

MidTECH Matters

News from NHS Innovations West Midlands

Issue 11 | Autumn 2011

A message from the Chairman

MidTECH has continued to develop in terms of the scale, content and significance of the innovations we help to bring to fruition, improving healthcare, generating revenue to Trusts and attracting investment to the region. 2010/11 highlights include:

- Dealing with 116 new ideas revealed to us by client Trusts, maintaining last year's excellent level of local innovation
- Completion of 17 commercial exploitation agreements. This is slightly higher than last year, and includes 5 licence agreements with potential to generate significant royalty income to the NHS (one of last year's innovations is projected to generate £5m in income to the Trust in this and future years)
- Healthcare is a crucial growth area for the local economy, and the NHS is a respected brand worldwide. Healthcare businesses in the region have a good record of exploiting innovations from the local NHS, generating much-needed investment and jobs
- MidTECH received a Lord Stafford award that recognised our ability to commercialise ideas from the NHS and collaborate well with local industry and academia.



MidTECH has operated since 2004 with local ownership and control but central support. This reflects the fact that, while healthcare innovation generally works 'bottom-up' (from people in the clinical front-line finding practical solutions to real-life problems), the benefits of innovations to the NHS as a whole are generally greater than those to the individual clinician or Trust. In last year's annual report I drew attention to the challenges MidTECH would face as a result of the continuing fall-out from the credit crunch, which could be expected to lead to central support for MidTECH's operations being withdrawn more quickly than previously planned. This has indeed happened: both Department of Health and Department of Business Innovation & Skills ceased their support at the end of the financial year 2011/2. This signals the start of a process of radical change, but there are positive factors too:

- Although Government has decided that the NHS will in future procure services (including IP management) from 'any willing provider' rather than in-house, MidTECH has established a reputation for competence and value for money which will ensure that it is competitive in this market;
- With less money, innovation will become even more important as a means of delivering improved patient care – and the duty on NHS Trusts to protect, manage and exploit their IP is likely to remain;
- In addition to the healthcare and monetary value of the innovations themselves, picking up and developing the good ideas of frontline staff is an intensely direct, practical and effective way of fostering an innovative culture;
- Our relationship with industries in the West Midlands has the potential to grow and strengthen because of their need to develop new export markets.

The coming year will be a critical year of transition for MidTECH. Our member Trusts will need to place innovation management within a radically altered set of resources and priorities, and MidTECH itself will need both to respond their needs and to develop new markets and sources of income using our established skills and capabilities. While this will be challenging, we are confident that MidTECH, in partnership with our member NHS Trusts, can meet these challenges and build on past achievements.

Licence deals

MidTECH, on behalf of a member Trust the Dudley Group of Hospitals, has worked with Birmingham University through their technology transfer arm Alta Innovations, on a new therapeutic system. The system, a new and novel use of the AMIGO3 group of proteins, is another collaboration between the two institutions to share healthcare knowledge and expertise in innovative treatments. The Trust and the University filed for patent protection in this field and MidTECH have worked with Alta innovations to execute the appropriate licenses to ensure the Trust's interests are protected, that the IP is secured and that all commercial options are open. Late stage commercial discussions are underway.

The Heart of England NHS foundation Trust have recently been awarded funding to research, develop and evaluate technologies that will guide clinical decisions by the dynamic capture and analysis of chest wall motion as a result of breathing. Undoubtedly such work will generate valuable IP and MidTECH's role is to ensure such IP is secure and protected. HEFT will be collaborating with Warwick University on this work and MidTECH have put in the appropriate licence arrangements so the Trust own and control all IP generated. Securing IP prior to collaborating is vital and this is an ever-growing part of MidTECH's service to its membership.

WE ARE MOVING OFFICES!

MidTECH will be moving to new offices in the Birmingham Research Park, Edgbaston on Friday 14th October 2011. Our new address will be:

Birmingham Research Park, ICT Centre, Vincent Drive, Birmingham, B15 2SQ.

To celebrate our move, we will be holding an informal 'Open Evening', details of which will be sent out soon, so watch this space!

New software system diagnoses occupational asthma

At the 2010 final of the MidTech innovation awards, the OASYS system was a focus of some considerable interest. The software, developed by staff here at Heart of England NHS Foundation Trust (HEFT) and at other centres across the West Midlands, helps clinicians distinguish between occupational and environmental asthma. Though it didn't ultimately lift the gong, it has already been launched internationally and is available through the team's website at www.occupationalasthma.com

"The research that produced the system was very collaborative," explains lead programmer Cedd Burge. "From Charles Pantin at Keele University to Alastair Robertson at University Hospitals Birmingham and Sherwood Burge at Heartlands, we benefited from the input of a wide range of colleagues both nationally and internationally."

If a patient's asthma is occupational, exposure to the work environment should have an effect on their lung function. The system therefore interprets measurements of peak flow made both at home and at work by the patient, in order to diagnose the type of asthma

they are experiencing. The computer plotting and analysis separates asthma caused by work exposures from asthma unrelated to work.

