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Technology focus: data security

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PATIENT SAFETY

Misuse of NHS 24’s decision-support software led to deaths

The partner of a man who died after blunders by NHS staff is suing NHS 24 for £750,000. The role of the software used by the service and how nursing staff repeatedly manipulated it to provide the recommendations they wanted are likely to be at the centre of the civil case.

The original US software used by the Scottish NHS had been revised to allow nurse advisors much greater freedom after criticisms that the software was too prescriptive. But the judge who led a public inquiry into the man’s death described the nurse advisors using the software as insufficiently trained and lacking in clinical competence to overrule the decision-support system.

Steven Wiseman died of septicaemia after errors by a succession of nurse advisors working for the Aberdeen call centre of the Scottish out-of-hours telephone helpline.

Mr Wiseman died in December 2004. His partner, Kerry Robertson, first called NHS 24 on the 19th. Mr Wiseman’s left arm had been increasingly painful for days. A nurse advisor told her that he had a “dose of flu” and should take painkillers.

By the 22nd, Mr Wiseman was in acute pain, and his arm had turned “a funny colour”. NHS 24 was called again. This time, the nurse advisor told him to take some painkillers and drink some water. Mr Wiseman’s condition continued to deteriorate, with his eyes and skin turning yellow, and hours later NHS 24 was contacted again. Ms Robertson was told to give him two painkillers. Ms Robertson then left a message with their local GP, who immediately arranged for his transfer to Aberdeen Royal Infirmary, but Mr Wiseman had such advanced sepsis that he died during the day.

Due to the circumstances of Mr Wiseman’s death, a Fatal Accident Inquiry was appointed to investigate his death and that of Shomi Miah, a 17-year-old from Aberdeen who died from meningitis after similar advice by the same NHS 24 call centre, despite nurse advisors being presented with clear symptoms of the disease during repeated calls by her brothers.

In his investigation of both deaths, Sheriff James Tierney placed the computer software used by NHS 24, and the use of it by the nurse advisors, at the very centre of his inquiry.

He found that nurses in both cases entered details differing from those found in the tape transcripts of the calls. In at least one case, a nurse advisor deliberately entered wrong details because he believed that doctors on call would refuse to attend an out-of-hours call so far from Aberdeen.

Nurse advisors also overrode the software’s recommendation in both cases that the patients should be seen by doctors immediately.

Dr Bryan Robson, Medical Director of NHS 24, gave evidence to Sheriff Tierney’s inquiry about the use of the algorithms in the computer system used by NHS 24. Before becoming director of NHS 24, Dr Robson had led the review of the algorithms used by NHS 24. The review responded to nurses’ criticisms of the original US software, allowing nurse advisors in the Scottish version to exercise their own judgement to a far greater extent than was allowed in the original software design.

Dr Diarmid Kennedy, a specialist in infectious diseases and lecturer at both Glasgow and Yale universities, gave expert witness for the families of both deceased. Based on the tapes of the conversations, Dr Kennedy criticised the questions that were asked in both cases by the nurse advisors as not clinically appropriate, given what they had already been told. He also criticised the medical summaries the nurses entered onto the computer system as misrepresenting what they had been told during each conversation. Dr Kennedy gave it as his opinion that the nurse advisors had decided from the outset that each patient was suffering from a common ailment, and consistently ignored all evidence to the contrary presented to them by the patients and their families.

In his conclusions, the public inquiry found that NHS 24 had failed both patients repeatedly. Sheriff Tierney said that significant number of youngsters’ deaths.

Audit and Healthcare commissions say data sharing would prevent child deaths

A study published jointly by the Audit Commission and the Healthcare Commission has concluded that more data sharing between police, NHS bodies and local authorities would reduce the rate of unintentional injury among children under 14 years old. Their report, Better safe than sorry, says that “unintentional injury represents a serious risk to the health and well-being of children” and accounts for a

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local level, this causes “difficulties for organisations in identifying the needs in their area and hence targeting resources appropriately”. One of its recommendations is that the DoH should “determine what local sources of data are available” and encourage the sharing of high-quality information between the NHS and local government.

Rollout of new cervical-screening system delayed

NHS Scotland has put a hold on the rollout of its new cervical-screening recall system (SCCRS) to GP practices because of faulty security. BMA News reported last month that anyone with a password, including administrative staff, could call up the smear results of any woman in Scotland.

A spokesperson for the BMA said that this was unacceptable “and quite possibly illegal, and I don’t think GPs should co-operate”.

BMA Scotland, in a position statement given to bjch&im added: “The Scottish General Practitioners Committee cannot support SCCR5 until issues of confidentiality have been resolved. It is our position that users of SCCR5 should only have access to information on patients that are registered with their practices.”

NHS Scotland’s Medical Director for Ehealth, Brian Robson, told BMA News that the launch would be delayed until the security problems had been ironed out.

Doubts over the readiness of GP systems and whether the online training for use of the system is suitable have also been reported to contribute to the delay. The new system was due to be launched in May.

Barcoding for safety

Best-practice guidance, Coding for success: simple technology for safer patient care, published last month by the Healthcare Quality Directorate of the DoH, describes how barcoding and similar technologies can be used to improve patient safety, reduce costs and improve efficiency.

In Wales, Informing Healthcare is providing new label printers and barcode software for all its 500 general practices to use when sending samples to laboratories for analysis. Handwritten request forms and labels will be phased out in the next six months.

Doctors are data controllers, not the DoH, but . . .

The Information Commissioner’s Office has told bjch&im that doctors, not government, are the legal controllers of medical records. As defined by the Data Protection Act, the data controller is the person who determines the purposes for which, and the manner in which, personal information may be processed.

Last year, the Department of Health said it wanted GPs in England participating in the pilots for the national Care Records Service to begin uploading summaries of all their patients’ medical records to its database this spring. The Department for Health has maintained its position of a couple of years ago that patients cannot prevent their records going to the database. Recently, though, it changed its hard line about access to these summary records and stated that patients can specify that, once on the system, their records can be hidden and be accessed only with the consent of the data subject. In December, the DoH sent a letter to all objectors telling them that they cannot opt out (bjch&im, February 2007, p2). Privacy campaigners and patient groups, as well as many doctors, object to this.

In a statement to bjch&im, the Information Commissioner’s Office (ICO) said: “GPs and NHS trusts are data controllers for the records they hold on their patients and they are responsible for them. The DoH is not the data controller.”

It means that GPs, as data controllers, could be breaking the law if they hand over an individual’s medical records against his or her wishes. The Data Protection Act (DPA) places special duties on data controllers, who can be prosecuted for failing to handle data properly. A demand from the DoH cannot overrule this, since even a government department cannot instruct doctors to break the law.

Regarding liability for breaches of the DPA, the ICO noted: “If an individual complained to us about his personal information, we would identify who was the data controller responsible for that breach. We are currently liaising with the NHS Connecting for Health team to ensure compliance with the DPA.”

The British Medical Association’s GP-IT spokesman, Dr Richard 

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MPs to probe Care Records Service problems

Concerned MPs are asking ICT professionals and the public to help them in their investigation of the troubled implementation of England’s NHS Care Records Service. The House of Commons Health Committee announced on 5 February it has begun an inquiry into the development of the 24-hour online medical summary records service, which is the main but much delayed deliverable of the National Programme for IT.

The inquiry will consider what personal information will be held on the CRS; whether patients will have the power to withhold their data; who will have access to the records; whether confidentiality can be adequately protected; whether secondary uses will be allowed; and why the project is two years behind schedule.

Interested parties should email written comments before 16 March. See www.parliament.uk/parliamentary_committees/health_committee/hcpn070205.cfm for details.

The Government’s decision, announced last October, that summary medical records would be constructed and made available online without the expressed consent of patients provoked strong protest from pro-privacy groups, clinicians and the British Medical Association (bjhc&im Feb 07, p2). And the Government’s Information sharing vision, released last September (bjhc&im Oct 06, p2), and its intention for the National Identity Register to become the hub of all public-sector databases (bjhc&im June 06, p2) have added to general disquiet about the uses and security of the proposed CRS database.

Nearly a year ago, a group of 23 senior computing academics wrote to the Commons Health Committee urging an independent review of the National Programme, which the academics claimed was “starting to show many of the symptoms of projects that have failed in the past” (bjhc&im May 2006, p2). Concerns about the security of the system were also voiced.

Last December, the taskforce set up by Lord Warner to try to reach a compromise between opposing camps about the development of the CRS, published its report. It recommended that the rollout of the scheme should proceed cautiously (bjhc&im Feb 07, p3).

And, also in December, the Strategic Panel of the BCS Health Informatics Forum published its views on the way forward for England’s National IT Programme. It recommended putting implementation of the Personal Spine Information System on hold and for further work to be done on information governance. It said “there are major issues about the sharing of electronic patient data that need to be resolved . . . and informed patient consent should be paramount”.

Barnardised data tested

Barnardisation — an anonymisation technique used to minimise the risk of individuals being identified when low incidences occur in statistical compilations — has been pivotal in a recent decision by the Scottish Court of Session that the NHS in Scotland was wrong in refusing to release statistical data on the incidence of child-hood leukaemia when a request for it was made under the Scottish Freedom of Information Act.

The ruling is important in that it will make it harder for NHS bodies in the rest of the UK to refuse access to anonymised statistical data extracted from medical records on the grounds that patients could be identified.

The request related to the number of leukaemia cases in Dumfries and Galloway, broken down by census ward. This was refused on the grounds that the incidence of this form of cancer was low and this problem was aggravated because the census ward itself was not a large area. NHS Scotland argued that there was a significant risk of identification of the children involved, even if the statistical data were barnardised, and that, therefore, the information could not be published without breach- ing medical confidentiality or the Data Protection Act.

The Court determined otherwise: “Although the underlying information concerns important biograp-hical events of the children involved, by the stage of the compilation of the barnardised table that information has become not only statistical but perturbed to minimise the risk of identification of any individual child.”

Appeal may lead to redefinition of ‘personal data’

NHS Scotland is now to appeal to the House of Lords to overturn this ruling. In making its decision, the House of Lords will have to decide whether statistical data is personal data within the meaning of the Data Protection Act. And, to make this assessment, it will have to revisit the meaning of ‘personal data’ arrived at by the Court of Appeal in its controvers- ial Durant judgement.
Proven Outcomes through Workflow

The Chester County Hospital (TCCH) is an independent, not-for-profit hospital and provider of a full network of healthcare services. The hospital was named the 2006 Gold Winner of the North America Global Excellence in Business Process Management (BPM) and Workflow Award. This award recognises the positive impact on clinical and business outcomes that TCCH has derived from its workflow implementation.

The workflows submitted were implemented using Soarian®, Siemens next-generation workflow management EPR solution. TCCH created a Bed Management Workflow that helped its organisation reduce the number of manual steps by 50%, while the Infection Control Workflow detected 100% of patients with a documented history of MRSA. Siemens applauds TCCH for its achievement, innovation and excellence in workflow management.

“We realised that Business Process Management was one of the keys to the survival of a healthcare system in the 21st century.”

Ray Hess
Vice President Information Management
The Chester County Hospital
West Chester, Pennsylvania

www.siemens.co.uk/medical
**Misuse of patient information gets jail time**

The Department for Constitutional Affairs has announced that, as soon as it is able, it will change the law to introduce a maximum two-year custodial sentence when there is deliberate and wilful misuse of personal data.

Announcing the intended change in the law, Lord Falconer, Secretary of State for Constitutional Affairs and Lord Chancellor, said: “People have a right to have their privacy protected from those who would deliberately misuse it, and I believe that the introduction of custodial penalties will be an effective deterrent to those who seek to procure or wilfully abuse personal data”.

To deter people from misusing personal data, the Government intends to amend the Data Protection Act to allow magistrates to impose a fine and a six-month imprisonment. Provisions in the Criminal Justice Act 2003, when implemented, however, could widen the sentencing range of magistrates for this offence to 12 months. If the misuse of personal data is judged to be so serious that the case should be heard by a High Court, then conviction could attract two years of imprisonment.

The Government believe that the offences are needed to assist in its policy of wider data sharing within the public sector. Lord Falconer said that such sharing “has the potential to be hugely beneficial to the public and is wholly compatible with proper respect for individuals’ privacy”, and that “one of the essential ways of maintaining that compatibility is to ensure the security and integrity of personal data once it has been shared”.

As the Data Protection Act puts patient information originating from a medical professional into a special category of personal data, the new offence will apply most stringently to NHS bodies.

**Barcelona hospital fined £40,000 for privacy breach**

The Spanish Data Protection Commissioner has fined the Hospital de Saint Rafael in Barcelona 60,100 euros (about £40,000) for revealing details from patients’ records to language inspectors from the Protection Act to allow the Government intends to amend the Data Protection Act to permit an organisation to fine and a six-month imprisonment. Provisions in the Criminal Justice Act 2003, when implemented, however, could widen the sentencing range of magistrates for this offence to 12 months. If the misuse of personal data is judged to be so serious that the case should be heard by a High Court, then conviction could attract two years of imprisonment.

