

## **Patient Safety – who cares?!**

**PHCSG Summer Conference June 30<sup>th</sup> – July 1<sup>st</sup> 2009, Chesford Grange**

### **What is it like to attend a PHCSG Conference? One user's experience of the 2009 Conference**

#### **Conference Programme – Day 1 Tuesday 30<sup>th</sup> June 2009**

##### **Welcome and opening remarks – Ian Shepherd – PHCSG Chairman**

Ian welcomed us all and thanked the speakers and organisational team. Amongst the points that he made Ian mentioned that we are now seeing the green shoots of innovation starting to appear again. During the initial days of NPfIT there wasn't a chance to innovate but now ideas based on customer need (outside NPfIT) are coming forth.

##### **Keynote – Information Systems to manage MRSA and C Difficile – Andrew Pearson – Consultant Epidemiologist – HPA**

The HPA is trying to move healthcare into the ultra-safe area i.e. where there is less than 1 fatality per 100,000 encounters. Andrew Pearson took the reporting of C Difficile and MRSA as an example. There used to be voluntary reporting of lab information (via a complex flow of information). In 2004 mandatory surveillance was introduced using a very simple web page. Entire datasets could now be analysed.

In the case of C Difficile they looked at the frequency in two different age groups (2-64 years and 65 and over) by region and found different splits so they introduced a second web page to find out why.

When they looked at MRSA (about 2,000 fatalities per annum) the rates dropped by 80% after mandatory reporting was introduced. It transpired that the rates in hospitals dropped dramatically but the rate in community didn't drop much. There are different risk factors in the community so they introduced a second, voluntary, web page to look at this area.

Looking to the future a US data mining system will be piloted in one Trust soon. It is a real time system with a very simple custom reporting tool. For example one can identify instances of anti-microbial misuse by linking microbiology results to prescribing. Prescribing Ciprofloxacin will activate C difficile with a 10 – 12% mortality rate. He warned of cases where the mother came into hospital with a postnatal infection (neonates have 50% C diff infection rate), and died after taking a single dose of Ciprofloxacin. In the States, 50% of antibiotics prescribed are the wrong drug or wrong dosage. Reducing inappropriate use should reduce drug cost and patient ill health.

Getting accurate, and complete, information is key.

##### **Keynote – Clinical Safety Testing – Dr Leo Fogarty – CfH**

Dr Fogarty gave us an overview of the processes needed in the clinical safety testing of Information Systems. One needs to look at the clinical scenarios, record system and the clinical message (e.g. pathology EDIFACT message or GP2GP) and their interactions. Testing of such systems needs the resources and clinicians capable of doing this. The clinicians need to be able to analyse and document system outputs, classify problems and go round the loop until there are no or negligible problems.

For example, the GP2GP system covers the whole GP record and typically takes three days worth of testing per pair of systems (EMIS to Vision etc.). This includes the different documentation management systems. Note – in England there is no standard for storing meta data.

Clinical safety testing is not about assessing the usability of the system. Rather it is about preserving the functionality for the user without compromising safety. Clinical testers must be multi-skilled – understanding both clinical and technical aspects.

##### **Keynote – BTs approach to Clinical Risk Management – Martin Ellis**

Martin gave a supplier's perspective on clinical risk management. He asked if we should manage clinical risk. Before IT there were legibility issues. IT reduces that and can, for example, do checks on allergies so has reduced risk in some areas but introduces new risks such as a system down. Another example of a risk introduced by IT is poor software where the first line of a radiology report is missing when viewed in another application:

e.g. "There is no evidence of a lump"

There needs to be a systematic process to look at how problems are managed. After years of work BT have identified twelve generic hazards (e.g. service unavailable, confusing user interface). When assessing a requirement one needs to look out for errors e.g. it would be wrong to have a system that recorded an allergy to peanuts and cephalixin and a reaction of diarrhoea and anaphylactic shock but be unable to tell what caused which.

Once a system is live, incidents need to be recorded to build up a hazard register.

### **Patient Safety – well actually we care! – Dr Maureen Baker and Ian Harrison – CfH**

Dr Baker started this joint presentation by telling us the continuing story of National Patient Safety Agency (NPSA) which was established in 2001. She also defined patient safety as freedom from accidental harm to individuals receiving healthcare and a patient safety incident (PSI) as an episode when something goes wrong in healthcare. A report established that safety was not a benefit that drove the National Programme and that there were no formal risk management or safety management systems. CfH approached NPSA to address the issues highlighted by the report and she and Ian were seconded to find standards that could apply to the NHS. The generic standard for safety critical software (IEC 61508) was adopted which means that a supplier must state why their product is safe. The product is then given a clinical authority to release (CATR). Since 2005 no product should have gone out without a CATR. Whilst a product is in development CfH are responsible but once the CATR has been given responsibility passes to the NHS.

