric dental health intervention in the rural area (Hoi An) and urban city clinic part of Da Nang, Vietnam.

***Objectives:***

1. To visit the Da Nang City Centre Dental Clinic and attend the dental outreach in Hoi An.
2. To understand how dental care is provided in a rural setting.
3. To determine and describe the most common treatments required and provided.

4. To compare services in rural and urban parts of Da Nang.
5. To analyse the changes in dental health intervention in the last 15 years through treatments carried out.
6. To aid in the provision and education of oral health care.

### Methodology

The investigation was carried out through observing how the dental outreach was run, and the differences between the dental services in a clinic and urban dental services. Structured interviews and discussions with the workers (dentists, nurses and volunteers) were carried out to gain an insight into how paediatric dental intervention has changed and the present oral health condition. Primary and secondary data collected over 15 years by the East Meets West charity was used to analyse changes and trends in treatment provision.

### Results and discussion

#### Last 15 Years

*“...paediatric dental intervention has expanded...”*

Over the last 15 years paediatric dental intervention has expanded through the range of treatments provided under each specialty (Figure 1). Over 50% of the dental services provided are prevention treatment, which largely supersedes restorative and emergency care. Preventive treatment includes scale and polish, fluoride application

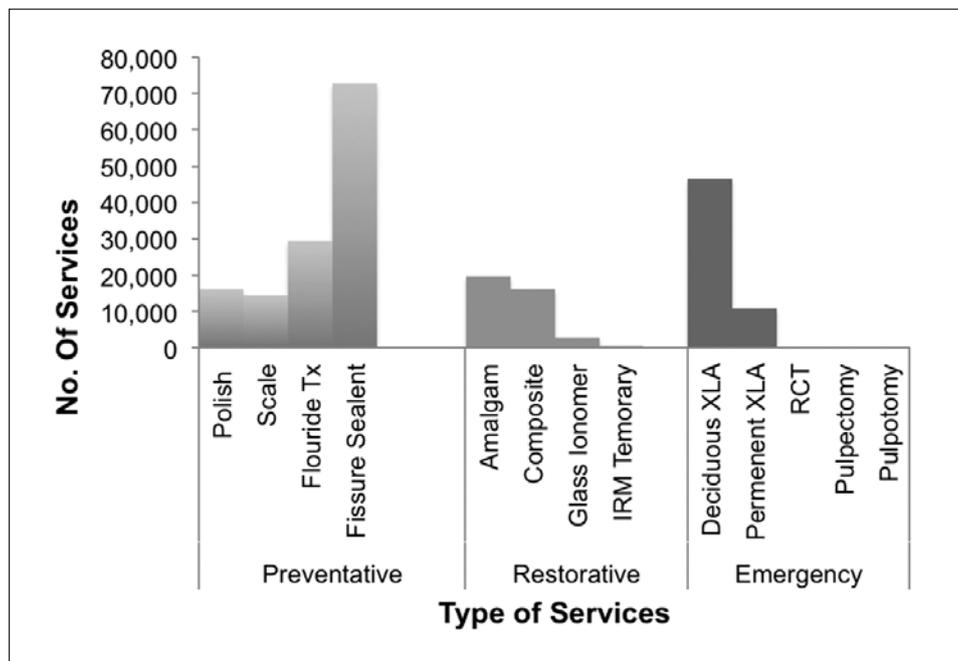


Figure 1: The dental services provided by the EMW foundation from 1996-2011.