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**Diagnosis denied for a decade**

East Sussex Hospital NHS Trust, in an out-of-court settlement, has paid a policeman £10,000 in compensation because doctors didn’t tell him that he had multiple sclerosis (MS), a chronic, slowly progressive disease of the central nervous system. PC Gary Dimmock first went to his GP in 1992 and was referred to consultants at the Trust. Although MS was recorded in the notes as being a possible diagnosis, Mr Dimmock was kept unaware of this.

The tentative diagnosis was confirmed in 1995 and PC Dimmock was finally informed in 2003. But between 1992 and 2003, although he saw a number of healthcare practitioners, no one told him of his condition. The local newspaper, Eastbourne Today, reports that one handwritten referral note from his GP in 2000, said: “Can you see him quickly. I think he’s guessed.”

The claim for compensation arose because Mr Dimmock had made decisions on the assumption that he had a normal expectation of life. He told Eastbourne Today that his decisions to buy a larger house, make long-term financial commitments and have children were not informed by any prognosis of MS.

He also told the newspaper that he had done a number of things which MS sufferers should not do and that his repeated failure to recover from his illness had made him feel inadequate and insecure and that this had caused bouts of depression. The lack of information also affected his relationship with his wife, who had given up her career to have another child.

A spokesman for the MS Society told the newspaper that it was very rare for a MS sufferer not to be told of his condition, and that the incidence of the use of therapeutic privilege (where there are medical reasons for not telling a patient of a condition) was very rare.
USA legislates to protect genetic privacy

President Bush has called on Congress to pass legislation to ensure the privacy of results of genetic testing. This call relieves the pressure on his controversial prohibition on stem-cell research by showing to the USA public that their President is actively promoting some forms of genetic research.

The President believes that safeguarding genetic privacy would encourage millions of US citizens to undergo genetic testing, which could assist research into the earlier detection and treatment for cancers and other diseases. In a press statement he added that, "If a person is willing to share his or her genetic information, it is important that that information not be exploited in improper ways", and "we want medical research to go forward without an individual fearing personal discrimination".

The legislation the President has in mind is the Genetic Information Nondiscrimination Act of 2007, now before the Senate. The Bill prohibits enrolment and health-insurance premiums being partially based on information about a request for, or receipt of, genetic services, and it extends medical-privacy and confidentiality rules to the disclosure of genetic information. The Bill also makes it an unlawful employment practice for any employer, employment agency, labour organisation or training programme to discriminate against an individual because of genetic information.

In a separate development, however, the American Civil Liberties Union (ACLU) has criticised the Justice Department’s move to collect DNA samples of individuals who are arrested or detained by federal authorities even if they are not convicted, or charged with a crime. Although retention of DNA under these circumstances is commonplace by police in the UK, a spokesperson for the ACLU argued that "whole-sale DNA collection violates basic American values about our right to privacy. DNA is far more than a simple fingerprint. DNA testing reveals medical information about individuals and their families — and the practice of keeping these samples permanently is an open invitation to data mining".

The ACLU argues that "the Justice Department should focus on doing the job right when it comes to following up on the few serious crimes that do involve DNA evidence, and not waste limited police resources on mass DNA testing".

US’s DVA tries EHRs with genetic data

The US Department of Veterans Affairs (DVA), which administers the largest healthcare service in the United States, has launched a project that relates patients’ genetic information to their electronic healthcare records. The move, which appears at odds with stated US Government reservations about uses of genetic data, has been undertaken to further research into the links between the human genome and specific diseases. The linking will allow researchers to search patients’ medical histories for particular diseases and then download their genetic data for further analysis.

The Veterans Health Administration (VHA) electronic healthcare record, known as VISTA, is the largest single EHR implementation in the world. In addition to the VHA, VISTA is also used by other federal healthcare agencies, such as the military health services and the Indian Health Service, which provides healthcare to indigenous American Indians and Alaskans.

VISTA is being advanced as the de facto care record for adoption by all US hospitals in receipt of federal funding, from MedicAid or MediCare, that do not currently use an electronic records system. VISTA was one of the first open-source programmes, and it contains decades of medical data on millions of patients.

The VHA has stated that patients’ genetic information will only be stored by consent. It rolled out a pilot project late in 2006, and now plans to expand it. The VHA is capable of banking samples from 100,000 patients and has already collected specimens from 30,000.

The White House has established a Commission to examine how policies should be drawn up to govern how genetic information is stored on patients’ electronic health records. The US government is cautious about the use of patients’ genetic data, and a number of figures close to the administration have argued for legislation to protect personal privacy in EHRs.

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Researchers at Abertay’s School of Computing and Creative Technologies at the University of Dundee have developed an intelligent exoskeleton that can be programmed to remember and repeat specific limb movements. A robotic system that exercises the arms and legs of people with spinal-cord injuries or who’ve had a stroke could lead to a decrease in waiting lists for physiotherapists and the possibility of treating patients outside of clinics.

There are 28,000 people on waiting lists for physiotherapy in Scotland. Abertay researchers led by Professor David Bradley developed NeXOS in conjunction with colleagues from the University of Sheffield, Sheffield Hallam University and Barnsley Hospital NHS Foundation Trust. The project was supported by the Department of Health through its NEAT (New and Emerging Applications of Technology) programme.

The NeXOS prototype system enables physiotherapists to devise exercise programmes customised to the individual needs of any patient with lower limb problems. Such patients need regular exercise of the affected limb, to keep muscles in trim and prevent the loss of bone mineral density. NeXOS can exercise patients’ legs exactly as the physiotherapist wishes, but without the need for the physiotherapist to be present in person. It can also monitor how well each patient is responding and send data back to the physiotherapist, using the Internet if necessary.

Many more patients could be treated per therapist, leading to potentially big cuts in waiting times. At present, NeXOS uses pneumatics that can be programmed to variable degrees of power and resistance. Power is needed to move immobile limbs, but gradually increasing resistance is needed to encourage muscles to regain their strength.

As well as academics at the three universities involved, practising physiotherapists, clinicians, engineers, mathematicians, health administrators and patients were all involved in brainstorming and analysing the concept. Further research is planned on ways in which therapists could use the technology more effectively, and the Abertay-led team is now looking to stage further trials in conjunction with a potential manufacturer.
Better information for better care at HC2007

Representatives from the Information Centre for Health and Social Care will be present to answer your questions and to raise a few questions of our own at this year’s HC2007 Conference on 19–21 March. As the leading provider of care information for the NHS and social care, we are responsible for analysing, collecting and sharing much of the data that helps aid people’s choices in their day-to-day lives as healthcare professionals. The IC is doing as much as possible to make sure that there is a clear value for patients in all the surveys and collections that we manage.

How will we get maximum value for the data that we collect?

The IC plays an integral role in the development of national datasets to meet the demand for better information at all levels, both within and outside the NHS. One of our long-term aims is to ensure that operational systems designed to support direct patient care are capable of generating standard data. This, in turn, will reduce the administrative burden placed on frontline staff. On 19 March, our National Datasets team will be presenting an afternoon tutorial on “Reducing the burden of information provision and data collection: a 21st century challenge.” Throughout the three days, there will be an online demonstration of our Information Catalogue, which is the only place you can find a list of all healthcare and social care data collections.

How will information about where I live improve the quality of my care?

Since November 2005, the IC has been working with Ordnance Survey on a groundbreaking pilot mapping agreement, designed to manage the supply of digital mapping data to the NHS. The aim of this is to enable comprehensive health comparisons at a local level. We have already seen this development have a major impact on trusts that have adopted this information to develop systems for improving care, from allocating resources for immunisation in deprived areas to focusing stop-smoking services where they are most needed.

We will also be showing some of the work carried out by our clinical audit team, who capture data on treatment for conditions such as diabetes, cancer and heart disease. Increasingly, under the new NHS landscape, this information will be a very useful contribution to the commissioning of quality services.

What’s happening to healthcare resource groups on 1 April?

The IC will be launching the latest healthcare resource group on this date, HRG 4, which will be used for referencing costs by all NHS trusts. These groups make it possible to describe healthcare procedure costs in terms that are easy to understand and easy to use. There will be presentations on getting ready for the changeover and you will be able to sign up for alerts so you can be kept up to date on all the latest developments.

If you would like to find out more about the information we provide, or how we could help you and your organisation, feel free to come find us at stand A13.

Survey on abuse of vulnerable adults

The Information Centre is carrying out a survey on the abuse of vulnerable adults. A questionnaire has been sent to all local authorities asking for information on how cases of abuse are handled and recorded in their areas. The findings will help the IC decide whether we should develop a national collection on abuse, and, if so, what data we should collect. There has been widespread public concern recently about the abuse of vulnerable adults who are being looked after by social services. The IC is looking at developing a new National collection. This would give a clear overall picture of the level of abuse, and help the development of strategies to prevent mistreatment of adults taking place.

For more information please visit www.ic.nhs.uk/ascid/defininginfo/abuse

New service for concordat signatories and associated bodies

ROCR-Lite manages the level and scope of data collected from NHS organisations to reduce the burden of data collection on frontline staff. The benefits of this free comprehensive service include:

• the avoidance of duplicating data collections, using a refined monitoring and approval process, saving time and resources;
• maintaining a comprehensive catalogue of data that is regularly updated and readily available;
• an advisory service that provides suitable alternatives to collecting data;
• maximising the sharing and harmonisation of information with the concordat signatories, and
• assisting signatories in demonstrating compliance with the Concordat Success Measures on information sharing.

Members of the concordat wishing to make a data collection should send their proposals to the ROCR-Lite team at rocr-lite@ic.nhs.uk. The proposal will then be evaluated and feedback given. We continue to encourage all organisations to make initial contact with us before sending a proposal to ensure the process runs as smoothly as possible.

Streamlining the collection of information to minimise the impact on healthcare and social care services is one of the strategic aims of the IC. This is done through review of central returns (ROCR) www.ic.nhs.uk/rocr ROCR Lite and the Strategic Information Group on Adult Social Care (SIGASC) www.ic.nhs.uk/sigasc/ processes (covering DoH and Healthcare Concordat members) and collections aimed at local authorities/ councils respectively.
AND WHAT IS GOOD . . . AND WHAT IS NOT GOOD — NEED WE ASK ANYONE TO TELL THESE THINGS?”

These words come from Zen and the Art of Motorcycle Maintenance by Robert M. Pirsig. I first read this “inquiry into values” as a student in the 1970s, through my interest in motorcycles. Sad person that I am, it occurs to me that similar questions apply to clinical quality. What is good care, and what is not good care, how do we know the difference, and who determines this?

As a statistician (we all have our crosses to bear) such questions hold a strange fascination for me.

Currently, patient administration systems (PASs) are the major source of clinical and other data in the NHS. But these are wholly designed around the mandatory NHS patient dataset, which has changed little since the Körner Review of the late 1970s/early 1980s. Indeed, most PASs may be characterised as 1990s front ends, sitting on 1980s database technology, designed around a 1970s view of how the NHS works.

The Körner Review was ahead of its time. It established some fundamental principles, notably that management information — including central returns — should be a by-product of operational processes. Sadly, this remains a principle honoured more in the breach.

This national patient-level dataset remains:

• administrative in content — the ‘when, where and how much’ of care attracts much more attention than quality and outcomes;

• narrowly focused on acute hospitals — if care does not happen in an acute hospital, it is largely invisible;

• consultant centred — only the consultant nominally responsible for each episode of care is recorded, not who actually carries out each intervention. There is no notion of multidisciplinary teams or shared care. If care is not provided under the direction of a consultant, it is largely invisible;

• organisationally bounded — the archaic distinction continues between inpatients, outpatients and A&E. Apart from cancer, there is very little linkage of patient-level information between NHS organisations or care settings. Among other things, this is a major obstacle for the 16-weeks waiting-times target, and

• very limited on quality — there are essentially only two consistently recorded outcomes of hospital stays: patient left hospital alive, or patient left hospital dead!

In today’s world of choice, plurality, truly patient-centred waiting-times targets, the assessment of performance at clinician and service-level, an emphasis on ‘quality’ and practice-based commissioning, the national dataset is no longer fit for purpose. A new model is needed that:

• is truly patient-centred, and thus generic in terms of care-setting and clinical profession;

• is patient-pathway oriented, spanning primary, secondary, tertiary, community and social care, and NHS and private providers;

• tracks diagnoses, interventions and outcomes against care objectives at each stage of the pathway, regardless of where care is provided or by whom;

• offers more effective means of assessing the impact of variations in case complexity on outcomes.

Billions of pounds are rightly being invested in national NHS IT programmes. This will provide vital infrastructure. To exploit this infrastructure to the full, the NHS needs the right information systems. There is more to life than wires, boxes and soldering irons!

These information systems must be designed around the right information. There is little point in implementing software founded on outmoded care processes and obsolete data models, except maybe to enable greater sharing of the data collected in isolation by each part of the NHS silo. Once the deficiencies of the data are exposed more widely, perhaps more people will come to realise the limitations of the current data model and then join this lonely author in clamouring for radical change.

The challenge is to develop pragmatic measures of quality that can be:

• directly related to evidence-based intermediate and final care outcomes;

• defined robustly to ensure consistency of reporting between clinicians, NHS organisations and over time;

• recorded consistently in casenotes, pending realtime electronic data capture;

• clinically coded for objective analysis in clinical information systems; and

• used as an integral part of clinical audit and consultant appraisal.