Most organisations don't know the number of PSIs e.g. computerised prescriptions have improved legibility, helped with drug interactions and adverse reactions but introduced new errors e.g. if you enter "peni" and get a list to choose from penicillamine may be at the top so you may pick it instead of penicillin (but you wouldn't have written penicillamine).

However safety conscious you are things will still go wrong. The point of a safety incident management system is that when something does go wrong it is identified and "made safe" using the phrase in the sense of the engineering term – to remove the risk (not fix the problem).

She concluded by saying that the NHS is a safety critical industry and that area needs proactive work.

Ian Harrison, an engineer from the avionics industry explained that the NHS is not like most other safety critical sectors as it tends to have lots of regulations in one area and none in another. Most other sectors have measures commensurate with risk and IT safety best practice defined in standards. CfH has borrowed concepts from others. So the NHS has got a "good system at bargain basement prices" by utilising component reuse (not reinventing the wheel).

### **Medical Records and Privacy Law – Chris Pounder – Amberhawk**

Dr Pounder led a question and answer session; he gave us a few questions to think about and discuss.

Q1. Who is in charge of the medical record? Now that things are electronic the situation is more confused. Most of the audience wanted it to be either patient or clinician (or somewhere in between) but the SCR is clinician / Secretary of State. Similarly with the Data Protection Act and data controller. It is possible to have a common data controller but one needs shared understanding and standards. The Secretary of State has indicated that he is a data controller.

Q2. We all assume that the medical record is confidential but.... Duty of Confidence is common law and can arise expressly or by implication. There are no hard and fast rules but rather depends upon the circumstances e.g. name and address is not usually confidential but could be in a witness protection situation.

One can put aside the obligation of confidentiality if:

Required by statute (statutory instrument) e.g. notifiable disease

It is in public interest

e.g. I think Fred is a terrorist – may I look at his records? – yes

e.g. I want to review all your records to find terrorists. May I? – no

There was a case of a vicious stabbing near a hospital and the police asked the hospital for all their mental health records. The hospital said No and fought all the way to the Court of Appeal and won. (The perpetrator was a man from a nearby pub with no mental health history.)

The medical profession makes the decision as to whether it is in the public interest but if someone uses a statutory implement then they are taking the decision away from the GP.

E.g. someone in the audience had been asked by the Secretary of State to complete a questionnaire about a patient. People need to ascertain if things like this are a request or an order (by statutory implement).

## **Is Data Quality a safety issue in sharing patient information? – Dr Mary Hawking – GP**

There are many and varied definitions of data quality yet it impacts on the individual's record and thereby the patient's care so it is very important.

Remember that data is not the same as information and sharing data isn't the same as communicating. For example a referring GP could give the general surgeon full patient data but the surgeon still wouldn't know what the GP wanted to be done for the patient.

This talk focussed on the data quality of structured, coded information held electronically be they the record of prime entry, summary records (e.g. English SCR, virtual ones like EMIS Web in Liverpool), shared such as GP2GP.

To date only GPs have had any data accredited and not all practices took part in the IM&T DES whilst others failed data accreditation. So we don't know what the quality of data is like. Arguably data accreditation doesn't automatically mean that the data is fit for sharing because data is kept for ones own purposes and may not suit the purposes of the other organisation. For example, of the 140 records received via GP2GP 16 were judged hopeless by Mary's note summariser.

### **Discussion - "Over alerting" – Everyone complains about it. What can we do about it?**

Three people led this session.

David Gerrett, Senior Pharmacist who looks at safe medication practice and medical practices.

David started by reminding us that errors will happen; some are human factors and mainly unintentional. Systems need to make it easy to do the right thing and alerts need to come at the "slip up" stage.

For example when assembling medication one should take the information off the prescription, not off a standard label. To improve matters the layout and font of labels has now been specified. If there is a barcode on the prescription it can be scanned giving the information for the label. The bar code on the product is then scanned and an alert is given if the product specified on the script isn't the product just scanned. This reduces the chances of putting the label on the wrong medication.

Another example is the methotrexate alert. There has been good compliance because GPs understand the reason for it. They are now working on look-alike or sound-alike drug names such as glibenclamide, gliclazide and gliimepiride. Different parts of the drug name will be in uppercase.