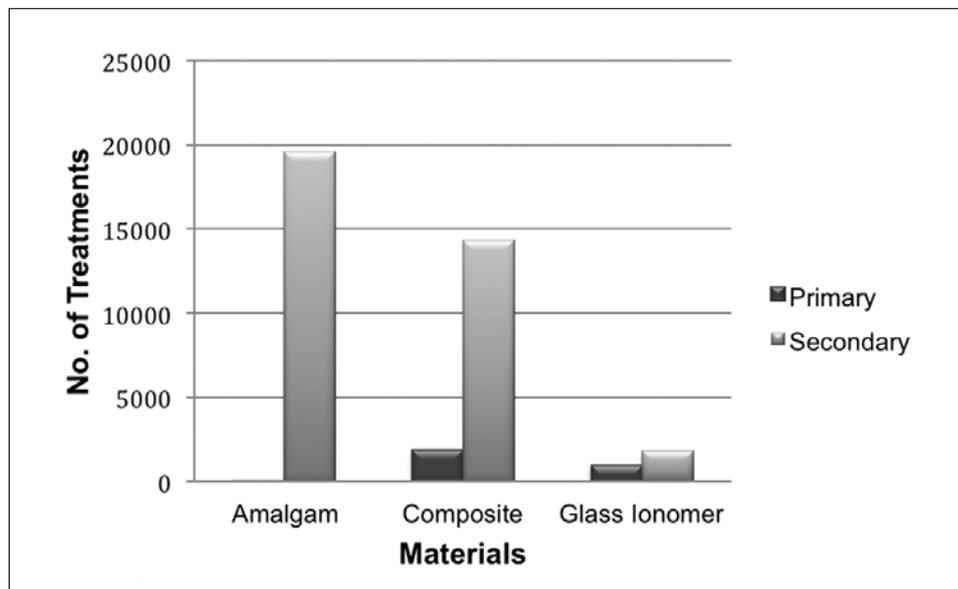


Figure 2: The distribution of restorative treatment provided on deciduous and permanent dentition from 1996-2011.

to fissure sealant. Collectively, the placement of sealants is the highest treatment provided which differs from the Dental Outreach in Hoi An. Along with extractions, the emergency treatment provided in clinic includes Root Canal Treatment (RCT), Pulpectomy, Pulpotomy, which were not

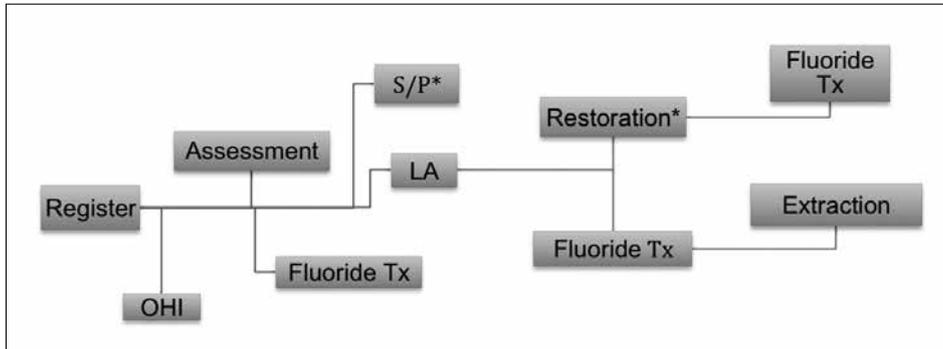


Figure 3: A pathway of patient who comes in for emergency care in Hoi An.

an option at the Dental Outreach. Although these are not highly performed in comparison with extractions, they are still an option.

***“...amalgam has been the most popular choice for treatment in secondary teeth.”***

Over the past 15 years, amalgam, n=19.600 (55%) has been the most popular choice of material for treatment in secondary teeth in contrast to composite n=1,850 (65%) for primary teeth (figure 2). Amalgam is a preferred material as it is cheap, more durable and less technique sensitive in comparison to composite and glass ionomer cements.