Hitherto, IT limitations have constrained the measurement of quality. To realise the full potential of the ‘wires and the boxes’, the conceptual, definitional and practical measurement issues now need to be resolved quickly (and in a very testing external environment). The lessons so far are that the two biggest challenges are deciding: (1) what to measure, and (2) how to operate the disciplined processes necessary for ensuring the consistent recording of the necessary raw information, especially in casenotes. Much has been achieved in developing the measurement of quality at local level by multidisciplinary clinical teams working closely with informatics specialists. The time has now come to retire our beloved 1970s data model and replace it with one fit for the 21st century NHS.

BRIAN DERRY, Vice Chairman, ASSIST.
Agfa is proud to be launching Orbis – Electronic Patient Record Solution. Orbis is the number one hospital wide information system in Europe, with over 800 hospital installations and in excess of 450,000 users.

Visit stand 90 – Hall A at HC 2007 for further information and a demonstration of Orbis.
This issue of the *Journal* is devoted to what may well in the future be seen as one of the most important areas of progress in the development and maintenance of care: the current drive to integrate healthcare and socialcare services. Over the years, the *Journal* has pointed to the obstacles that have in the past existed to make that process difficult: differences in mechanisms for funding, antipathies between elected and appointed bodies and professional jealousies, to name but a few. In recent years, however, there have been encouraging signs at the grass roots that, given goodwill and the occasional financial stimulus, progress can indeed be made. The Somerset NHS and Social Care Trust showed that in organisational terms, integration could be achieved. Rotherham’s child-care services and South and East Belfast H&SS Trust, amongst others, have shown what data integration can achieve. Demonstrator projects in Hammersmith and Leeds have also examined aspects of data sharing. These pioneering efforts have pointed up critical factors for success of enormous importance to those who are about to embark upon the task. High in the list is the need to develop a joint — and mutually understood — vocabulary: experience showed in South and East Belfast (a unitary authority for many years) that this was an absolutely basic step. As is only to be expected, also high in the list is the paramount need to engage the users throughout the process if success is to be achieved — a lesson which, in passing, applies with equal force to national healthcare. Views about confidentiality and, more particularly, access to patient/client data, all these have to be both discussed and harmonised if joint projects are to be successful. And all these factors assume that problems of technical compatibility are either non-existent, or can be solved.

Two of this issue’s articles show the way in which these problems can be attacked. In his article, David Johnstone, Director and a member of the NPfIT National Programme Board and a member of the Electronic Social Care Record Implementation Board and a member of the NPfIT National Programme Board sets out his personal view on the central position. He explains that there is no overarching governance arrangement to ensure consistency in vision, strategy or standards. Current arrangements are informal, and there is no structure mandated to ensure congruence for those areas where interoperability is a requirement.

For those who, at all levels of healthcare and socialcare, accept that the way forward relies on the effective integration of services — an integration that is almost totally reliant on combined electronic records — this analysis is depressing. Authorities in the field have shown that progress can be made. It would be sadly ironic if the centre has to work its way through all the same problems: Marx rears his head again: “those who do not heed the lessons of history are destined to repeat them.”

Michael Fairey

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The recent white paper Our health, our care, our say identifies concerns over people’s perception of poor co-ordination between care agencies. The current interface between healthcare and social care, it says, appears confusing and lacking in co-ordination, and it can feel fragmented to the individual. These concerns echo others that have been raised in recent years. Inquiries into the tragic deaths of both children and vulnerable adults have highlighted problems with the interfaces between agencies — not just concerning failures to share information, but also in the ability of those agencies to work together effectively to support and protect the people in their care. Our health, our care, our say expresses an ambition to rectify those shortcomings. First, by placing the public at the centre of the services they receive, and secondly, where services come from different providers, to amalgamate those services as effectively as possible. Delivery of services, it says, “will be integrated and built round the needs of individuals and not service providers”.

The Department of Health is not alone in promoting closer working between care agencies. Under the banner headline of Every child matters, the Department for Education and Skills is leading on a programme of work that includes the common-assessment framework (CAF) for children, the concept of the lead professional and much closer integration between all agencies providing support for a child. The development of children’s trust arrangements is intended to provide a framework for the local integration of children’s services, including healthcare services.

The expectations that lie behind these ambitions are those of integration at a fundamental level: moving the focus of service delivery from individual agencies to a shared, person-focused perspective. This shift in perspective implies a similar shift in approaches to information management. The delivery of person-centred care will require access to person-centred records.

The person-centred approach

Our health, our care, our say spells it out: an integrated healthcare and social care information system, it says, will enable a shared healthcare and social care plan to follow a person as they move through the care system. “By 2008 we would expect everyone with both long-term health and social care needs to have an integrated care plan if they want one. By 2010 we would expect everyone with a long-term condition to be offered a care plan.”

The challenge doesn’t stop there. The intention is to develop “joint health and social care teams, with dedicated case management...”

ABSTRACT

Concerns over the lack of co-ordination between care agencies are driving policy to require greater integration of services and practice towards the development of person-centred care. This shift in perspective requires an equal shift in approaches to technology and information management. Person-centred care can only be effectively delivered through access to person-centred records and systems, which will equally require the introduction of person-centred information governance. The challenge lies in managing and redefining boundaries of practice, along with changes in processes, systems and technology, to ensure that developments in integration effectively support the person-centred approach.

through a single expert case manager, 24 × 7 service contact and an information system that supports a shared health and socialcare record."

It seems reasonable to assume that sharing an individual’s records, with, of course, the individual’s consent, will make it easier for different services to provide co-ordinated care to the individual user. The development of England’s NHS Electronic Care Records Service will provide the first steps towards supporting this approach, enabling access to information across a range of healthcare services. But the next steps — developing systems that provide effective, managed integration between a range of disparate agencies — are only part of the challenge these services face.

Cultural change is also implied. Increasingly, staff will be expected to have the skills to operate confidently in a multi-agency environment, using common tools and processes. And it will be through the closer integration of the NHS and socialcare workforces — supported by common education frameworks, as well as career structures and rewards — that agencies will be expected to deliver more personalised care, more effectively.

The message is clear: multi-agency care will be person-centred care. Service users and their carers become participative partners rather than passive consumers. They should be as empowered to influence and direct outcomes as any other provider or commissioner. It is the exercise of choice, enabled by informed consent, that gives them that power.

Which means that access to information, and the service user’s ability to manage that access becomes key.

**Redefining boundaries**

Traditionally, information is shared in an exchange between agencies. There should be obvious points of interface where it happens, and clear boundaries that help define ownership and responsibility. Where joint teams have been established, information needs to be managed and shared within the team, and boundaries need to be defined to manage the interface between the team and its contributing partner agencies.

But in fully integrated services information will be shared across services. Boundaries that define and protect that information will have to be established and managed independently of the agencies involved. Interoperable technology will help, but agencies will also need to have consistent standards for recording and coding, to establish clear processes for managing and protecting records and to have compatible approaches to providing subject access, record retention, archiving and other information-governance concerns.

*Our health, our care, our way* states that organisational boundaries should not be barriers, but it will be important to recognise and manage those boundaries rather than trying to get rid of them altogether. Some of them are enshrined in law.

Agencies can be daunted by the labyrinth of legislation that appears to wind its way around the management of personal information. It is complex, but it provides a framework that respects personal privacy and individual choice while protecting the vulnerable from risk of harm. The law says what we need to have in place to allow sharing to take place. It defines when we can and cannot share. But it is professional judgement — the knowledge and experience of skilled practitioners — that identifies what we need to share and why.

Another set of boundaries that needs to be recognised and managed concerns the practitioners themselves. Professional boundaries are challenged by multi-agency, multiprofessional working. Work that has traditionally lain with a specific profession (that of the qualified nurse, or the qualified social worker, for instance) may now be influenced by the work of another; in particular, information collected by members of one agency is likely to become the basis on which another is asked to deliver services. Person-centred care is dependent on trust — not just the trust of the individual for the practitioners delivering their service, but trust between those practitioners that expectations and standards are being met. When establishing multi-agency services, common language and understanding between practitioner groups needs to be developed and agreed, not just assumed. The contribution of expertise needs to be acknowledged and recognised.

Differences in practice need to be identified and accounted for, and
professional codes of practice may need to be aligned.

**Enabling practice across agencies**

Policy and practice are converging through the introduction of more holistic approaches to the assessment of needs and planning for care. This was first seen in the introduction of the single-assessment process for older people (SAP). A common assessment framework is now being developed for children, and work is being undertaken to extend the SAP into a similar common assessment framework for all adult-client groups. The next step will be to introduce frameworks for joint care planning, based on a common understanding of a client’s needs and circumstances. These approaches are intended to enable multi-agency assessments and reviews that consider the whole person rather than focusing on a specific need or service.

In practice, it will be developments in technology that support and deliver these changes. The integration of systems and the exchange of data will facilitate the ‘collected once, shared among many’ expectations that underpin these new approaches. But effective implementation of multi-agency technology will need to deliver more than data exchange; it should enable management of workflow within and between agencies and provide mechanisms for service users to manage access to their records. Improvements in data collection/quality should streamline performance measurement and mitigate concerns over client/patient safety: essential information will no longer lie buried in paper files.

**The challenge**

There are, of course, risks inherent in implementing change: rushing to achieve integration may result in cumbersome or unsustainable solutions. Specialisms may become eroded and the value of multiprofessional perspectives lost. Focus could fall on a single model of care, rather than a holistic understanding of need. Lack of trust across professional boundaries could result in duplication of work and uncertainty for clients/patients, while high reliance on ‘tickbox’ data collection might encourage overly mechanistic assessment/diagnosis. Tensions between budgets hold the potential to overload reliance on one agency, or allow service users with complex needs to fall between the cracks. And, perhaps of most concern, access to integrated-record systems may encourage unethical and inappropriate use of data.

The challenge, therefore, is to deliver flexible, person-centred information services that support multi-agency working without compromising confidentiality, the information needs of the contributing agencies or the requirements of the practitioners who deliver care.

It makes sense to build on what already exists, rather than tearing everything down to start again, but that will mean finding ways to interface and integrate a range of disparate systems, developing common standards for information as well as technology and implementing information-governance mechanisms — systems, process and behaviours — that enable as well as protect the service user at the heart of each record.

Penelope Hill, Information Strategy Manager for Social Care, Warwickshire County Council. Member of the Care Record Development Board. Member of the Electronic Social Care Record Implementation Board.

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The challenge of making healthcare and socialcare information systems interoperable

David Johnstone

It is important to remind ourselves of the context in which the changes in information management are taking place. First, the Transformational Government Programme is aiming to modernise public services, with services designed around the requirements of the citizen. The other major driver, particularly for healthcare and socialcare, is the challenge over the next half-century due to the ageing of the population boom of the late 1940s. It brings an increase in long-term illnesses, rising costs of care and a reduction in the ratio between the workforce and the non-working population.

The reports by Derek Wanless summarise these challenges, concluding that current healthcare and socialcare practices are unsustainable and that more flexible working, supported by information technology, is key to system reform.

In this article, I will focus on healthcare and socialcare information systems and will discuss the challenges of achieving interoperability between them.

To achieve seamless, people-centred services, it is important to ensure that information can follow the individual from childhood to adulthood and between healthcare and socialcare.

At present, responsibility for the development of healthcare and socialcare systems is split across government departments. England’s programme for the NHS is driven through the National Programme for IT (NPfIT), led by a Department of Health agency, NHS Connecting for Health (CfH). Lead responsibility for the socialcare personal record system is shared between the Department of Health (for adults) and Department for Education and Skills (DfES) (for children).

This split in lead responsibilities within the government departments is problematic. There is no overarching governance arrangement to ensure consistency in vision, strategy or standards. Personal electronic healthcare records are not being developed to a consistent model. The NHS’s national care-record system and the DfES-led Integrated Children’s System are both based on data-centric records. The Electronic Social Care Record (ESCR) is a document-centric record, reflecting guidance published in 2004 that predates the emphasis on interoperability and exchange of information.

There is no formal co-ordination of system governance or standards development across these different information systems. The NHS has a strong governance framework overseen by the Care Record Development Board. Its Information Standards Board provides expertise and leadership in the development and implementation of consistent information standards across the NHS. DfES has recently established a Learner and Children’s Services Information Standards Board relating to children’s services. There is no adequate lead for adult socialcare information-standards development. Consequently, we have information-standards bodies ranging from very good to hardly visible. Collaboration between these bodies is informal with no recourse to any overall co-ordinating body should there be irreconcilable differences.

To allow this lack of co-ordination to continue risks the building of a technological Tower of Babel at enormous cost to the public purse, and the development of systems incapable of sharing information outside their technological towers.

Where do we want to get to?
The ESCR Implementation Board considered a paper commissioned through the National Programme for IT that outlined the strategic case for healthcare and socialcare integration. In this paper, four options were identified:

• Option 1: do nothing — ie,
• Option 2: develop separate care records for healthcare and socialcare;
• Option 3: implement integration of healthcare and socialcare services working to consistent, nationally defined standards. Within this option, two timescales were identified, the first being to aim to achieve the initial project scope by 2008 and the second to achieve the same by 2010, and
• Option 4: to implement a single healthcare and socialcare information system.