The value of diagnosing occupational asthma is clear: a patient with asthma unrelated to work is worse off if advised to leave work, whereas a patient with occupational asthma has better outcomes if removed early from the cause.

Occupational asthma is the commonest form of occupational lung disease and is common in hospital staff amongst many others. It can end a skilled person's career at its halfway point, and its cost to the UK economy over the next ten

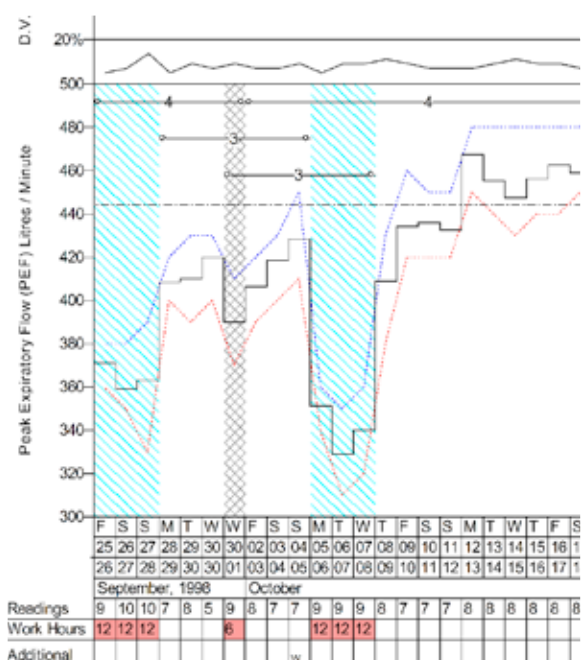
years has been estimated, by the Health and Safety executive, at £1.1 billion. OASYS allows the diagnosis of occupational asthma to be validated outside specialist centres.

Cedd Burge emphasises the system's broad applicability. "The system has already been used in a number of research papers, and we've been working with both the Health and Safety Executive here in the UK, and with the National Institute for Occupational Safety and Health in the USA. The complexity of the

scoring system OASYS uses has proved very robust and has stood up to a wide range of uses."

Professor Burge added "Since we have launched the internet version of OASYS it has been used all over the world from Korea, South Africa and Brazil including many users in Europe. It has no serious rivals"

The success of the OASYS system emphasises the potential for collaborative projects and the importance of continuing to invest in the development of new software packages and associated devices which can cut costs and make care more efficient. Not only that: MIDRU exists to find the through-line between clinical need and industrial application – and OASYS is a great example of how it should be done.



You can download the OASYS software for free from www.occupationalasthma.com

Saving young lives: detecting deterioration early & improving outcomes for sick children

(Heather Duncan, Mary Montgomery, Peter van Manen, Dominic Hardisty)

Birmingham Children's Hospital developed and implemented a Paediatric Early Warning System over the past 7 years which includes an early warning score on the observation chart. This system is improving clinical outcomes for children including reducing the number of children suffering cardiac arrest.

Life-threatening events in children are frequently preceded by early warning signs. However, these are sometimes missed or not acted upon. This is because existing, expert monitoring systems do not provide the accuracy required in paediatrics, nor can they provide the continuous monitoring necessary to detect transient or combined vital sign indicators.

Young Lives is a project funded by the Heath Foundation Shine Programme which supports innovative and cost-efficient service developments in the NHS. Birmingham Children's Hospital is working in partnership with McLaren Electronics who are translating expertise used to continually monitor and analyse racing cars in real time into a system that will predict deterioration in very sick children. The proposed system will also, for some complex conditions, create an adaptive, patient-specific algorithm that can learn as they are deteriorating. The system will be tested and developed in the Intensive Care Unit and then extended out to other wards and potentially other hospitals. Our long-term vision is that many more children can be wirelessly remote-monitored and supported by web-enabled technologies, shortening hospital stays and saving young lives.



MidTECH has supported the Paediatric Early Warning System (West Midlands NHS Innovation awards runner-up 2008) and now has helped negotiate contracts between all parties for Young Lives to ensure that intellectual property is protected and contracts are fair.

Hospital physio joins Olympic team



A Birmingham hospital physiotherapist is going for Gold – after embarking on a 14-month post with the Great Britain women's Olympic hockey team that takes in the 2012 London Games. Emma Batchelor has been seconded from her role as a clinical specialist in physiotherapy with University Hospitals Birmingham NHS Foundation Trust. She has recently returned from Singapore working as a physiotherapist with England Netball, where they won a bronze medal at the world championships.

Emma, who lives in Bromsgrove, said of her new hockey role: "It is a great opportunity. I have been with England netball since 1996, and I am really looking forward to this new challenge. "The GB women's hockey team is currently fourth in the world and, on home soil, have every chance of getting a medal in next year's Olympics."