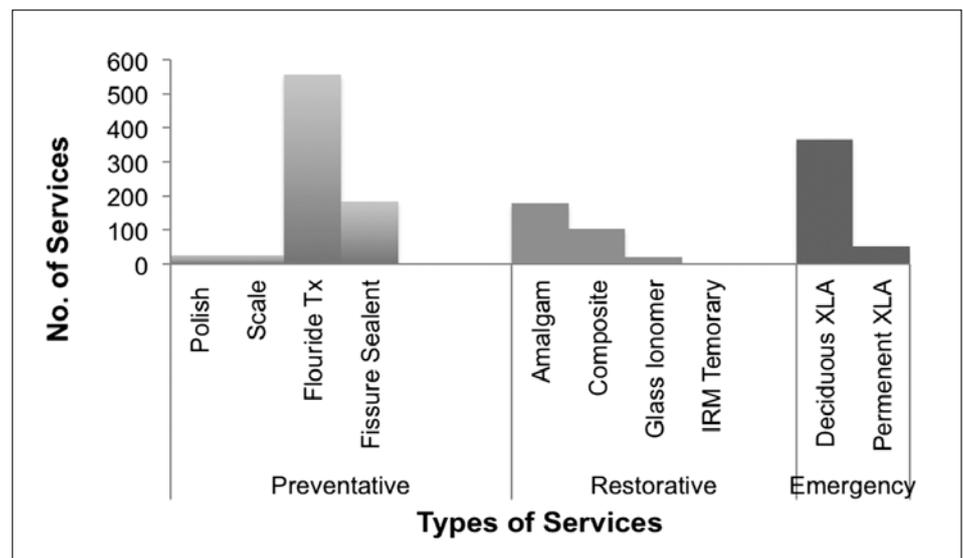
The flow chart in Figure 3 outlines a patient pathway from registration to treatment provided. Once registered all patients required an Assessment, Oral Hygiene Instructions (OHI) and Fluoride application. If a child needed all the treatments, then a scale and polish was preformed first, followed by the child being directed to the appropriate chair/bay for fluoride application, restorations and extractions under local anaesthetic (LA) respectively.

***“...five day dental outreach programme...”***

From the 569 children that were examined during the five day dental outreach programme (Figure 4), the observational data collected from charting and treatment records showed that preventative treatment was the highest dental service provided n=793 (51%) followed by extractions n=419 (27%). The breakdown of procedures shows

that fluoride application made up the greater proportion of preventative treatment. This suggested that a more conservative approach was being used. Amalgam n=178 (59%) was the most used restoration and deciduous teeth n=366 (88%) were the most extracted dentition. The need for treatment did not always correlate with treatment provided as only teeth that were causing pain and had the poorest prognosis were treated first (as deemed by the assessor). This was further supported by the structured interviews and discussions. The most prevalent disease in each child was caries caused by a cariogenic diet and poor knowledge of oral hygiene. Oral Health Status cannot be solely determined by the treatments carried out as it was limited to treating the worst tooth. However, the graph does show what services were available in a rural area and gives a sense of the oral health status and what treatments were available.

Figure 4: The distribution of services provided at the Dental Outreach in Hoi An.



Comparison		
	Clinic	Outreach
Treatment	All	Emergency
Equipment	Advanced	Basic
Age	3 to 16	3 to 16
Follow Up	Annual	None

Figure 5: Comparison between the Urban and Rural Services.

The main difference between the rural and urban clinic (Figure 5), was that the city clinic would follow up treatment annually and had more advanced equipment (laser for surgical treatment) whereas the outreach only provided of emergency treatment (fillings, extractions or prevention). Complex treatments from the outreach were referred to the clinic. The clinic treated more special care patients relative to the outreach service.

**Limitations**

The investigation was faced with limitations. Firstly, Vietnam has a vast population of 88.78 million; therefore the collected data represents only a small portion of the population that

*“...only a small portion of the population was seen by a dentist.”*

was seen by a dentist. East Meets West was a very well facilitated charity with respect to material and instruments. This did not apply to all the private practices and charities that were set up after the Doi Moi reformation. The outreach in the rural areas treated only a selection of the worst teeth at the time of assessment, which was down to the discretion of the one assessor. Treatment plans were not always consistent; one clinician’s treatment plan could be modified by another clinician. The dental outreach was limited in capacity to treat only simple cases.

**Conclusion**

Paediatric dental intervention in Vietnam has gone through a large change over the last 15 years with the use of a variety of materials and approach to treatment.

*“Caries is the most common problem...”*

Caries is the most common problem occurring in the dentition of children in rural and urban areas. This issue



*Gross caries in child due to diet consisting of ‘mainly coke’.*

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is being tackled by the introduction of a strong Oral Health Education message linked with an increase in Preventative Dentistry.