The conclusion of this paper was that the most realistic and achievable option that had the best fit with strategic objectives was Option 3 — ie, to aim for the integration of healthcare and socialcare systems on an incremental basis within a national governance framework.

Such an approach would be consistent with that recommended by the Royal Society and has similarities to the Canadian strategy.

To achieve integration and interoperability of healthcare and socialcare information systems requires:
• clarity of purpose;
• identification of the benefits to the end user;
• demonstration of the efficiency and cost effectiveness of developing integrated information systems; and
• a consistently managed implementation programme to ensure the objectives are delivered.

Need for stronger co-ordination

There are two weaknesses in the present arrangements for developing sharable personal-care records. First, the absence of a co-ordinating governing body and, secondly, a mandated formal structure to ensure consistency of information standards across healthcare, socialcare, children and adult information systems, where interoperability is a requirement.

In the absence of a co-ordinating body, we have separate work streams each focused on its own implementation requirements, albeit with an awareness of the need to work towards information exchange, but with insufficient attention to how that integration will be achieved. Decisions being taken now — indeed some have already been taken — shape whether or not interoperability and information exchange is achievable in the future. The absence of a co-ordinating body puts at risk the goal of integrated personal-care records. Given the huge amount of public investment going into these initiatives, this is a high-risk omission.

If a Health and Welfare Care Record Programme Board were to be established, or responsibility for co-ordination vested in an existing body, its main remit would be to oversee the development of integrated systems across healthcare and socialcare, co-ordinating the personal-care record-development programmes in the DoH, NHS and DfES. It would:
• ensure that workforce issues are properly addressed. As The Royal Society report on digital healthcare states, “the single most important factor in realising the potential of healthcare ICTs is the people who use them. The end users of any new technology must be involved at all stages of the design, development and implementation, taking into account how people work together and how patients, carers and healthcare professionals interact”;
• ensure that there was a sound business case for all aspects of the implementation of integrated healthcare and socialcare records, with a fundamental premise that integration of information systems must benefit the patient and user of socialcare services.
• keep a focus on sustainability, which is particularly important if the implementation strategy is to be based on an iterative and evolutionary approach; and
• be responsible for co-ordinating the governance and standards framework that will deliver interoperability at local, regional, national and international levels.

Need for consistent information standards

There also needs to be a body charged with ensuring effective co-ordination of the governance infrastructure of integrated information systems.

A care-record guarantee covering both healthcare and socialcare (including adults and children) would establish consistent national standards for consent to data collection and its use, confidentiality and authorisation of access to data.

This body could also ensure a consistent national approach to standards development, including semantic interoperability (ie, human-to-human information exchange), functional interoperability (ie, machine-to-machine information exchange), terminology, security, messaging, and record structure.

Conclusion

Possibly the biggest threat to the successful implementation of sharable healthcare and socialcare records is the lack of overall co-ordination and the absence of a consistent national framework for the implementation of integrated personal-care records. Given the amount of public funds currently being invested and the tight timescales for delivery of objectives, the absence of overall co-ordination of these programmes presents a major risk not only to the strategy to develop integrated personal-care records but also to the Transformational Government Programme.

David Johnstone, Director of Adult and Community Services, Devon County Council, co-chair of the Electronic Social Care Record Implementation Board, and member of NPfIT National Programme Board.

Much of this article is based on papers, debates and discussions that have taken place within the Electronic Social Care Record (ESCR) Implementation Board and the Care Record Development Board (CRDB) over the past 18 months. The views are those of the author and do not represent either the formal position of the ESCR Implementation Board or of the Association of Directors of Social Services (ADSS).

References

These are available on request from editorial@bjhc.co.uk
Integrated working puts discharge delays to bed at the Countess of Chester Hospital

NHS and Social Services organisations in Cheshire joined forces some three years ago to counter hospital-bed blocking by means of an electronic patient-referral system. Medisec Software’s Managing Director, Tom Rothwell, highlights what he believes enabled the new way of working that has delivered desirable outcomes for all involved.

**ABSTRACT**

Bed blocking occurs when patients who are medically fit to be discharged from hospital have to remain there for some reason. Although day-to-day communication between the NHS and Social Services to manage patient discharges jointly is critical to achieving timely discharge, it is usually very ineffective.

The Community Care (Discharge Liaison) 2003 Act of Parliament provided the basis for formal communication and this was used as the framework for the development of a computer-aided process to tackle the problems experienced by the two organisations.

This article outlines the successful development of an electronic referrals’ system that provides the Countess of Chester Hospital NHS Foundation Trust and local Social Services organisations in Chester and Flintshire with facilities to manage the process of discharge liaison. By integrating systems and fostering cooperation between the different organisations involved, a significant reduction in bed blocking has been achieved without incurring huge costs or drawing on scarce resources.

Success is borne out by an enhanced working relationship between the two organisations and the reduction in discharge delays.

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Tom Rothwell

departments £100 for each day a bed is blocked when Social Services does not respond in time. In one way or another; blocked beds are expensive to hospitals, patients and Social Services.

Preparing post-discharge arrangements and managing the transition from hospital to the discharge destination often encompasses complex issues. Overstretched nurses usually have to follow a time-consuming and haphazard discharge procedure, which involves waiting for office hours to phone or fax details through to their colleagues in Social Services. Messages go unanswered, delays ensue from hospital/social-work shift patterns and critical details such as patients’ mobility problems get lost on route (or on Post-it notes).

With no manageable process in place, how can we ever hope to control it?

**An electronically based solution**

The Countess of Chester Hospital NHS Foundation Trust and Chester County Council Social Services (CCCSS) commissioned Medisec Software to provide a computerised system to manage discharge liaison. The system was implemented successfully in March 2004 and has since been extended to Flintshire County Council Social Services (FCCSS) for patients living in Wales but
treated at the Countess of Chester.

As with any successful development across organisational and country boundaries, all involved must have the will for it to work and some tenacity.

Since 1999, the Countess of Chester had been able to manage the process of electronic delivery of clinical correspondence to, as well as the sharing of data with, primary care using a web-based system — MedisecNET. On the basis of this well-established and successful facility the hospital and CCCSS wanted to examine the feasibility of supplying similar inter-organisational facilities to assist in managing the discharge-liaison process.

Development started in September 2003. The project team was formed from operational and management representatives from IT and user departments in both organisations.

There were, of course, developmental challenges:
- agreeing a specification.
Ultimately, we were able to agree on version 5, but had the IM&T and user representatives not worked so well together, then the project could have faltered at this point,
- Social Services were not connected to NHSnet, so they were connected via a link with a high-security ID key fob agreed by each organisation’s network and security managements;
- performance of a web application over a telephone link is slow, so the application was designed specifically to provide fast local performance at hospital and Social Services offices; and
- patient privacy and confidentiality had to be assured, so we ensured that NHS and Social Services Caldicott representatives signed up to the specification and, as part of the application solution, consent to sharing their data with Social Services was sought from every patient. Transfers were encrypted at industry-standard levels.

The process

First, the hospital patient-administration system (PAS) was enhanced to allow it to capture relevant data for discharge liaison, including referral, assessment and discharge details. A separate application (MedisecEReferrals Social Service) then interfaced with the PAS to manage the communication and data flows between the organisations. See figure 1.

By standardising the format of the discharge forms, discipline over the data-capture process has been achieved. Required templates specify for example what data is required and verify that patient consent to data sharing has been agreed.

Nurses can send electronic referrals direct from the ward or from the Discharge Liaison Office to Cheshire Social Services offices at any time of the day or night.

The application extracts the latest status for each patient from the PAS and keeps Social Services up to date on an hourly basis. Social Services staff have instant access to vital patient information such as next-of-kin, mobility, mental state and any changes that occur, such as a change of ward or patient’s discharge date. The fact that both the hospital and Social Services can see the latest patient updates at the same time is an important feature, as it means that both are equipped with exactly the same information when discussing cases.

Amendments detected by the Medisec application are colour coded so that significant events — such as a new or withdrawn referral, assessment or discharge notification or patient death — are highlighted differently from data.
Multi-agency interoperability

changes like ward moves or changes of registered GP.

The system also allows for Social Services to maintain their own memo data in relation to a particular case — for example, a Social Services registration number or details of which social worker is dealing with the case. All delay ‘sitrep’ coding is entered dynamically.

Notifying Social Services of such changes allows them to manage their own actions in a much more proactive way. Complex cases in particular can be planned for and actioned at an earlier stage than would normally be the case.

All events, changes and notifications are timed to the second within the system and any reasons for delays in discharges are accurately recorded, so any changes to Social Services can be calculated automatically with a full audit trail. There is no longer any need for disagreements at the regular Friday meetings to produce agreed sitrep reports and charges, and, as a result, this has significantly enhanced inter-agency working relationships.

Results
The number of patients and associated discharge delays registered before the electronic system was introduced were calculated manually and were, therefore, subject to some inaccuracy. It was estimated, though, that the Countess of Chester could be charging Chester Social Services for around 15 days a month for bed blocking attributable to their delays.

When the Community Care (Delayed Discharges) Act came into force in January 2004, the number of reimbursable days recorded almost halved from 15 to eight days. When the electronic referrals’ system was introduced three months later, this figure halved again to around four days a month. See table 1.

The system was extended to Flintshire Social Services in September 2006. Wales does not account for chargeable delay days because the 2003 Act only covers England. Nevertheless, the amount of bed blocking attributable to Social Services again dropped dramatically from nearly nine days per month to just two-and-a-half. See table 2.

Observations
The system proved, in one respect, to be too dynamic. When a patient who had been referred to Social Services died in hospital before he/she was moved, recording this on the system meant that Social Services often knew about it before the hospital could notify the next of kin. A step was added, therefore, to ensure that no action was taken by Social Services until the hospital confirmed the relatives had been notified.

Interestingly, the results revealed that the degree of delay thought to have been directly attributable to Social Services was less than previously estimated.

Successful developments rely on:

• user involvement at management and operational levels;
• good existing working relationships between relevant organisations and departments;
• a will to do, and
• an attention to detail.

Tom Rothwell, Managing Director, Medisec Software Ltd.

Acknowledgments
The author acknowledges significant contributions to the success of these installations from IM&T Department (Development and Systems Support) and the Discharge Liaison Department at the Countess of Chester Hospital NHS Foundation Trust, Cheshire County Council Social Services Access Team and Systems Support, and Flintshire County Council Social Services Adult Social Care Department and its Project Management and Systems Support Teams.
Towards a transformed Health Service

According to John Coulthard, Director of Healthcare at Microsoft UK, the future of medicine will be dominated by four 'P's, and ICT and healthcare IM&T specialists will play a central role. The NHS will shift its focus from being mainly preoccupied with dealing with diseases after they have appeared to helping people more to avoid them wherever possible. William Payne reports from an interview last month with John Coulthard.

John Coulthard believes that future healthcare will be “predictive, preventative, pre-emptive and participatory”: the four ‘P’s. These four, with the technologies that will make them possible, will transform the shape of the Health Service, accelerating the shift from hospital to community and person-based services.

Advances in molecular biology and in biological informatics will allow doctors to screen a single drop of blood for thousands of genetic markers and diseases. This will enable clinicians to predict the likelihood of a disease emerging over a lifetime and to help people take steps to prevent it through lifestyle changes, diet or prophylactic medicines. Diseases that do take hold will be treated very much earlier and with highly personalised medicines. Finally, people will assume a far greater role and responsibility in maintaining their own health, participating with community health workers and clinicians in keeping themselves fit and free from disease and taking a full part in the treatment management of their own diseases.

This model of future healthcare and disease management will require not only human skills and new approaches on the parts of both clinicians and patients, it will also require powerful software systems, particularly in bio-informatics, medical analytics and advanced clinical-decision support.

Lifestyle and genes are increasingly being seen as the critical factors in the spread of many of the most serious diseases — including the chronic diseases that the developed world will face over the next decades. Participatory and preventative approaches will help deal with lifestyle factors. Genetic causes will require prediction of risk and early pre-emptive treatments. Many of the most effective drugs being developed now for future use are also highly toxic. They will have to be personalised to the genetic and proteomic profile of each patient. This introduces a fifth ‘P’: personalised medicine.

This vision has its ultimate inspiration in the work of Lee Hood, one of the pioneers of the Human Genome Project, and a principal founder of the new systems-biology approach to medicine. Today, Hood is hailed as one of the leading visionaries of how advances in molecular biology, genetics, bio-informatics and healthcare IT will merge to create a new approach to medicine. John Hopkins Medical School recently compared his impact on medicine to that of Bill Gates on computing.

