

MEDICAL TECHNOLOGY AND INNOVATION

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The Health Bill



In January the Health Bill began its legislative passage in the House of Lords. Perhaps the Banking Bill stole the limelight, perhaps the media were still reeling from the New Year break, but for a piece of legislation which could bring with it the most far-reaching changes in the NHS since its formation, it received relatively little attention.

The Bill contains in it a range of measures, some of which offer the NHS opportunities to take full advantage of a currently much underused resource: medical technologies.

First, and perhaps most obviously, is the concept of **innovation prizes**. Supported by Lord Darzi, these would reward those people within the NHS for delivering innovation. The scope is wide – innovation will mean anything from new medical devices to new catering procedures – but the prizes mark a definite incentive to develop groundbreaking ways of working in the NHS and should embrace the benefits medical technologies offer.

Second is the **NHS Constitution**, an innovation in itself. This document will bring together for the first time the rights and responsibilities of all those involved in healthcare provision, from managers to clinicians to patients. Although it is a good step to rationalise these rights and responsibilities, many are asking what practical differences will be made to patients and health workers alike. Enshrining a patient's right to technologies approved by NICE could be one.

The final aspect of the Bill of interest to the medical technology sector is direct payments. These increase patient choice and empowerment, by allowing patients to choose how they spend their allowance. This would encourage a greater awareness of the options available to patients, and would enable them to choose, with clinician consultation, the most appropriate treatment for them.

The Health Bill has had its Second Reading, and advances now to Committee Stage; we look with interest towards Government to see if the Bill will realise its potential for positive change in the NHS. This is a chance we must seize.

What is the Medical Technology Group?

MTG is a coalition of patient groups and research charities, as well as developers and manufacturers of medical technologies. With a wide range of members – from Arthritis Care and Heart Research UK to international companies such as Boston Scientific and Medtronic – MTG is interested in a variety of clinical areas yet has a common objective in securing patient access to the best diagnostic, imaging, surgical and supported living technology.

Spotlight on CEP



Andrew Brown, head of the Centre for Evidence-based Purchasing, explains how it is helping to improve access to medical technology.

CEP provides impartial and objective information about medical technology to help the NHS make better purchasing decisions. Established as part of NHS Purchasing and Supply Agency (PASA) in September 2005 as a recommendation from the joint government and industry task force (HITF), we are building upon the foundations of the former Device Evaluation Service by providing evidence of the value of medical technology solutions.

Clinical and cost effectiveness is at the heart of our work. We help policy makers, commissioners and NHS providers to make sense of technical, clinical, operational, economic and financial data on a range of medical devices. CEP does this by summarising evidence, undertaking equipment evaluations and collating product specifications and market intelligence. Through strong links with stakeholders across the Department of Health and the NHS, CEP provides independent reports and guidance to help key decision makers build business cases to underpin purchasing choices and adopt innovative medical technologies. CEP tailors its products so as to provide the most important information in an easy to digest format which is accessible to the whole of the NHS and social care. By concentrating on projects where we can make an impact upon the uptake of new technology or those cases where existing technology can be used in an innovative manner, the service should help lead to improvements in the patients' experience or increased efficiencies in the delivery of both health and social care.

Since the publication of Lord Darzi's "High Quality Care For All" report on the NHS in June 2008, innovation is high on the political agenda, and CEP has a crucial role to play in this arena. It has been extensively reconfigured to give greater capacity for undertaking projects across the entire range of medical technologies.

Additionally, CEP has worked hard to increase efficiencies in the way it commissions projects and reports from its supplier base of experts and specialists based in NHS and academia. A strategic partnership with the Department of Health-funded National Horizon Scanning Service and much closer liaison with other organisations supporting the uptake of innovative medical technologies, including NICE, the National Technology Adoption Centre and the National Innovation Centre has gone a long way to joining this complex environment together.

The key to this success is the way in which CEP proactively engages with key customers and stakeholders, identifying information gaps and translating this into a fully scoped project to produce the evidence. This approach has already resulted in significant strands of new work of direct relevance to the development and delivery of health policy.

CEP, like all organisations, faces the challenge of demonstrating the value of the work it undertakes. The highly complex environment of the NHS means identifying and tracking the benefit associated with service change, realisation of financial efficiencies, adoption of new technology and improvement in patient experience will take some considerable planning to establish the key criteria and work out how best to capture the data. By considering the benefits up front, CEP is now able to prepare the ground for longer term projects. Direct engagement with the customers and important stakeholders will help to make this difficult task a reality in the case of every new project undertaken. CEP can then use this data to not only evidence the impact of its work, but to speed up and drive further uptake and adoption by sharing the lessons learnt and detailed evidence with regard to the benefits realised.

CEP has already identified new areas of business, and has plans to introduce more interactive toolkits and develop model

business cases to underpin its reports. One of the greatest barriers to the adoption of medical technologies is the success of the business case put forward to finance directors and other board members. Preparing model business cases will enable the NHS at a local level to better understand the full financial, economic and service related implications associated with choosing to adopt a new technology.