Overall, the study suggests that paediatric dental intervention is moving from a invasive to a more conservative approach to deliver dental health to the vast population.

## What I learnt

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***“... challenging especially to find the extent of neglect and lack of awareness towards oral health.”***

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I personally found the visit challenging especially to find the extent of neglect and lack of awareness towards oral health. In the UK most extractions of dentition are provided under general anaesthesia, which was not an option in Vietnam. Despite the complexity or resentment of the child, treatment was carried out while the child was fully conscious. It was

troubling to see the discomfort the children faced, especially when being restrained for treatment. From all the limitations faced, I felt the language barrier encouraged me to develop strong management and communication skills in providing oral hygiene instructions to a range of ages. I feel my experiences have made me realise why preventing a disease is far more significant than curing it.

## Acknowledgements

I wish to express my deepest thanks to:

Sands Cox Society and The family of John Rippin for their generous financial support in funding my trip to Vietnam.

My clinical supervisor Dr P. Taneja for his invaluable support and enthusiasm in preparation and through carrying out this investigation.

Prof A.D. Walmsley and Dr K. Hill for giving me the opportunity to carry put an elective abroad and providing consistent support and guidance.

The East Meets West Charity for allowing me to carry out my investigation and making it a memorable experience.



*Oral hygiene Instructions being given to children at the outreach.*

# A Short History of David Cox

John Davis (D 1955, M 1964)

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*“Leader of the Birmingham School of Landscape Artists...”*

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**T**hree Blue Plaques commemorate the subject of this essay; one is at Greenfield Road in Harborne, and two more are in London. Here was a man who loved Nature, and became famous for his sketches, water-colours and oil paintings. He became the Leader of the Birmingham School of Landscape Artists, founded in the 1760s by Daniel Bond. Cox was certainly an early precursor of impressionism.

David Cox was born on the 29th April, 1783 in the cottage next to his father’s forge, quite close to St. Martin’s church in semi-rural Deritend. Father Joseph was a ‘White Smith’ – that is, he worked in all metals except iron, but the war with France changed all that, and he grasped the opportunity to make iron bayonets and horse-shoes.

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*“...‘too delicate’ for the heavy work demanded in the forge.”*

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In the normal course of events David would have followed his father’s trade, but David’s mother considered him ‘too delicate’ for the heavy work demanded in the forge. So at 15 years of age he was apprenticed to Fieldler, a Birmingham locket and brooch painter. With him he learned the elements of miniature painting, but his training didn’t last long, because poor Mr Fieldler committed suicide. Released from his apprenticeship, he was taken on as assistant to



De Mario, the scene painter at Birmingham’s Theatre Royal. His work was mainly grinding pigments, but he also learned the elements of design, and painting. However, because his work was not acknowledged in public advertisements, David fell out with the theatre manager, and was ‘given his cards’, and sacked.

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*“...his scene painting skills were soon recognised...”*

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For a time he worked as a scene painter for Birmingham and Leicester Theatres – strangely under the same man who had sacked him from the ‘Royal’ – but in 1803, and now 20 yrs old, he moved to London. In the capital his scene painting skills were soon recognised, and for a short time he was employed at Astley’s Royal Amphitheatre, the home of the circus. More significantly, he took lessons

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*Portrait of David Cox by William Radclyffe, 1830.  
Reproduced by kind permission of the National Portrait Gallery.*

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from the celebrated water-colourist John Varley, whose pupils included Copley Fielding, John Linnell, and William Turner.

A precarious existence was eked out giving drawing lessons in local schools, but the pay was derisory. So he 'moved up-market', to become a 'Drawing Master' for the daughters of wealthy families – after all, sketching was one of the refined 'accomplishments' expected of upper-class young ladies, together with needlework, a little piano playing and dancing; all essential for girls angling for rich husbands. Cox's own sketches were sold at a shop in Westminster, for pitiful sums of only a few shillings each. Today, those same sketches sell for thousands.