Bill Gates himself, Coulthard’s boss, is a long-time enthusiast for Hood’s thinking. Gates spotted Hood as a rising star and gave $12m to the University of Washington in 1992 expressly to help lure Hood to Seattle to create the first systems-biology department. Hood had conceived the systems-biology concept while at CalTech, believing that a multidisciplinary approach — including mathematicians, information scientists and IT specialists — was necessary to meet the new challenges of genetics and protein-based analysis, both in pure research and in healthcare. Opposition from biologists within CalTech torpedoed Hood’s plans to set up the new department there, but Gates took up the cause and persuaded the University of Washington to establish the department instead, with Hood as the first director. Gates has continued to champion Hood’s ideas, and in 2005, he gave a further $10m to Hood’s Institute of Systems Biology.
**Knowledge exploitation**

Coulthard believes that knowledge, and the way people use knowledge, both within and outside the Health Service, is the key to achieving Hood’s vision of a transformed healthcare system. “If you compare Lee Hood’s vision of the 4P healthcare environment of the future with what we have now, which is people living their lives in relative wellness until they suddenly become chronically ill, and then remain chronically ill for typically the rest of their lives, what we have now is a service that promotes a lack of concern in people’s minds about their health. So people go on smoking. Perhaps more worryingly, they go on eating the wrong kinds of foods. What you can see is two poles, with Lee Hood’s 4Ps Prospective Medicine at one end and the current system of late acute care at the other. The question is: what is going to shift us from where we are now to the scenario of 4P Prospective Medicine? And the answer to that is ‘information and people’.”

Microsoft has a part to play in this healthcare revolution, Coulthard said, because the company is founded on the principle of turning corporate information into a form that is useful for non-IT specialists — what Microsoft has recently called being “people-ready” — and its ability to span increasingly from very large systems to personal devices and home technologies. “What Microsoft is about, above all”, said Coulthard, “is the intersection between people and knowledge, and the people within organisations who access and exploit knowledge. Microsoft will increasingly provide, at scale, the ability for people to be part of those four Ps. It’s a broad spectrum, from members of the public through to clinicians and specialists.”

Coulthard places emphasis on the ability to deliver “at scale” as a key component in all future healthcare systems. He sees the appointment of Ray Ozzie, the inventor of the ground-breaking corporate groupware application Lotus Notes, as Microsoft’s Chief Software Architect, and the arrival in Redmond of similar large-scale computing luminaries such as Don Ferguson, the father of IBM’s WebSphere architecture, as “a highly significant step in the development of this agenda”.

Microsoft is working hard to turn the vision into reality, Coulthard said. “Examples of this 4Ps approach are beginning to appear. Microsoft is currently working on a project that shows how predictive technology begins to change the shape of healthcare. We have developed an algorithm that looks at a patient’s vital signs, predicts if their condition will improve or worsen, and then flags it up to the doctor. This is currently in place in an NHS hospital, and has succeeded in cutting right down on the number of emergency interventions needed. Patients are treated sooner, before a crisis erupts. It allows clinicians to first predict, and then pre-empt any cardiac crisis. Doctors’ time is used far more efficiently, stress is reduced, and, most important of all, patient outcomes have been greatly improved.”

**Key role for informaticians**

John Coulthard believes that IM&T specialists within the Health Service deserve more support, a better career structure and greater organisational stability. “If information and data are going to become vital to the Health Service,” he said, “then we have to look over our shoulder and ask where are the IM&T organisations that are going to deliver all these transformational changes in the NHS in the future? Do we have sufficient, capable and motivated individuals in the Service, who are working in organisationally stable units, to deliver that? I have to say, I don’t think we have. I still meet some colleagues of mine from my days as an NHS IM&T manager in the late 1990s. But most of them have moved on. Their organisations don’t exist. There is no definable career pattern that they have followed, if you compare them with clinicians.

“My biggest concern is that the NHS should be people-ready. The key here is finding sufficient, capable and motivated people to deliver the National Programme, deliver the level of excellence that NHS IM&T requires, and deliver the clinical outreach that the NHS needs. If you can find those people, and pay them as much as you pay the doctors, and reward them effectively, and put them into stable and well-managed organisations, the NHS will save itself an absolute fortune. And doctors will be able to do a much better job for their patients than they currently do.

“We also need a lot more clinicians involved in NHS IM&T. Clinicians are vital to the whole process. We need far greater clinical involvement in healthcare informatics. We need more doctors involved in healthcare management and in the British Association of Medical Managers. And we need many more doctors with MBAs, and we need many more MBAs who have been to places such as the King’s Fund or the Tavistock Institute. If you can get that kind of cross-fertilisation between all these different groups, then we will start to move away from the episodic, late acute, mode of healthcare that we have today, towards the longitudinal, lifestyle approach that will entail greater health in the population, and less chronic disease.”

William Payne is a freelance writer. Williampayne@lineone.net

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**Futurology**

**Hear John Coulthard speak at HC2007** about Microsoft’s development of the common user interface for England’s Care Records Service. **Tuesday 20 March, 09.00.**
**BOOK REVIEWS**

**The new politics of the NHS (5th edition)**
Rudolf Klein

This book, first published in 1983 and now in its fifth edition, describes policy making in the NHS from its creation to the current day. It does this in the context of an ever-changing environment. Klein’s informative text details how and why political decisions concerning the NHS came about, and it is recommended for anyone involved in implementing change and wanting to shape the future of the NHS. It unashamedly deals only with the NHS in England, although it does bring in developments around the world where these are relevant. Aiming to appeal more broadly to readers interested in the policy-making process in general, it assumes no prior knowledge of the NHS.

The first seven chapters, taking the NHS up to 2000, remain the same as in previous editions. The author justifies this by saying that he would not wish to make major modifications to his interpretation of events, which is fair enough; altering this might be seen as rewriting history. He also says that “there seems little point in engaging in scholarly niggles”, so we do not find out how fundamental the scholarly niggles might be or whether the book might have been improved had they been discussed.

The book is organised chronologically, with chapters entitled the politics of creation, consolidation, technocratic change, disillusionment, value for money, the big bang, the Third Way, reinvention, and from church to garage. ‘The politics of reinvention’ updates the story to the end of 2005. The final chapter left the feeling that it is too early for the robust political analysis that marks earlier chapters. Let us hope that this chapter will be rewritten if and when the next edition appears.

The book is well referenced to aid academic study, and an extensive index makes finding particular items easy. Those who have the previous edition may consider that the price tag of almost £25 makes the 55 pages of the two new chapters expensive.

Sheila Bullas
Director, eBeck

**Evaluation methods in biomedical informatics (2nd edition)**
Charles P Friedman and Jeremy C Wyatt

What is the difference between evaluation and research? This updated second edition provides valuable introductory material exploring the differences and similarities, and usefully covers many of the statistical and other techniques common to both. The first edition has become a standard text for many courses on the subject and for many informaticians undertaking evaluation studies in health informatics. No doubt this latest edition will be similarly popular.

Evaluation is an essential component of the health informatician’s armoury, and this book provides a vital introduction to the tools and wide variety of techniques available to undertake an appropriate evaluation of systems within many areas of healthcare and biomedical informatics.

In 42 chapters, the authors take the reader from an exploration of basic theoretical issues on the nature of evaluation, through evaluation-study designs using objective and subjective approaches, and there is a new chapter covering economic aspects of evaluation. The multiple approaches to evaluation are summarised early in the book, and applications within biomedical informatics are explored. Many of the chapters incorporate a self-study approach to using the book, with self-tests and scenarios designed to allow examination of basic principles as well as of the complex issues involved in developing, undertaking and analysing evaluations.

Bestriding the transatlantic divide, with primary authors from the US and UK schools of evaluation, and with specially written chapters by guest authors (eg on subjectivist studies), the book overcomes the US-dominated focus of many texts in this important series from Springer.

Dr Peter J Murray
Founding Fellow, CHIRAD

**Google — the missing manual (2nd edition)**
Sarah Milstein, JD
Biesdorfer, Matthew

If, like me, you are a regular Google user you may wonder how anyone can write 400-plus pages on its use, but these authors have managed to do so.

The book starts by introducing readers to the history of Google, how it functions, and the basics of searching. There is a host of useful instructions and tips on how to make searching simpler and more specific, most of which are likely to be news to the majority of users. Part 2 moves on to how to use the Google toolbar and the wide range of tools available, including Google images, maps and news, as well as group usage — all designed to make searching faster and safer.

The first two parts are aimed at the majority of ‘googlers’, and much of the information will help in improving quality of searching. Part 3 is, however, only for those with a website to maintain. It shows how to get the site known, advertise and attract advertisers. The final part is devoted to the use of Google’s web-based email system Gmail. For anyone considering a change of email-service provider it is worth studying.

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Opinion

In the technology section this month

On this month’s topic data security:

Opinion: Protegrity’s Mike Howse on the security of the National Spine page 24–6

Technology in action:
Durham County Council NHS Partnership page 27

Also in this issue:

Case study: Royal United Hospital, Bath page 28–9

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LastBytes page 40

Technology topics for the next two issues are systems integration (April) and telecare (May). Please send articles, case studies and product news for inclusion to editorial@bjhc.co.uk

Security matters

Mike Howse, UK Managing Director of data security specialist Protegrity on ensuring the integrity of the National Spine

In 2005, when rollout of the NHS patient records database began, Kingsbury-based GP Dr Paul Thornton warned of the potential abuse of the new system: “The problem is that once the information gets on the NHS spine, there is a very real threat that this information could go all over the place”, he said.

Confidential personal information, centralised for efficiency and collaborative analysis, is a prime target for unintended distribution and, worse, for criminal misuse. As well as ensuring the (appropriate) availability of any information that comes into its possession, an organisation must take care to protect this information against unauthorised use or disclosure and ensure compliance with any security policies by the system’s workforce.

There is an urgent need for implementing system-wide database-access controls in the NHS (see What are access controls? below), coupled with strategically implemented encryption. Centrally managed, this provides the most compelling solution to the problem of holding patient records and information securely.

Data encryption

Encrypting data is an important tool when it comes to keeping patient information safe. IT security professionals must not only take care to establish rigorous security policies but they must consistently promote them and regularly audit their effectiveness.

The technical operations that encrypt ‘cleartext’ data (see jargon buster) — eg a database column, a radiology image file, crucial medication histories or family history data — ‘lock’ the information in a mathematical scramble that is profoundly difficult, if not impossible, to restore to its original state. Once granted entry by an IT security policy that defines authorised use, however, legitimate users of the information, and computer applications identified as germane to NHS objectives can gain access to the data in its original format. The decryption of the ‘scrambled’ content or application occurs transparently when an encryption key ‘unlocks’ the seemingly random data tangle and presents the now readable information.

Also, best practice in security administration dictates that there be explicit separation of roles and...
determine the appropriate level of security spending were developed before state entities had the responsibility to protect personal, intimate, healthcare information.

The need for cultural change

Even as more healthcare organisations develop increasingly detailed security policies and hire compliance officers, security managers continue to report that the regulations and security policies are not translating into behavioural change. If anything, security managers report sporadic enforcement of security policies.

Achieving data security

For NHS managers, particularly those involved in web-based transactions, securing the information resource means network firewalls at the perimeter, defending internal IT processes from outside attack and other malicious behaviour. Some of these firewalls offer rudimentary network protection for data while in transit. More sophisticated web-application types of security actually inspect the data itself to determine if it is what the internal client applications expect to receive. These kinds of data protection are generally understood — hospitals and surgeries use network firewalls already, they are moving toward a greater appreciation for the web-application type today.

How about the data inside the firewalled perimeter? Internal staff access files of all types and use applications that call on information in their day-to-day operations. Now and in the future, more staff, and third-party service providers, need access to this information while working remotely. Data encryption is the most reliable means of protecting this data and controlling who gets to use it, while making it available to the appropriate people.

It is central to NHS objectives to know what data and what applications require the greatest protection and control, and very often the amount of data, its value and its location are unknown. Once an organisation knows what to protect and how to comply with applicable regulations, it can implement the steps required to meet the actual requirements of the regulations.

With so many privacy and compliance regulations overlapping in protecting data, and because spine managers recognise the broad spectrum of legitimate

What are access controls?

Access controls are software or hardware tools that stop people using electronic systems unless they have permission. Everyone who works in an office has basic access controls on their network (usually a Windows screen demanding username and password). Most people also have a swipe card that gets them through the doors of their building.

System administrators have three basic means of imposing access controls. One is to base restriction of access on something people do or don’t know (e.g. the password); the second is based on something the user does or doesn’t possess (e.g. a magnetic card or tag); the third is based on something the user is or isn’t — a photo of their face or a scan of their iris or thumbprint. These three modes can be combined to provide any required level of security.
potential users accessing patient data, it would be wise to follow the recommendations below:

**Tips for protecting data**
- Always focus on protecting the data, not just the infrastructure, and not simply adherence to regulation.
- Identify common technologies for achieving best-practice information protection. Data encryption, identity management, message archiving and policy management tools come into play for a wide range of NHS privacy requirements.
- Use standard language and definitions to convey the need for NHS regulatory compliance. When the same security ‘language’ is used throughout the organisation, the overall results are more thorough acceptance by staff and partners, and a more global understanding of goals.
- Investigate rule sets used by other organisations involved in the handling of large volumes of confidential information. The Payment Card Industry Data Security Standards and Open Web Application Security Project are examples. Sound models for data security, and responsibility matrices for the processing of sensitive data have been developed and implemented in private industry worldwide. Why not examine their applicability to the NHS?
- Clean up the data 'toxic waste dump' by deleting low-value/high-risk data, if permissible, and actively reconcile conflicting regulations.
- Develop a ‘penalty matrix’. Though it may seem distasteful, publish throughout the enterprise a table of security behaviours that are unacceptable in employees dealing with sensitive data. It should also include what action will be taken against offenders.