When considering the problem of over alerting one needs to categorise and prioritise. Restrict those that need an acknowledgement to the most serious – and put that information in an audit trail.

Malcolm Duncan, a healthcare informaticist with First DataBank Europe

This was the first time that I heard the phrase "AQOFalypse now". This was used because of the plethora of codes around statins in QOF for example. Coding problems arise in several ways. For example there are several codes that can be used when the patient has pneumonia or an allergy to aspirin. Sometimes the granularity of the code chosen causes complications e.g. 14F.. (history of skin disorder) implies that the patient has all skin disorders underneath it so alerts would be raised for drugs that are contra-indicated in both psoriasis and eczema.

Duncan Enright, Publishing Director with BNF

The BNF is not just a drug guide; it aims to reduce errors from incorrect use, reduce wasteful prescribing and make it easier for clinicians to make the right decisions. It includes serious but uncommon interactions along with those that are not serious but are common.

The data in electronic BNF should work in harmony with clinical systems.

Glyn Hayes, who chaired this session, mentioned that the prescribing work described was aimed at secondary care. Primary care should have some input to the work as there is thirty years worth of experience and alerts have been in use for some time. It would be interesting to know if there are differences in the errors between primary and secondary care.

There then followed a question and answer session. One idea was that systems should "learn" about an alert e.g. if the same GP uses drug on same patient – does the alert need to be repeated? There is ongoing work on the common errors e.g. 82 drugs with similar names and the 400 or so relating to formulation.

Glyn summed up by saying that the discussion had been useful although no conclusions or recommendations had been reached. However he would take up the suggestion of a consensus forum to look at the problematic 400-500 drugs with the BCS.

That evening I decided to take advantage of the glorious weather and walked through the hotel grounds to the riverbank. It gave me time to think and relax before the drinks at the Terrace Bar followed by the (optional) conference dinner. Erudite conversation plus good food and wine – what a way to end day one!

## **Conference Programme – Day 2 Wednesday 1<sup>st</sup> July 2009**

### **Keynote – Common User Interface – Dr Mike Bainbridge – CfH**

Dr Bainbridge started by explaining the problems of aging population, increasing costs, scarcity of doctors and that we are more likely to move from wellness to illness earlier in life in the future due to lifestyle diseases.

He then defined the Common User Interface (CUI). It is a set of open standards and guidance for a user interface which the NHS has made freely available worldwide. It has built in safety and standards leading to products that are safe, effective and reproducible. The UK is the first country in the world to get this far.

As a demonstration he used the example of an acute admission clerk who would type the presenting complaint in usual English and codes are offered as the user types. The clinician ticks boxes to add the appropriate codes from those offered.

Looking at medicine management one question is how to achieve a cohesive and safe record in primary/community setting and secondary care? They went back to DM&D and dosages. The dose syntax in typical primary and typical secondary settings is different. A framework and rules are established e.g. there are 29 forms defined.

The roll out to clinicians is starting in secondary care because they don't have computer systems comparable with primary care and because their dose based system needs to alter.

Summary – as the world is changing the focus needs to move from acute care to home care. This would mean weighing scales, BP cuff, fitness equipment and other biometric devices in the home. It's important that patients get good quality information. Healthcare needs broadband for patients as well as for clinicians.

### **Keynote – General Practice Extraction Service (GPES) and NHS Information Requirements – Dave Roberts – NHS Information Centre (IC)**

People are expecting more information – patients need to understand their choices. The Information Centre's customers (e.g. PCTs) need to define what information is required. The patient must be an honoured equal partner; informed consent is key.

One needs to decide what "good" looks like – for example patient safety, effectiveness of care, cost effectiveness (not necessarily cost reduction). Apart from gathering the data and generating information (e.g. clinical dashboards) the IC need to follow up to see if the information has helped. It aims to collect operational data at source (so there is no extra burden) then use it for many different things.

The principles of the IC are the patient, patient care, confidentiality and data quality whilst its roles are quality and standards, access and interpretation, data and data collection and delivering solutions. It acts as an honest broker linking data from primary and secondary care. This means that it needs patient identifiable data from both. Once linked the IC will pseudo-anonymise the data.

GPES is an example of their work which Dave Roberts explained. An example from secondary care is the analysis of hospital episode statistics which revealed a data quality issue. The IC will also address patient safety, examples being diabetic retinopathy screening and the Yellow Card system. They have also done lots of work on Information Governance.

### **EPS and Patient Safety – Cheryl Cowley – CfH**

There have been many changes in repeat prescribing since the days of card indexes and receptionists handwriting the prescription for the doctor to sign. Will release 2 of EPS make it any safer?