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***"...he promptly paid Cox a guinea –  
an enormous sum in Cox's eyes."***

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In 1808 he moved to Dulwich Common in south London, a favourite location for many artists including Camille Pissarro. Cox boarded with a Mrs Ragg in one of the 'Pond Cottages', and in 1808 he married Mrs Ragg's daughter Mary; and a year later David Cox junior was born. One day a well-dressed military gentleman on horseback called at the cottage, enquiring if Cox would give him instruction in drawing. He knew Cox's sketches well, having purchased several from the Westminster shop. The first lesson started straightaway, for which he promptly paid Cox a guinea – an enormous sum in Cox's eyes.

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***"...Cox's career now took wings."***

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This happy visit marked a turning point, and Cox's career now took wings! His sketches were sold for higher prices, and he became much in demand for lessons.

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*The house to which Cox retired in Greenfield Road, Harborne, Birmingham. Photograph by Dr John Davis.*



A number of pupils accompanied him on painting expeditions to various parts of Great Britain, but especially to Wales. He was a real child of Nature and the country-side, never happier than when making sketches and water-colours – particularly at Betws-y-Coed. He was ‘taken up’ by the aristocracy to sketch and paint their ancestral mansions, usually with a few well-placed figures in period clothes to give the right atmosphere.

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***“...many of his pictures have birds flying high, usually being blown about in a blustery wind.”***

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In 1813 he removed to Hereford, almost certainly attracted by the scenery, but by 1827 he was back in London. He always used a high quality hand-made rag paper, later called ‘Cox’s paper’. However, a major snag was that even with the greatest care in making, there were always a few dark specks to mar the sheets.

One day, while painting a water-colour in the open air, a lady came up to admire his work, and asked: ‘Mr Cox, what can you do about those dark specks in the sky?’ ‘Why ma’am he replied: ‘I put wings on them – and they fly away!’ So many of his pictures have birds flying high, usually being blown about in a blustery wind.

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***“...he would say to his pupil:  
Paint it thick, and paint it quick.”***

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He was an amiable, cheerful and good-natured man, and it’s not surprising that he was loved and admired by a large circle of artistic friends and pupils. When he was teaching oil painting in later years, he would say to his pupil: ‘Paint it thick, and paint it quick.’

He exhibited at the Royal Academy regularly from 1805, and in 1810 became President of the Associated Artists in Water-colour. He exhibited regularly at the Birmingham Society of Artists in New St from 1829.



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***“...retired to Harborne Heath...”***

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Many honours followed, and Cox, now 61 yrs of age, retired to Harborne Heath, buying the substantial property known as ‘Greenfield House’. It’s still there, but now ‘gentrified’, and converted into apartments for contemporary taste. It has been apartments for as long as I can remember, and from one of the Childrens’ Hospital staff who had lived there, I learned that a room at the top of the house had ‘a very large window in the roof’. Almost certainly this was the north-facing skylight for the studio where Cox fulfill his lifelong ambition – to paint

in oils. He was a great admirer of the Bristol-born painter W.J. Mueller. So at the age of 56, this distinguished artist took lessons from Mueller, his junior by nearly thirty years – a measure of Cox’s natural humility. His retirement was the start of a meteoric second career. He chose subjects close to Greenfield House; St. Bartholomew’s – Edgbaston ‘Old Church’, and the fields round Harborne where ‘The Sky-Lark’, and ‘Going to the Hay Field’ were almost certainly painted. Some years ago a tenant told me that when the garden was dug, old paint-bushes and pigment containers occasionally turned up! In the garden was Cox’s special weeping Willow tree; he grew it from a slip taken from the tree at Les Invalides in Paris where Napolion is buried. Sadly, that tree is no longer there.

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***“He still travelled further afield, specially to his beloved Wales...”***

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He still travelled further afield, specially to his beloved Wales, and there he painted two great masterpieces: ‘The Welsh Funeral’, and ‘Rhyl sands’ – you can see them both in the Round Room of Birmingham Art Gallery.

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***“...one of Nature’s Gentlemen.”***

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A very distinguished landscape artist, his skies were considered by many to be superior to Gainsborough's. He really was 'one of Nature's Gentlemen'. Some years ago – the Barber Institute of Fine Arts showed pictures from private midland collectors titled 'Behind Closed Doors'. One of the finest was 'The Road to the Mill', a very fine oil.