### Jargon buster

**Cleartext data** The form of a message or data which is transferred or stored without cryptographic protection (and thus requires no special software to be read).

**Encryption** Also referred to as scrambling. The process of obscuring information to make it unreadable without special knowledge or technology. Now used in protecting widely used systems such as Internet commerce, mobile telephone networks and bank automatic teller machines.

**Firewall** An IT security device which is configured to permit or deny data connections set and configured by the organisation’s security policy, with the aim of controlling traffic between computer networks with different zones of trust. Can be hardware or software-based.

**Open Web Application Security Project (OWASP)** An online initiative dedicated to finding and fighting the causes of insecure software. Founded by the not-for-profit charitable organisation The OWASP Foundation.

**Policy management tools** Active policy management is a business-oriented way to manage the many risks inherent in electronic communications efficiently and effectively. These risks range from non-compliance with various regulations to the leakage of intellectual property and to inappropriate or offensive employee behaviour.

**Payment Card Industry Data Security Standards** Set up by the PCI Security Standards Council — an open global forum for the ongoing development, enhancement, storage, dissemination and implementation of security standards for account data protection — the PCI Data Security Standards help enhance payment-account data security, creating a unified, global system that is more accessible and efficient for all stakeholders — merchants, processors, point-of-sale vendors, financial institutions and payment companies alike.

Then everyone will take security and regulatory compliance that much more seriously.

- **Regard the security rules and regulations as an ongoing process, not just a huge panic to get things in order a week before the compliance auditor comes in.** NHS compliance officers should continually ensure that processes are adhered to and that staff awareness programmes are in place for regular education.
- **Remember that liability for data breaches cannot be outsourced.** Business partners and outsourcing service providers may be a ‘black hole’ for sensitive-data handling. Review third-party processor contracts, and implement a partner/service provider evaluation process.

### A system-wide policy

The patient-record system is a valuable national resource for the healthcare of individual citizens, as a data resource for preventative care regimens and medical study, and as a potential foundation for new treatment techniques giving enhanced quality-of-life. It is also a system used by humans and hence subject to unintentional misuse as well as deliberate abuse. By identifying and eliminating practice redundancies, and by employing a common set of automated policies and technologies, a value-based culture of data security will protect this resource while allowing it to be used most efficiently and beneficially. System-wide data-security management is vital for its success.

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Mike Howse, UK Managing Director
with data security specialist Protegrity.
Durham County Council (DCC) and local NHS provider organisations recently formed a partnership to strengthen and streamline their ICT operations with the ultimate aim of increasing efficiency and productivity and reducing purchasing, installation and administration costs.

Once the NHS users started to use applications within the Durham County Council network, however, it quickly became apparent that, owing to an increase in traffic caused by the partnership, the initial single-server solution was struggling. Allowing external access also brought additional threats to the network, which made security a higher priority.

Although both sectors had firewalls protecting their connections, there was a clear requirement that a minimum number of ports be opened so that potential security threats were minimised. This would in turn make administration and management simpler and would be easier, was chosen.

To keep procurement costs low, the Council initially considered using open source software. Installing it, however, would have been complex, and it would have required extensive customisation. This in addition to a tight timeframe meant a different approach was required.

Another UK local authority had used AEP Networks’ Netilla Security Platform (NSP) successfully for some time, and so the Council decided that this was the solution. “We found that the NSP integrated well into our existing network, which meant that time and resources allocated to administration could be significantly reduced”, said Keith Hollins, DCC’s Infrastructure Support Manager. “The AEP solution also turned out to be much more cost effective than the proposed open-source solution.”

SSL VPNs such as AEP’s are now emerging as an alternative to IP security (IPsec) VPNs (see jargon buster). Well regarded for their reliability and stable,” said Keith Hollins. “Even with the growing number of users, however, there has been no performance degradation and the AEP solution has proved both reliable and stable.”

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Data security

Open-source software Any computer software the source code of which is available under a licence that permits users to study, change and improve the software and to redistribute it in modified or unmodified form.

IPsec (IPsec) A suite of protocols for securing Internet protocol (IP) communications by authenticating and/or encrypting each IP packet in a data stream.

Virtual private network (VPN) A private communications network often used within an organisation, or between organisations, to communicate confidentially over a public network.

Web client Otherwise known as a web browser.
ABSTRACT

The Royal United Hospital, Bath’s histopathology team works under intense daily pressure, analysing tissue specimens for the diagnosis, monitoring and treatment of a wide range of diseases. Due to the nature of the work, it is crucial that all reporting is undertaken as efficiently and accurately as possible. Historically, medical staff at the department dictated their findings onto tapes, which were then transcribed by a team of secretaries. Not only did reports take days to be produced this way, but tapes often had poor sound quality or got broken, mislaid or accidentally erased. Urgent dictations, meanwhile, could not be prioritised. After careful research, the department invested in a new digital dictation system and that can now be transcribed quickly and efficiently, creating accurate reports and documents in a significantly shorter time.

Digital dictation speeds histopathologists’ reports/reporting

The Royal United Hospital Bath NHS Trust provides acute treatment and care for a catchment population of around 500,000 people in Bath, and the surrounding towns and villages in North East Somerset and Western Wiltshire. The Trust occupies a 52-acre site about 1½ miles from Bath city centre; it became a NHS Trust in 1992.

The hospital’s histopathology team focuses on analysing tissue specimens for the diagnosis, monitoring and treatment of a wide range of diseases. The team works under intense pressure on a day-to-day basis, running to tight deadlines in stressful situations. Because of the nature of the work, it is crucial that all reporting is undertaken as efficiently and accurately as possible. As a result, medical staff in the department dictate their findings and these are then transcribed by a team of secretaries.

As was the case in many other NHS trusts, the Hospital faced the following challenges when producing reports and documents:

• they took days to produce;
• doctors dictated onto insecure analogue tape dictation machines;
• tapes got lost, broken or were accidentally erased;
• poor sound quality led to inaccurate transcriptions;
• tape recordings could not be integrated into electronic patient record systems;
• urgent dictations could not be prioritised; and
• document creation was reliant on the physical location of staff.

The solution

In 2003, the department began to explore how they could produce
reports faster, more accurately and more securely and, after considerable research, it chose a new digital dictation system called WinScribe.

The software was installed in April 2003 and is currently used by five secretaries, one post-mortem room, six consultants, one specialist registrar and one laboratory manager.

On the radiology system, staff have two telephone ports, which enable authors to dictate, using any touchtone telephone or microphones with barcode scanners attached.

“The WinScribe software seemed simple to use and certainly looked as if it would save the department a considerable amount of time and money”, said the hospital’s Laboratory Manager Lucinda Payne Johns. “Our main concern is providing the best possible service to our patients whether directly or indirectly. Being able to transcribe quickly and efficiently means that we can provide our results significantly sooner than before.”

 SRC will be exhibiting at stand A6 (and demonstrating the latest WinScribe digital dictation software) at the forthcoming Healthcare Computing conference and exhibition in Harrogate (19-21 March).

Jargon buster

Histopathology A field of pathology that specialises in the histological study of diseased tissue. It is an important tool of anatomical pathology and is used for accurate diagnosis of cancer and other diseases.

Digital dictation A method of recording and editing the spoken word in real time within a digital audio format. Offers several advantages over traditional cassette tape-based dictation: the user can instantly rewind or fast forward to any point within the dictation file to review or edit. The random-access ability of digital audio allows insertion of audio at any point without overwriting the following text. Dictation files can also be transmitted electronically, by wide area network (WAN), local area network (LAN), email or telephony.

Silver pyjamas trialled for MRSA

Pyjamas and bed linen made with silver cloth are being trialled in a hospital to help combat the MRSA superbug.

Experts at Barts and The London NHS Trust hope to prove that silver can be used to clear MRSA on the skin and thus protect vulnerable patients.

The specially created fabrics will be used at the Lister Hospital in Stevenage, Hertfordshire, over the next year.

Consultant microbiologist Dr Peter Wilson said a successful trial “would transform the way we tackle certain infections, particularly MRSA”.

MRSA is a bacterium that can live completely harmlessly on the skin of healthy people but can lead to serious infection if it enters the bloodstream.

“Silver is known to be a very efficient agent against infection and also very safe”, said Dr Wilson. “These trials will mean we can prove its effectiveness.”

He said the metal was already used in medical plasters and washing machines so this was the next “logical step”. It would also help cut costs, he said.

More than 300 people who have tested positive for carrying MRSA on their skin will be recruited for the trial, which began last month (February). Half will be given silver-lined pyjamas and linen while the rest will receive standard hospital gowns and bedding. The results of the two groups will be compared to see if the silver materials led to increased MRSA eradication.

It is hoped a second trial will then be run at The Queen Elizabeth Hospital in Woolwich, southeast London.

“Patients will not receive any additional antibiotics or treatments to remove the MRSA from their skin, so it is hoped the tests will reveal the efficacy of the silver option.”
Teleradiology resolves workflow issues

The NHS and private sector is fast moving towards a filmless environment with the introduction of picture archiving and communications systems (PACSs) in all hospitals and clinics. Developing films is costly and, as more hospitals request images and reports in digital format for referrals and review, CDs are fast replacing film for transfers.

Loading these images onto their PACSs has, of course, added to radiology departments’ already heavy workload. Even the query/retrieve function (see jargon buster, below) adds additional workload in loading the images onto the PACS, retrieving just images and not the associated radiological reports.

Portsmouth Hospitals Trust (PHT) had this common problem. Like many NHS trusts, some PHT services were shared across other local hospitals. This meant a particularly high volume of images needed to be imported into their PACSs. In PHT’s case, it was orthopaedics shared across Royal Hospital Haslar (RHH). “Inevitably, many of our patients had key radiology images on the wrong PACS system at the time of surgery or a clinic”, said Grant Shaw, an orthopaedic surgeon at PHT.

In 2005, a new independent-sector treatment centre (ISTC) was built at Portsmouth’s St. Mary’s Hospital, compounding the problem. Patients at the ISTC were referred there from various sources, including their GPs. Once imaged at the new site, the were needed at PHT. Each of these needed to be imported into the PACS, which required a corresponding order in the radiology information system (RIS), as well as matching the patient administration system (PAS) patient IDs to those used locally at PHT.

Orthopaedic clinics at Royal Hospital Haslar saw approximately 120 patients a day, each of them imaged on RHH’s Agfa PACS. The sheer volume of manual work required meant that it was not possible to view the images taken at RHH on the Portsmouth Hospitals Trust’s GE PACS. Having the image in the PHT PACS was, however, a necessity, to continue existing work practices such as desktop integration, voice recognition and orthopaedic templating.

The result was that RHH had to provide films for immediate use at the orthopaedic clinics, and surgeons had to compare film against soft copy. And the surgeons couldn’t template on their PACS for RHH images either. One could request individual patients be transferred (where RHH and PHT system administrators would work around the lack of integration manually). But the process was so onerous that routinely doing this for all patients was impossible.

The Trust decided to implement a new system — Cypher IT’s bbRad, a decision that saw immediate benefits.

The bbRad system integrates the DICOM images from RHH and the ISTC into PHT’s PACS, as well as automatically creating the corresponding order on the RIS, and of course entering the report into the RIS. After thorough checks
against the PAS, bbRad automatically updates the DICOM details to use the local patient identifier, and bbRad also ensures that, as a ‘foreign exam’, it won’t be double-archived to the data centre, nor cause double counting of RIS activity. The system can adapt to meet the specific workflow requirements of all sites, and has removed manual intervention by radiology staff. Perhaps most importantly, all the benefits the PACS brings are still available, even when working with remote exams.

“bbRad provides us with seamless, near real-time, transfer of images between the sites, thus realising all the PACS advantages we had hoped for”, said PHT’s Grant Shaw.

“The system’s fundamental benefit for us has been in sorting out workflow in these teleradiology transfers”, said PHT’s Head of IT Projects and Development, Philip Scott. “It has reduced manual intervention for both sender and receiver. It has also improved turnaround time for clinicians and reduced the cover needed out of hours from the system administrator. For us, it is also vital to be able to link to the ISTC for a range of diagnostic images and, in time, we may expand its use to referrals between local NHS trusts.”

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**Jargon buster**

**DICOM (Digital Communications in Medicine)** A standard for handling, storing, printing and transmitting information in medical imaging. DICOM enables the integration of scanners, servers, workstations, printers and network hardware from multiple manufacturers into a picture archiving and communication system (PACS).

**ISTC (independent sector treatment centre)** Privately owned treatment centres contracted within the English NHS. Normally co-located with NHS hospitals, they perform common elective (non-emergency) surgery and diagnostic procedures and tests in the same way as NHS hospitals.

**PACS (picture archiving and communication system)** In medical imaging, PACSs are computers or networks dedicated to the storage, retrieval, distribution and presentation of images. A PACS replaces hard-copy based means of managing medical images, such as film archives. It expands on the possibilities of such conventional systems by providing capabilities of off-site viewing and reporting (distance education, telediagnosis). Additionally, it enables practitioners to access the same information simultaneously.