There are about 1.5 million prescriptions per day in England and this is expected to rise by about 5% pa. Approximately 70% of these are for repeat medication so we need a system to handle them. Release 1 was just technology; release 2 is where people get a gain. Functionality includes:  
Easier electronic repeat dispensing

Electronic cancellation (at any point prior to the drug being dispensed)  
Nomination (of a dispensing contractor by the patient – optional)  
Digital signature

So will we move from repeat prescribing to repeat dispensing? Sign the prescription once for that period (up to 12 months); several issues can be on a single electronic script. (N.B. it is easy to cancel items off.)

For EPS 2 users must have an appropriate role and activity on their Smartcard e.g. independent nurse prescribers need that prescribing activity adding. This is the responsibility of the sponsor (usually the practice).

For patients who have nominated: GP generates the script and signs it electronically, the system picks up the patient's default pharmacy from PDS and the message goes onto the spine. The nominated pharmacy receives the electronic prescription (thereby reducing the need for the dispenser to re-key data – thereby improving patient safety.) It is easier to pre-dispense (if the pharmacy wishes to) as they can draw the scripts down. It is also easier to send details for re-imburement (and less paper to sort). (The pharmacy will need to match their patient to the one on the spine.)

Some doctors are concerned about the loss of control if they move to repeat dispensing. It is easy to cancel (there is a picking list of reasons) and the spine holds the status of the script.

Getting ready – each practice needs to:  
Decide if moving to repeat dispensing  
Organise nomination handling  
Sort out roles and activities on RBAC (role based access control)

### **Patient Reported Outcome Measures – Justin Whatling – Routine Health Outcomes Ltd**

Patients are living longer and healthcare hopes to improve the quality of life yet we only routinely measure mortality. There is an interest in quality of life and quality of care. Patient reported outcome measures (PROMS) are questionnaire type tools to measure a patient's health status. These can be compared over time. There are two main types – health related quality of life (HRQL) and health utility. They can be specific to a dimension e.g. pain scale or a disease/condition e.g. PDQ-39 or generic. Now, using third generation tools, the rating is done at point of care so it needs to be quick and easy to do.

From the health economics point of view it is hard to do a cost benefit analysis so they do a cost effectiveness analysis using Quality Adjusted Life Years (QALY) and look at the cost involved. (One extra year of life at half quality = ½ QALY.)

BUPA have been measuring outcomes at point of intervention using the generic short form 36 questionnaire. Scores more than three standard deviations away are examined and monitored per clinician. The NHS is doing something similar for five surgical interventions.

Justin Whatling's research goes beyond discrete surgical interventions so a case mix analysis will be needed. The objective is to ascertain if the tool is fit for routine use. The "howRU" tool uses the four dimensions of pain/discomfort, feeling low/worried, limited in what patient can do and dependency on others. The patient chooses from a scale of "smiley face" to "frown" for each dimension.

The results are similar to those from Short form 12 for most conditions but there are some, such as back pain, where the results are not similar so extra work will be done in these areas.

During the Q&A part it was explained that patients adapt to their condition so you tend to see step changes in their perception of their quality of life. Also, if a patient has a positive intervention and after it you ask what his/her quality of life was like before s/he answers that it was worse because s/he's realised how bad it was.

### **Standards in record keeping – Prof Iain Carpenter – Royal College of Physicians**

Professor Carpenter, a geriatrician by trade, gave an encouraging talk on standards in record keeping. There are many functions of the medical record. This can lead to problems – for example lots of data is used for specific purposes and the various PAS systems are all different. A solution is to have a single system which is patient focussed and can be used in different contexts. For this to happen there needs to be standards for data capture in specific contexts. This requires professional leadership from the colleges to work on and endorse the standards.

Clinicians, although all trained in the same basics, learn to write in the medical record by example rather than by formal training – so everyone does it differently. This can make reaching a consensus view challenging.

Professor Carpenter has looked at the heading and definitions for acute admissions, handover and discharge. Looking at admissions he polled two groups of 1000 clinicians and asked if they were in favour of a standard proforma – the answer was “Yes”. There was an online questionnaire on the proposed headings and over 3000 responded (overwhelming support). Similarly for handover which is one of the top nine areas for critical incidents.

Everyone (clinicians, suppliers, legislators etc.) has said the project is good. Two documents have been published and the recommendation is that the standards should go into the curricula and continual professional development. See [www.rcplondon.ac.uk/clinical-standards/hui/medical-records/Pages/Overview.aspx](http://www.rcplondon.ac.uk/clinical-standards/hui/medical-records/Pages/Overview.aspx) .