In 1859 while sitting in his study at Greenfield House he became ill, and within a short time had died. A crowd of Harborne friends followed his coffin across the fields to St. Peter's churchyard, where he lies buried beside his wife, Mary.

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***"He was the last of the 19th C group  
of landscape artists..."***

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He was the last of the 19th C group of landscape artists which included Girton, Prout, Crome and J.M.W. Turner. Suitable memorials to the great man were considered, but his lasting memorial is the glorious collection of sketches, water-colours and oil paintings that he left for us to enjoy.



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*The gravestone of David Cox and his wife Mary, in St. Peter's churchyard, Harborne, Birmingham. Photograph by Dr John Davis.*

## Reunion of Graduates of 1963

A 50 year re-union is a very special occasion. Forty seven of the year of 1963, and many of their partners, celebrated this in style in September.

We remembered in a silent moment those who had passed on: David Baum, Carole Bishop, Griff Gwilliam, David Josephs, Jill Lovesey, Brian Nelson, Jim Phillips, Manilal Raichura, John Robson and Graham Wilcox.

We gathered at the Crowne Plaza at the end of Broad Street and after lunch on Friday had a talk and a tour of the city, expertly led by Mr Chris Gait, a retired Orthodontist and an official Birmingham guide. We saw the many changes since the 60s. Underpasses, pedestrianisation, large concrete buildings, a new Bull Ring and so on.

Ken Peterson, Mike Ameli and Prakash Shah had all been distinguished surgeons in Canada. Simon and Judith Powis had successful and

long careers in Surgery and Practice in Northampton. Dave Roberts had continued as an inveterate climber, Selwyn Goodacre still an aficionado of Lewis Carroll, Howard Lee and John Burgess performing on local stages in operas and plays, Sally Kerr becoming an expert plants woman, Dale Green taking Sheffield and Leicester by storm with his great support of all things sporting, Dick Herbert probably still driving a fast sports car, John Hawkins sailing, book binding and singing. Jennifer Burton, who was always a quiet and uncomplaining student, remained exactly the same and was an example to all by her perseverance in spite of her long-term illness. She even offered to participate in a wheelchair Grand Prix at our subsequent dinner! Rodney Cartwright appears to have turned into a plumber but authored a Golden Booklet of what we had all been up to.

Saturday and was marked as a special day visiting our old haunts. We climbed the steps of the Medical School which seemed a little higher now, and a surprising entrance into the medical school which required negotiating a turnstile..... back to Villa Park!

Not only were there many changes in the building but as Professor Mike Gammage (Vice Dean for Medical Education) explained this also applied to the curriculum. The annual intake of students has risen to 400. There is now emphasis on an early introduction to clinical studies but many of us wondered if 18 year olds were really ready to participate with patients at that stage of their studies.

Then to the new QE, what a magnificent entrance area, there seemed to be no rush, no disorder and a pleasant open space for patients to be received. The vastness of the whole enterprise was apparent when we learned of the great numbers of Intensive Care beds and facilities in Accident and Emergency. We learnt of the expert treatment provided for injured Service men and women coming back from Afghanistan or other battle areas.

The excellent adjacent facility of Fisher House, provided for patient and family residence of those injured during their treatment in the QE. We were able to support this worthy enterprise with donations of over £300.

### Reunion of Graduates of 1963



John Thornton, Ron Parker & Dave Roberts.



Majid Quershi, Prakash Shah, Surjeet Sira.

## Reunion of Graduates of 1963

Right: QE Lecture Theatre.

Below: Group picture.



John Burgess and  
Dick Herbert.



Anne Pedrazzini and Mike Ameli.



Sally Kerr and Jennifer Barnsley.

Back to the hotel, a quick snack, drink and rest before our celebration dinner. Attired in formal dress, memories were exchanged in what was indeed a most happy occasion. Wlod played his accordion but the songs were a little less risqué than we performed when we were students.

A magnificent weekend we hope to repeat in Montreal or Toronto in 2018.