**PAS (patient administration system)** One of the basic components of a hospital information system, which records the patient’s name, home address, date of birth and each contact with the outpatient department or admission and discharge.

**Query/retrieve function** This mechanism enables a workstation to search for a patient and then retrieve that patient’s images from a PACS or another workstation.

**RIS (radiology information system)** Used by radiology departments to store, manipulate and distribute patient radiological data and imagery. The system generally comprises patient tracking and scheduling, result reporting and image tracking capabilities.

**Soft copy** An x-ray or other radiological image viewed on a computer, as opposed to being on a sheet of conventional film, i.e. ‘hard copy’.

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In under five years there will be 10,000 micro sensors for every man, woman and child on the planet. More than 8bn processors are being switched on each year now. The great majority of these are not in computers, but in embedded devices. Many are tiny: some are smaller than a 5mm cube, running on operating systems like TinyOS that can operate in 1Kb of memory.

With all this computing power, both on our persons and in our surrounding spaces, the idea of constant personal health monitoring is fast becoming reality. Researchers are working to tie together networks of these sensors, whether wearable or ambient monitors in the home or the public space. They plan to connect up these devices to servers running artificial intelligence programs that can remind people of medication, record vital signs, scan for suspicious moles, and remind the incontinent to visit the lavatory.

The earliest beneficiaries are likely to be the elderly. Especially those suffering from cognitive impairment such as Alzheimer’s and Parkinson’s. Georgia Institute of Technology has devised a ‘gesture pendant’ that can detect and assess the tremors and loss of control that accompany these conditions.”

As the time has advanced, wireless technology has come a long way. "If you had walked through London 10 years ago, you might have come across a street sign with a red light. "In that case you probably thought it was a traffic light," says Professor Guang-Zhong Yang of Sydney University. "But it was a smart sign, which was actually a sensor that could detect the shift of a user's hand and relay this information to the traffic authority over a wireless network."

"In future, your living room may do the Times crossword for you while your shirt tells you not to eat another doughnut."
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News in Brief

Noisy phone

A new telephone proving itself popular among the hard-of-hearing overseas has now been unveiled in the UK. The Noisyphone rings at up to 83 decibels — louder than any other phone available in the UK. See www.noisyphones.com for more information.

A step ahead on HL7

Data management software specialist Initiate Systems has become the first vendor to pass all requirements for integrating the health enterprise (IHE) compliance in support of Health Level 7 Version 3 (HL7 V3). HL7 V3 is an emerging standard for exchanging messages among information systems that implement healthcare applications.

PC disposal survey

Firms don’t always dispose of old PCs and mobile devices as securely as they could, according to a new survey by mobile security specialist Pointsec. Many leave the contents available to whoever buys the equipment second-hand, with a large proportion being shipped off to third world countries where the information can be used by extortionists. Far better, says the firm, to reformat the computer hard drive or encrypt the data, making the information inaccessible.

HC2007

Capscan showcases data-capture software

Software systems supplier at the forthcoming HC2007 conference and exhibition Capscan will be showing how healthcare organisations can reduce costs and improve patient care by accurate data capture.

Visitors to stand C47 will receive demonstrations of the company’s products including the award-winning Capscan OnDemand, Capscan Integrity and Matchcode ranges.

According to Capscan, accurate and fast address data capture software, an operator taking an emergency call can quickly and accurately locate or capture an address and access all the vital information required, even when supplied with only a partial address. This results in shorter emergency telephone calls, reduced operational costs and better patient care and records management.

More than 160 UK healthcare organisations, including 25 NHS trusts, choose Capscan to maintain accurate, complete and valid patient address data. HC2007 runs 19–21 March at the Harrogate International Centre.

Cambio announces first UK contract win

Cambio Healthcare Systems, the largest healthcare administration software provider in Scandinavia, is celebrating the opening of its UK headquarters with its first UK contract win.

The firm, which has signed a deal with private healthcare services provider Capio to introduce its flagship COSMIC platform in 21 private hospitals across Britain, has established its UK offices in London.

"With our proven success in Sweden and other Nordic markets, we decided the time was right to enter the UK", said Cambio CEO Tomas Mora-Morrison. "British health practitioners urgently need to better manage the ever more complex tasks associated with day-to-day patient care. We offer a compelling value proposition because we are the only European vendor with a proven track record, and we have delivered on the vision of sharing information across clinical boundaries, enabling significant advances in patient care."

"In the short term, our business strategy is to be the preferred healthcare IT partner for private providers working with the public sector. In the long term we would also like to partner with public providers such as the NHS and Foundation Trusts.”

Stockholm-based Cambio will be exhibiting at stand A12 at the forthcoming HC2007 exhibition in Harrogate, 19–21 March.

HC2007

Software helps patients make healthy choices

New risk assessment software enabling GPs to show patients the impact of their lifestyle habit and the benefits of potential changes is being launched across the UK, after successful validation and uptake in GP surgeries and health centres in Essex.

The Laindon Survival Model, created by Dr Chris Martin, a GP at the Laindon Health Centre in Essex, is being promoted by Health Enterprise East (HEE), the NHS Innovation hub for the East of England.

The Laindon Survival Model uses the Framingham risk equations along with risks of death and disease obtained from UK mortality and health statistics.

Risk factors assessed include: smoking vs non-smoking, systolic blood pressure, diastolic blood pressure, diabetes, left ventricular hypertrophy, total cholesterol, high density lipoprotein and age. These factors are then utilised to project the probability of an individual’s survival over a lifetime.
Telecare provider Tunstall is heading up a €12 million telecare project aimed at supporting older people in their own homes.

The partly EU-funded programme, called SOPRANO (Service Orientated Programmable Smart Environments for Older Europeans), aims to develop affordable, smart-IT-based assisted-living services to promote independence in older people, improving quality of life.

The project, which will run over 3½ years, combines the expertise of over 20 partners from six European countries, including university research institutes, public bodies and industry experts, and will demonstrate how telecare technology, IT and mobile communications can be harnessed to develop new community-based models of care.

The research will seek to develop new ways of employing assistive technology, telecare and telehealth solutions in users’ homes. It will also investigate the motor, sensory and cognitive difficulties experienced by many older people and explore the most effective vision, voice or sensory-based means of communicating with users.

“Against a background of accelerating demographic ageing across Europe, the latest telecare and telehealth solutions will play a pivotal role in helping relieve some of the growing pressure on healthcare providers”, said Mike Hodges, Research and Development Director at Yorkshire-based Tunstall.

Clinical Solutions is due to launch its new system for the management of long-term conditions (LTCs) at the Healthcare Computing conference and exhibition (HC2007) this month.

By placing patients’ needs at the heart of the service, the case management and decision support software enables GPs and nurses to support care of patients with LTCs more easily.

When integrated with telemonitoring devices, it allows clinicians to support and advise patients on helping relieve some of the growing pressure on healthcare providers”, said Mike Hodges, Research and Development Director at Yorkshire-based Tunstall.

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**HC2007**

**New system for long-term conditions**

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**LE12m project to support independent living**

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“Against a background of accelerating demographic ageing across Europe, the latest telecare and telehealth solutions will play a pivotal role in helping relieve some of the growing pressure on healthcare providers”, said Mike Hodges, Research and Development Director at Yorkshire-based Tunstall.
Route-scheduling software frees up nurses

Nurses working for a Swedish home-help service can now spend 40% more time caring for patients thanks to a logistics program from the UK.

The route-scheduling program, LogiX from Halesowen firm DPS International, has enabled nurses working for the service, called Rora, to spend 25% less time on the road, dramatically reducing costs and increasing efficient working time by 40%.

DPS International CEO Paul Palmer says healthcare organisations in the UK could learn a lot from the Swedish healthcare experience: "Experience from other businesses who work within the logistics field shows that the results achieved with vehicle-routing software are not always taken seriously as they seem too impressive. Now that the new planning system has been successfully integrated into the daily work, and they've actually seen the benefits, they don't want to go back to the old way of planning."

Bradford chooses eClipse

Bradford Teaching Hospitals NHS Foundation Trust has become one of the first trusts in the country to go live with a brand-new maternity system.

The system, called eClipse, means that clinical areas of the maternity unit at Bradford Royal Infirmary are now equipped with computers used by clinical staff to record care. The initial implementation has been in the delivery suite and it is now used when women are in labour.

"The new system means that there will be a huge reduction in paperwork and duplication of records", said Dawn Jankowicz, Midwife Project Manager at the Trust. "Eventually paper notes will be completely phased out. "The new system will also help us collect research data for our 'Born in Bradford' research project, which will benefit the study enormously."

Further stages of the project will follow with the Huntleigh Healthcare maternity system being linked with fetal-monitoring machines and antenatal care records going live. This will mean that community midwives are equipped with laptops so they can view and add notes, while being linked in to the hospital system.

Home Telehealth teams up with WebVMC

WebVMC, US-based developer of the RemoteNurse telehealth system that enables 24-hour virtual medical care for remote disease management, has entered into an exclusive partnership with UK supplier Home Telehealth Ltd.

Home Telehealth will distribute WebVMC’s software-based telehealth monitoring product in the UK and EU countries. "We selected WebVMC as we feel it is clearly the ‘best of breed’ technology available in home healthcare monitoring, empowering those with long-term conditions to do more to care for themselves", said Peter Range, CEO of Home Telehealth. "Their programme is user-friendly and easily adaptable for use in multiple settings via a variety of IT platforms."

WebVMC’s expansion into international markets will assist HTL in its efforts to provide telehealth solutions with a strong emphasis on patient education and empowerment, so that people are fully informed about their condition and better able to manage it. Home Telehealth has offices in Wales and England. See www.hometelehealthltd.co.uk

EPR for Liverpool walk-in centres

Electronic patient records have replaced paper-based systems at all walk-in centres in Liverpool, thanks to a product from software systems provider Clinical Solutions.

The new solution, which also provides clinical decision support for triage nurses, will enable Liverpool Primary Care Trust to transfer medical records onto a central database to be viewed and accessed by all four of the city’s walk-in centres.

This will enable staff that work at the centres to access reliable patient data immediately and be far more responsive to patients’ needs.

The decision to extend the system, previously installed at two of the sites, was taken after the Trust realised the considerable benefits it was bringing for both staff and patients. "The expansion of the technology across all four walk-in centres improves the availability and speed of access to information, enabling staff rotation", said Caroline Rand, Head of Information Management and Technology at the Trust. "The decision-support element provides a valuable resource and along with the electronic records will help us to reduce queuing time by directing patients to where they will be seen quickly."

The system will be dual password-protected and user access will be restricted to only the most relevant staff, to safeguard patient confidentiality.

Clinical Solutions has offices in the UK, USA and Australia.
The eclipse™ maternity information system (MIS) has been developed to provide an all embracing solution to documenting a woman’s complete obstetric career, from referral of her first pregnancy right through to her most recent obstetric event.

With a high degree of user flexibility, the eclipse™ MIS software suite comprises four modules, each of which can be run separately or can be integrated to provide a total care environment. This provides total continuity of care from the first booking visit, all aspects of antenatal care, including home tele-fetal monitoring and ultrasound scan viewing & annotation, right through to comprehensive labour management, post-natal, neonatal and discharge information.

eclipse™ MIS has been developed using the latest Microsoft .NET technology platform and provides a whole raft of features & benefits.

- Flexible, user-configurable & easy to use
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- Antenatal, Fetal Medicine & Neonatal assessment
- Delivery & Anaesthetic Procedures
- CTG data collection, viewing & archiving
- Postnatal Procedure
- NN4B birth registration
- Links to PAS, EPOC, PACS & Child Health systems
- Support for community based care
- Powerful reporting & research tool.
Secure-IT solution from BMS improves work-life balance

Following a successful pilot, from next month, 75 NHS Education for Scotland staff members will be working flexibly from a variety of locations, thanks to a new Secure-IT virtual private network (VPN) broadband solution from BMS.

The NHS organisation, which has a remit of delivering Scotland-wide training and education services to NHS Scotland staff, wanted a solution that would support flexible ways of working including home working and would also conform to the NHS code of connection.

The introduction of the Secure-IT solution initially enabled 25 users to work remotely and to securely access the NES network including access to email, diary, personal filing systems, intranet and applications. Since then, however, the solution has proved so popular that there is now a waiting list of potential users, with further expansion of the service likely during 2007.

“The key benefits of the BMS solution are that it’s remarkably easy to set up and the security tokens are very user friendly”, said Dennis Connolly, IM&T Manager at NES. “It is an important asset in our plan to continue to roll out flexible working practices across Scotland.”

A recent staff survey showed that staff were delighted with the service, with many reporting that it had helped improve their work-life balance.

BMS will be exhibiting at stand A85 at the forthcoming HC2007 conference and exhibition at Harrogate (19-21 March). See www.bms-it.co.uk

Crawley centre chooses Adastra

Crawley Urgent Treatment Centre has become the latest in a long line of NHS walk-in and urgent-care centres to choose Adastra Software as its system supplier.

The new centre, based at Crawley Hospital in West Sussex, has elected to network into the existing Adastra system used by Thamesdoc, the operational hub service that provides urgent and out-of-hours care services to Surrey and parts of Hampshire and West Sussex.