With some 60 reports published so far and four interactive cost-calculators available from the PASA website, the portfolio of information is quickly expanding. For example:

- Key reports published include two evidence reviews on the imaging modalities available for the diagnosis of stroke helping the NHS to implement the Department of Health stroke strategy.
- Two reports dealing with sophisticated wound care devices are helping the NHS to make better informed decisions about which technology is the most appropriate to use.
- Buyers' guides on a number of diagnostic imaging modalities are helping the NHS to select the most appropriate imaging equipment which they can then procure through the NHS Supply Chain national framework agreement.
- Work is currently underway to support the technology programme helping to reduce healthcare associated infections through the adoption of new technologies.

Reflecting an increasingly joined up approach, CEP is working with social care policy makers and NHS Supply Chain to deliver more evidence to underpin a wider range of medical equipment than ever before.

Whilst CEP is proactively engaging with key customers in the NHS and wider health service environment to identify new project work, it also welcomes proposals from industry, academia and charities through the CEP web pages <http://www.pasa.nhs.uk/cep>.

A full list of CEP reports and other information about the service can also be found at this web address.

Good Technologies Going To Waste

Britain is at the forefront of designing and manufacturing medical technology. The industry employs around 60,000 people in the UK, and Britain is a net exporter of medical technologies.

However, this expertise does not always result in patients receiving the best possible care. Only 4.5% of the NHS budget is spent on medical technology compared to the European average of 6.3%, which means that important innovations do not always reach those who need them most, and patients can miss out on vital treatments. The Medical Technology Group (MTG) works to end such discrepancies. Two of the Group's technologies are described here, which illustrate some of the most common reasons for technology's under-use. They show the need for a greater connection between NICE guidance and NICE implementation, and the MTG welcomes the opportunity to help any NHS, NGO or patient stakeholder to implement these changes in order to improve patient outcomes.

Uterine Fibroid Embolisation

Fibroids are benign tumours on the uterus wall which can cause heavy periods, pelvic pain, pressure and bladder symptoms and reproductive problems. They are the most common gynaecological problem in the UK, affecting around 30-40% of women. Fibroids are typically treated by hysterectomies, and there are around 30,000 carried out each year for this reason. Hysterectomies usually require around five days in hospital, and two to three months recovering at home.

MTG member Boston Scientific markets an alternative to hysterectomy; Uterine Fibroid Embolisation (UFE). This is a minimally invasive treatment which involves blocking blood supply to the fibroid, causing it to die, shrink and eventually disappear.

UFE usually requires one night in hospital. Many women resume light activities in a few days and the majority of women are able to return to normal activities within one week. On average, 90% of women who had the procedure experience significant or total relief of heavy bleeding, while it is about 85% effective for pain. Patient satisfaction for the procedure is consistently high (91% to 95%). Fertility is maintained and it leaves no scar. This less invasive treatment not only reduces the trauma for patients and their families, it can

also give the NHS significant cost and capacity savings as the length of stay is significantly reduced. Furthermore hysterectomy, unlike UFE, is associated with additional costs in primary care for supportive Hormone Replacement Therapy, antidepressants and incontinence support.

NICE Clinical Guidelines on Heavy Menstrual Bleeding were published in January 2007. All women with symptomatic fibroids of greater than 3cm must be offered a choice of treatments including UFE.

However access to UFE is still far from consistent across the country. The main barrier to access is the lack information and choice given to women by consultant gynaecologists and consequently low referrals to interventional radiologists who perform the procedure. Many GPs are also unaware of this treatment.

Health service professionals need to be more widely educated about alternatives to hysterectomy, at the moment this lack of professional knowledge may limit patients' choices. In a survey carried out by in 2005 by FEmISA, an MTG member that campaigns for greater access to UFE, none of the 59 fibroid sufferers questioned had been offered the procedure despite its NICE recommendation. Medical technology is complex and fast-changing field, thus it is vital that healthcare professionals' knowledge is kept up to date if patients are to be offered the best possible treatment.

Constituents' Queries

FEmISA is a not-for-profit organisation set up by women whose fibroids were successfully treated by embolisation. The group is a member of the MTG. They would be happy to hear from you or your constituents to provide further information. FEmISA can be contacted via their website, www.femisa.org.uk

Insulin Pumps

Insulin pump therapy, also known as continuous subcutaneous insulin infusion (CSII), offers an alternative to frequent injections for type 1 diabetes patients. An insulin pump is a computerised insulin delivery device a little larger than a pager, which delivers insulin into the subcutaneous tissue. The MTG member INPUT works to ensure appropriate access to insulin pumps for diabetes patients in the UK.