### **Care pathways – peril or profit? – Ian Herbert**

A care pathway is a set of actions to deal with a clinical scenario in a context e.g. asthma in primary care. It should be derived from things such as NICE guidelines and fit the particular organisation.

A pathway may contain recommendations, supportive material (appropriate to the target audience), conditions which must be true (or false) for an action to be started or stopped. If a pathway covers multiple providers then it becomes a “map” for the journey of care.

Care pathways can counter forgetfulness, help ensure best practice, help with training, and ensure consistency. However their limitations include the fact that they generally focus on one topic and it’s not possible to have all the knowledge needed to deal with all the complications that could occur.

There are technical advantages to using IT for a care pathway rather than paper and some evidence that IT increases use of them. However the IT issues centre around data accessibility especially across multiple systems. Data output needs to go to all relevant systems too.

There is concern that use of a care pathway may interfere with the patient – health care professional interaction. This should be guarded against. Remember that they only offer decision support and don’t replace clinical knowledge and expertise.

### **A New Shared Health Service in Liverpool – Kate Warriner and Dr Simon Bowers**

Dr Bowers set the scene by describing health in Liverpool. There is a high CVD mortality, massive deprivation, health inequalities, smokers (with related diseases) and apparently poor access to services. So they decided on a new health service with above average primary care. The idea is for neighbourhood treatment centres and neighbourhood health centres. The service is being redesigned with the focus on primary care. (90 practices, 4 PbC consortia, 7 provider organisations.)

Kate went on to outline the data sharing that is in place. The majority of the practices are EMIS; EMIS Web appears to provide a solution with interoperability with other systems (e.g. INPS, Adastral, ICE) being key.

In secondary care the emergency department clinicians have access to a subset of the GP data (last investigations, allergies etc.). Cardiologists are very keen to share information. The handwritten discharge summaries were poor so they looked at clinical quality and now use ICE to create an electronic discharge summary.

The out of hours services now use Adastral. This searches EMIS Web to see if there is any information for the patient. With the patient’s consent the clinician can see medication, investigations etc.

Community matrons can share the full clinical record for those patients on the matron’s caseload.

Governance needs to be clear and robust. For each service there is a data sharing agreement and a confidentiality agreement that every practice has to sign off. Patient consent is involved in the data sharing agreements.

### **Suppliers forum on clinical systems and safety – a person from each of TPP, In Practice Systems, EMIS and iSOFT**

The final session, chaired by Ian Herbert, was a forum with John Parry from TPP, Alison Young for In Practice Systems (INPS), Gary Shuckford from EMIS and Simon Benn from iSOFT. Ian outlined the “rules of engagement” giving each person five minutes to explain their organisation’s stance on patient safety. This was followed by questions from the floor.

John Parry from TPP started by pointing out that access to records improves care. He also explained that TPP have embraced safety and have a strong team of coders. They are learning new ways of handling high volumes of data.

Alison Young from INPS looked at why INPS “do” safety. They have set up a committee and reviewed all their processes and set up a reporting procedure. They have learnt how to produce reports (patient safety case, closure reports etc.) that CfH understand and how to understand CfH comments. They have risk assessments, hazard logs etc.

Gary Shuckford looked at “Patient safety who cares?” from a supplier’s perspective. They also have hazard logs etc. and a robust reporting mechanism means that any help desk team member can click a button if a problem may affect patient safety.

By rigid adherence to Common user interface and other standards and working for interoperability the safety of their systems is improved.

Their software alerts clinicians e.g. there were 60,000 patients with high glucose and no diagnosis of diabetes mellitus and 500,000 with impaired glucose tolerance that hadn’t been followed up. This has improved since the alerts were turned on.

Simon Benn from iSoft looked at clinicians and technology from a historical point. There were trail blazers who used first generation systems to code things that helped clinicians (e.g. warfarin checks). The second generation brought drug databases with contraindications, templates, recall dates – all of which helped with the management of the patient’s condition and improved safety. Better hardware and graphical front ends, use of colour etc. and electronic transfer of data came in the third generation of systems. By this stage trail blazers have lots of data to drill into.

Now there is cleverer software with context sensitive information capabilities. This aids clinical safety whilst allowing the clinician to focus on the patient.

It was interesting to see that the four presenters had taken different slants on the topic.

#### **Closing Remarks - Ian Shepherd – PHCSG Chairman**

Ian brought the conference to a close by commenting upon the twenty-four very relevant presentations which had occurred over two hot days and by thanking the organisers, contributors, chairs of the sessions and stand holders.