**Attendees:**

Mike Ameli  
Hilary Andrews (Goodall)  
Barbara Armstrong  
John Ball  
Clem Brown  
John Burgess  
John Burman

Jennifer Burton  
Rodney Cartwright  
Sim Choong  
Maurice Coope  
Clive Dash  
Maureen Davies (Dalton)  
Pete Exon  
Roger Fairweather  
Terry Gibson  
Selwyn Goodacre  
Dale Green  
Keith Harding  
John Hawkins  
Dick Herbert  
Eric Hewinson  
Wlod Holweger  
Sally James (Kerr)  
Hugh John  
Lynn Jones  
Dave Lees

Charles Mackie  
Jennifer Milne (Barnsley)  
Yashvant Panchmatia  
Ron Parker  
Shashi Patel  
Ken Peterson  
Judith Powis (Thompson)  
Simon Powis  
Majid Qureshi  
Anne Rawlins(Pedrazzini)  
Dave Roberts  
Prakash Shah  
Bill Shaw  
Peter Sheldon  
Sujeet Sira  
Carol Starkie  
John Thomlinson  
John Thornton  
Halina Twardzicki  
Margaret Wright (Osborne)

## PLANNING A REUNION?

If you are planning a reunion of your year and wish to hold part of it in the Medical School, you are asked in the first instance to contact the Alumni Relations Manager who would be pleased to discuss with you how the Medical School might be able to help to make your visit memorable.

We can offer, for example, some hospitality, arrange for guided tours of the new facilities in the School and for The Dean or another senior officer to talk to your group about current developments and plans.

**Michelle Morgan, College Alumni Relations Manager (Medical and Dental Sciences),**

**Room WG44, Medical School, University of Birmingham,**

**Edgbaston, Birmingham, B15 2TT**

Telephone: **0121 414 3488** (Monday, Tuesday and Thursday)

**0121 414 8100** (Friday)

Email: **[m.morgan@bham.ac.uk](mailto:m.morgan@bham.ac.uk)**

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# THE SANDS COX SOCIETY

## Officers 2013-2014

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**All doctors and dentists** who have studied as undergraduates at the University of Birmingham, wherever they qualified, are entitled to join the Birmingham Medical and Dental Graduates Society. The Society is named the Sands Cox Society to commemorate Sands Cox who effectively founded the Birmingham Medical School when he started the first organised classes in human anatomy in this city in 1825.

**Members of staff** of the Medical and Dental Schools, and others who have substantial links with Birmingham medicine or dentistry, may become members by invitation either on their own initiative or that of the Society's Executive Committee.

The Society was founded in 1981 with the primary aim of keeping Birmingham medical and dental graduates in touch with each other and with the Schools, by encouraging communication across the barriers that develop through geographical separation, specialisation and ageing, principally through the publication of an annual journal, *Aesculapius*.

*Aesculapius* is published in the summer and comprises 70 to 100 pages of articles, letters, reports on reunions and obituaries, all with illustrations where possible. Members and other former Birmingham undergraduates are encouraged to submit material for publication. Critical and creative writing is welcome.

The Society also has a charitable role. Annually, there are four Sands Cox Society travel bursaries of £500 each, to support electives for Medical Students plus one Dental, The John Rippin Elective Bursary of £800. Recipients are expected to contribute to *Aesculapius* and to present to the Society. There is a further Dental prize, The Sands Cox John Rippin Memorial Prize for best Elective Report of £200.

The **Annual General Meeting** of the Society is held in Birmingham in the autumn. The format of the meeting is evolving but currently includes guest lecturers and student presentations as well as a business meeting. The latter reviews the activities of the Society and its finances, and elects the officers.

The current **annual subscription** is £20 but as an introduction to the Society *Aesculapius* is sent free to students in the final two years of the medical and dental courses. An application form to join the Society is included in the journal. Additional forms are available from Dr John Jackson, Treasurer, Sands Cox Society, 29 Station Road, Blackwell, Bromsgrove, B60 1QB. email: [john@jacksonconsulting.eu](mailto:john@jacksonconsulting.eu) web: [www.sands-cox.org.uk](http://www.sands-cox.org.uk)

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