The centre believes that use of Adastra as a common case-management system will greatly improve continuity of care. The Thamesdoc system not only extends across all local GP out-of-hours services, its Adastra database also links in with NHS Direct and GP surgery systems.

According to Adastra, over half of all NHS walk-in centres and many urgent-care and treatment centres are now either using or planning to use the software to manage their operations. Nearly all of these services, says the supplier, have elected to do so by becoming integral with the wider urgent care environment established by operational hubs such as Thamesdoc.

Adastra Chief Executive Lynn Woods underlines the appeal of using a common system to drive forward with service integration: “Urgent-care centres need shared access to a common IT system which is so versatile it can support processes that are user-definable right down to a particular case type, user identity or location. That is what we have achieved.”

The new service in Crawley follows in the footsteps of a similar facility in Redhill, which started work in 2005, also networked into the Thamesdoc system.

Ashford, Kent-based Adastra will be exhibiting at stand C10 at the forthcoming HC2007 exhibition in Harrogate (19-21 March).

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Training for PlayStation medics

A training system has been developed for doctors raised on computer games on consoles like PlayStation.

Two broadband virtual-learning packages have been designed by York-based firm Medcom to help newly qualified doctors learn basic skills and surgical procedures. Doctors can watch the procedures in 3D and look up notes to help them prepare for exams or a real-life operation.

The Royal College of Surgeons said it hoped the programme would be a “useful adjunct” to training. Changes to the hours trainee doctors are allowed to work mean there can be less time to practice techniques so hospitals and tutors are looking at supplementary ways of passing on information.

The package outlining foundation skills, which is being recommended by the RCS, demonstrates procedures such as lumbar punctures.

The RCS has approved it as part of the foundation training programme undertaken by trainee doctors in the first two years following medical school.

“These packages will help ensure that the PlayStation generation of doctors and surgeons are as confident with their instruments as they are with their consoles”, said Medcom’s Warren Hobden.
Buckinghamshire adopts Supportworks

Buckinghamshire Hospitals NHS Trust is using Hornbill Systems’ Supportworks ITSM service-management solution to manage IT support calls.

The 40+ strong IT team uses the system to provide support for all incidents and service requests from Trust staff, while ‘seamless ticketing’ interfaces with the local service provider (LSP), Fujitsu Systems, to pass on calls to the LSP when needed.

The system provides the IT Infrastructure Library ‘best practice’ required for interfacing with the LSP, as well as integrating into existing Trust systems such as Active Directory and SMS.

Supportworks was easily customised to communicate with the LSP using the Open Telephony Interface. Seamless ticketing enables the Trust support desk to gather the CfH minimum dataset required if a call is to be passed to the LSP for resolution. All calls regarding the new CRS are triaged locally before being referred to the LSP. Once the LSP has dealt with the call, data is sent back to the Trust and this data is fed back into Supportworks ITSM for the call to be closed.

HC2007

Cardiff and Vale adopts in4tek’s Paris

Cardiff and Vale NHS Trust has chosen Paris, the community healthcare and social care system developed by Altrincham-based in4tek, to unify services across the diverse organisations within the Trust.

The project covers almost all mental health and support services within Cardiff and all community services within the Trust area, including district nursing, specialist district nursing, health visiting, specialist clinics and acute response teams. It also covers community and child health services and child health therapies.

Implementation project manager Peter Landstrom said, “There needed to be a more generic view of the patient and to meet this challenge the Trust decided to create a dynamic single service, to come as close as possible to creating a single patient record across the entire trust and locally within individual services. Our vision for the project is about clinical information. It’s quite simply about providing better clinical information for all staff and the clinicians involved — which benefits the patient, helps staff do their job better and more safely and ultimately it helps improve the service.”

Already 97% of the Trust’s consultants use Paris. For the first time the Trust has a clinical service leading the information rather than information demands leading the clinical practice.

Twenty people need this bed, so why is it empty?

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Ancient scientific tool for sale
A 14th Century scientific instrument uncovered during building work has been given an auction guide price of between £60,000 and £100,000 when it goes under the hammer at London's Bonhams this month.

The astrolabe quadrant — described as the “pocket calculator” of its age and dated at 1388 — was found in Canterbury, Kent, in 2005. The device was used for telling the time, mapping the stars and making height and depth measurements.

The auction house said it was one of only eight known examples in the world today.

Bionic eye implants look ahead
A bionic eye implant that could help restore the sight of millions of blind people could be available to patients within two years.

US researchers have been given the go-ahead to implant the prototype device — called the Argus II — in 50 to 75 patients.

Patients who tested less-advanced versions of the retinal implant, which uses a spectacle-mounted camera to feed visual information to electrodes in the eye, were able to see light, shapes and movement.

“What we are trying to do is take real-time images from a camera and convert them into tiny electrical pulses that would jump-start the otherwise blind eye and allow patients to see”, said Professor Mark Humayan from the University of California. Retinal implants are able to partially restore the vision of people with particular forms of blindness caused by diseases such as macular degeneration or retinitis pigmentosa. Both diseases cause the retinal cells which process light at the back of the eye to gradually die.

Video handsets for hard of hearing
Deaf people could soon be using video mobiles to chat with their friends using sign language.

Video compression tools made by US researchers make it possible to send live pictures of people signing across low bandwidth mobile networks. The system cuts down on the bandwidth needed by only sending data about which parts of each frame have changed.

Many American deaf people prefer to communicate via sign language but this is impossible over current mobile networks, said University of Washington computer scientist Richard Ladner, one of the principal investigators on the project.

The researchers are talking to mobile firms about how to get the technology into the hands of deaf people.

Mobile networks powered by wind
The world’s first mobile phone base station powered by wind and the sun’s rays will soon open in Namibia, following a successful pilot study in Swindon.

“Namibia is a huge country with only 2 million people — to get power to rural areas is very expensive”, said Joachen Traut, an executive at mobile firm MTC, who will run the cell. “You pay £8,000 (approximately £4,210) per kilometre to get a grid power line. And to get on the grid you can wait a year or two to get a power line. We firmly believe we need a solution to go into rural areas and the key is speed — we need a quick rollout,” he said.

MTC has been using base stations powered with just solar energy but will turn to the wind for the first time for the trial in the village of Dordabis, 40 kilometres east of the capital city Windhoek.

On our website this month...
You’ll find more products and services news, case studies and information about forthcoming features on our website at www.bjhc.co.uk
Principal Healthcare Consultant

London + travel - £55,000 to £60,000 + 25% bonus + BUPA

A Principal Healthcare Consultant is required for a challenging opportunity in the London area. My client is a global healthcare organisation with bases on three continents and continually gaining competitive advantage through the imaginative & skilful application of Health Informatics. The successful candidate will have excellent communications skills together with experience of working within 5 areas on the NHS/DHO or international equivalent. The role will see you developing the health informatics strategy and capabilities within IS in order to drive and support business opportunity – the opportunity in question is the introduction and delivery of innovative healthcare informatics products to both private and public sector clients. Having strong experience in information governance would be an advantage but an interest is essential! This is a relatively autonomous role which will see you managing a health informatics team and working closely with business units to develop effective health information management across the Group. To succeed in what is undoubtedly an unusual role with great career potential, knowledge of the NHS IT programme and a detailed understanding of at least one other global healthcare market is essential. You will be able to work independently with a high degree of autonomy and flexibility enjoying the variety that such a pivotal role provides.

NHS IT Implementation Consultant

UK wide - £30,000 to £40,000 + benefits

A seasoned candidate with experience of implementing IT Healthcare solutions to the NHS and private sector is sought by this leading consulting firm, who are well established in the NHS, Connecting for Health Programme for IT in London. Working as an Implementation Consultant, your role will encompass all aspects of requirements analysis and leading the delivery of the solution to the client. You will be responsible for testing and releasing software and preparing related documentation. Although office based in the North West or South East you will be required to work on various hospital solutions across the country. Knowledge of current health informatics strategies and developments is essential. You are expected to offer exposure to one of the leading providers of EPR and PAS in the UK. Career progression is key to this organisation so joining as an Implementation Consultant is a good investment in your future.

Product Specialist, NHS, Clinical Systems

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A Product Specialist with strong background in the NHS or understanding of the CfH (Connecting for Health) programme is required to work across the UK. The successful candidate will have commercial technology skills and will be required to play a pivotal role within a fast growing IT Healthcare Company. This role will see you being home based though you will be required to travel to client sites UK wide. As an Interfacing SME you will have a good technical knowledge of eGate and Rhapsody (or similar) and an understanding of associated data formats, including HL7, XML, ASTM, and DICOM. You will have hands-on experience of developing, planning, monitoring, controlling and delivering interfaces between disparate third party systems. This role will see you developing end-to-end interfacing solutions using either eGate, Rhapsody and/or other integration engine technologies. The successful candidate will have a strong background in the NHS or a very keen interest in the CfH programme. Please note that this role will see you travelling across North West and West Midlands, North East and East Midlands Clusters with frequent visits to client sites.

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An excellent opportunity for a talented Java/JS/EE Developer to undertake fascinating projects in the South-West London area. Join this fast growing Healthcare IT Company and see your career blossom. This role will see you working within a team developing, supporting and maintaining a web based healthcare application based around Java/JS/EE and Oracle 9.2. Experience of using JSP, XHR, Javascript, Tomcat or Apache is desirable.

PACS Manager

Surrey - £40,000 + pension + healthcare + mobile + laptop

PACS Manager is urgently required to manage the Radiology PACS and RIS solution components on a data centre based system and system recovery. This role will see you working within a team developing, supporting and maintaining a web based healthcare application based around Java/JS/EE and Oracle 9.2. Experience of using JSP, XHR, Javascript, Tomcat or Apache is desirable.

Information Consulting Ltd., Gresham House, 53 Clarendon Road, Watford, WD17 1FT.
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Career Opportunities in Health Informatics & CfH

Installation Engineers - Medical equipment

West Sussex (close to Hove) - £35,000 + benefits

An opportunity to work for an IT Healthcare firm a focus on Oncology has just been signed-off. Our client requires 2 Installation Engineers to install the company products at customer sites world-wide (Latin America, Africa, Europe and the Middle East). You will have to prepare technical reports on all installations, liaise with Hospital engineers, physicists and other NHS hospital staff. Having worked in the healthcare IT field is essential but would be advantageous. The successful candidates will have experience of servicing and installing capital equipment such as X-ray machines, CT or MRI Scanners or any related products. You will require basic PC skills (MS Office applications) combined with a degree level education in a relevant subject (Electronic Engineering or Medical Engineering or other). This is a highly client facing role with an extensive amount of travel to client sites anywhere in the world. You will get extra financial rewards and benefits on the top of your basic salary for working away from home on a regular basis.

EPR Project Manager - 18 month contract

West Midlands - £300 - £350/day

A Senior Project Manager with extensive Healthcare IT knowledge is required for work in the West Midlands region. The successful candidate will have significant project management experience within the Healthcare Sector. This contract will see you working for 18 months on the EPR (Electronic Patient Record) and PAS (Patient Administration System) for the NHS Hospital Trust. Our client is looking for somebody with demonstrable experience of full lifecycle management of large projects (experience of successfully delivering at least one IT Programme or Project) and the ability to deal with customers at all levels. The use of MS Office applications and MS Project is essential together with Prince 2 (at least Prince 2 Foundation). Your primary responsibility will be to ensure that the project produces the required products, to the required standard of quality and within the specified constraints of time and cost. This is a contract position paying up to £350/day, there might be some flexibility for an outstanding candidate. A great opportunity to work outside of the National Programme for IT (NPfIT).

Medical Imaging Specialist - DICOM, PACS

West Sussex - close to Gatwick airport - £34,000 + benefits

If you are an Application Specialist with extensive knowledge of DICOM and digital radiography imaging systems we need to talk to you. We need you to join this fast growing company that is making waves in the Healthcare IT sector. The successful candidate will have very good working knowledge of DICOM and will be able to capture and verify any faults and image problems on MRI, X-ray, CT Scanners or Linear Accelerators or medical equipment including PACS (Picture Archiving and Communications System). Not only you should be able to identify and define faults, you should also be able to fix them strongly! Strong software support and IT skills and related field service experience and a minimum of HND/HNC in Electronic and Electrical Engineering or Scientific background is needed. Candidates with Oncology, imaging and medical systems product knowledge are preferred, though ability and potential are really the keys to success.

Radiotherapy Application Specialist

Crawley – West Sussex - £29,000 to £35,000 + benefits

This role will focus on consulting, training, and supporting oncology professionals in the effective use of related software. You will be involved in preparation of the customer to receive training, workflow analysis, remote and classroom training, and assistance in the development of training and application support materials. Radiotherapy background and experience with healthcare/medical applications is essential. Exposure to medical imaging (PACS/DICOM) related applications will be a distinct advantage. Being client facing, this opportunity will require you to travel extensively to client sites anywhere in the world.

For more details about opportunities in a specific discipline or geography, or for an informal discussion about current opportunities in the health informatics arena, please call Veronika in the Healthcare Team on 01923 224481.
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The Capula Healthcare Team