Emma, who began her new role on August 16 when she flew to Germany for the European Championships, has spent 3-4 months a year away from her hospital job on netball duty, paid for by the England Netball Association. Her new full-time secondment will be similarly funded by GB hockey, working for the English Institute of Sport. "I have had great support from the hospital trust, and from Physiotherapy Manager Catherine Elliott and Therapy services Manager Yvonne Pettigrew in particular. "It's a great place to work and hopefully I can bring something back to the Trust at the end of my secondment."

Emma joined UHB as a physiotherapist in 1995 and, in the same year, worked as a volunteer physio when the world netball championships were held in Birmingham. She will be based with the GB hockey team at the Bisham Abbey National Sports Centre in Buckinghamshire during her secondment, which ends in October 2012 in order to review the team's Olympic performance.

Added Emma: "My role will be to cover pitch sessions, manage any acute injuries and work alongside the coaches in terms of improving performance, such as injury prevention and making the players fitter and stronger."

Worcestershire County cricketers now have their own Angel

Cricketing players worldwide will soon rush to get their own RehabAngel® when they get news of how Worcester County Cricket Club has taken the early advantage of employing their own NHS angel within its camp. WCCC became the first cricket club in the UK following on from premier league football clubs to invest into its own piece of NHS Innovation.

The RehabAngel® a multi-functional knee and calf rehabilitation platform for use within physiotherapy, podiatry and sports rehabilitation provides variable angular rehabilitation. This unique device ensures a variable and measured range of graduated non-weight bearing, partial weight bearing and full weight bearing exercises to be undertaken targeting specific muscle groups in the lower limbs of users.

Wolverhampton's Vikram Solanki Worcestershire batsman and English International was the first to try out the new equipment. Benjamin Davies, Physiotherapist to the Worcestershire County Cricket Club said, "RehabAngel is an essential piece of equipment for both maintenance and rehab of elite cricket athletes. Posterior ankle impingement is a constant threat to our fast bowlers, maintaining ankle dorsi flexion is essential to minimise the risk. Daily stretching at varying degrees of incline on RehabAngel allows us to both maintain and improve ankle dorsi flexion throughout the season. Ross Dewar (Strength and Conditioning Coach) believes RehabAngel enables players to increase depth of squats which in turn increases glute activation, which is a key component of strengthening in elite athletes. RehabAngel is an easily portable and variable piece of training equipment and has become an essential part of our fitness room at WCCC".



Inventor Neil Frame NHS Specialist Podiatrist of East Cheshire NHS Trust said, "To know that the device, as an evidence based piece of NHS equipment, will not only be fulfilling a vital role in the rehabilitation of top professional cricketers but also in injury prevention, fills me with an enormous sense of optimism, for the future care of athletes at every level. I applaud the foresight of the club in identifying it's potential and leading by example with the acquisition of the RehabAngel".

Martin Levermore, Chief Executive Officer of MDTi said, "It is the healthcare professionals that are demonstrating the real inventiveness that is bringing a real payback to the nations health and wellbeing, importantly generating income back into the NHS to further improve healthcare, we at MDTi along with our NHS innovation partners TruSTECH and UCLAN are proud to ensure the realisation of such products like the RehabAngel are widely used in the marketplace".

The equipment can be bought direct from Patterson Medical www.pattersonmedical.com

Which way now? MedTech Confer examines routes to market

Helping more medical innovations make it into healthcare environments will be topping the agenda at the MedTech Confer 2011 in Birmingham on 3 November.

More than 200 clinicians, NHS professionals, private sector health technology businesses and academics from across the West Midlands will be brought together at the free high profile industry event organised by healthcare industry specialist, MedilinkWM.

Some of the healthcare industry's most prominent and influential speakers will be looking at life after spending cuts, and a panel of experts will debate the day's burning issues, from funding to procurement. As well

as looking to the future, the event will also focus on exciting healthcare technology led innovations that have been implemented into clinical practice here in the West Midlands as part of the MedTech Confer's Industry Soapbox section.

"We'll hear from healthcare businesses and healthcare professionals who'll explain how they have collaborated to bring a new clinical initiative into practice, from concept through to adoption," explained MedilinkWM's communications director Michelle Dalton. "If you would like to nominate your own project to be showcased just email me at michelle@medilinkwm.co.uk."

The MedTech Confer will culminate with the Healthcare Business Awards evening dinner event which will feature awards for innovation, partnership with NHS / academia, outstanding growth, export achievement and best start-up. Two free delegate places

are available for West Midlands based organisations, including attendance at the MedTech Confer and evening awards event.

"We're bringing our region's healthcare sector together to look at how we help individuals, companies and the NHS to develop and adopt new technologies, so we can provide practical, useful support," added Michelle. "I hope it will prove to be an inspiring event that will lead to even more collaboration and commercial successes."

More details are available on www.MedilinkWM.co.uk

Events & dates for your diary

Nursing in Practice 2011
22 November, NEC, Birmingham

Medica 2011
16 - 19 November, Düsseldorf, Germany