Insulin pumps supply the body with insulin in a way which closely mimics the physiology of someone without diabetes. Pumps offer many benefits over frequent insulin injections, enabling patients to live a more normal life. The technology's flexibility in dosing can significantly reduce hypoglycemic episodes. While frequent blood glucose testing remains necessary to optimise therapy, patients on pumps can work, eat or exercise without adhering to a strict schedule of meals and injections. NICE recommends that insulin pumps be used when patients with type 1 diabetes suffer from disabling hypoglycaemia, or when HbA1c levels are high despite the patient trying carefully to manage their condition with adequate healthcare provider support. However, six years after the first NICE Technical Appraisal on CSII, there is large variation in pump use across the UK, suggesting the guidance is not being implemented consistently. Less than 4% of patients with type 1 diabetes in the UK use pumps, compared with up to 35% in the US and at least 20% in most EU countries

Considered in isolation, insulin pump therapy appears more costly than frequent insulin injections. However, insulin pumps can generate savings. First, by decreasing the risk hypoglycemic episodes and other complications, insulin pumps can reduce acute hospital admissions and the long-term costs of uncontrolled diabetes. Diabetes complications can require expensive treatments like laser surgery for retinopathy and dialysis or even transplant for kidney disease. Second, by enhancing patients' lifestyle flexibility and their capacity to attend school and work, pumps can help people with type 1 diabetes remain fully active in society, without recourse to incapacity benefits. NICE does not currently take cost savings outside the NHS into account when making recommendations. The MTG is campaigning for this situation to change, so treatments' 'real' costs and benefits can be taken into account. Access to technologies that enhance or prolong life can simultaneously reduce suffering and create financial efficiency.

Constituents' Queries

INPUT is a patient-led support group for those who use insulin pumps, and a member of the MTG. They would be happy to hear from you or your constituents to provide further information. INPUT can be contacted on 01590 677911 / www.input.me.uk

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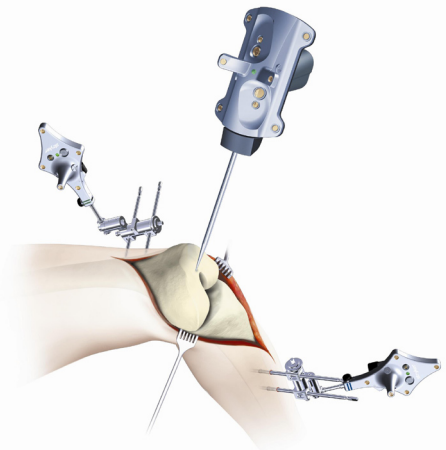
TECHNOLOGY SHOWCASE:

Computer Navigated Orthopaedic Surgery

Computers have become widespread in all areas of life over the last few decades so why not orthopaedic surgery?

Knee replacements rank as one of the most successful operations available in the NHS today. Returning patients to standing and walking on a pain free knee means allowing them to return to the activities that make life worthwhile such as playing with grandchildren, or return to work. As demographics change towards an older, more active population, the techniques used in knee replacement need to be suitable for the baby boomers—or baby zoomers as the more active and wealthy older folk have been dubbed.

Traditionally knee replacements have been implanted using a variety of mechanical jigs which allow a surgeon to shape the bones of the knee so that the components of the knee replacement fit securely on the bones. These mechanical instruments do a great job in making what was once a variable operation into a reproducible procedure, however they are made to fit a wide proportion of the population and so are based on anatomical averages. Now surgeons are using computers to take the procedure one step further making each patient's knee replacement bespoke; it is this small but significant difference that appears to make the difference in patient function.



How does the patient benefit?

Studies have shown that patients with better aligned knee replacements leave hospital faster and have better function¹. Navigation has been shown to align knees better when compared to ordinary instruments². It is this combination which gives clinicians such hope that patients stand to benefit from having their knee replacements put in with computer navigation.

So is this the future of knee replacement?

Looking at the way computers have added to all of our lives it is hard to say that they will stay out of orthopaedic surgery — they are already common place in other disciplines such as neurosurgery. Having said that it is clear that progress must be led by patient benefits and as the evidence around computer navigation grows the future looks certain to be better for at least some of the 60,000 plus³ knee replacement patients who undergo surgery every year.

How does the computer navigation work?

Trackers are attached to the patient's bones allowing a camera to see their relative position.

Smart instruments allow the surgeon to position cutting blocks with respect to the anatomy. Cuts can be measured for their accuracy and the kinematic function of the knee can be assessed on the operating table.

¹ Longstaff L. M., Sloan K., Stamp N., Scaddan M. Beaver R. J. **Good Alignment After Total Knee Arthroplasty Leads to Faster Rehabilitation and Better Function.** *The Journal of Arthroplasty* Vol. 00 No. 0 2008.

² Chauhan S.K., Scott R.G., Bredahl W. Beaver R.J. **Computer-assisted knee arthroplasty versus a conventional jig-based Technique: a randomised, prospective trial.** *J Bone Joint Surg [Br]* 2004;86-B:372-7.

³ **NJR Annual 4th Annual Report**