

Pharmacy at the interface — progress and opportunities

Medicines management in hospitals, payment by results, the implications of Connecting for Health and the benefits and challenges of interface working were all topics discussed at this year's *Hospital Pharmacist* conference. Hannah Pike and Haley Hill report

There are lots of good examples of patient-focused, patient-centred care services in the pharmacy world and beyond, Richard Seal, director of medicines management at the National Prescribing Centre told delegates. "However, if we thought we had actually cracked it, then we have not. Despite all our efforts so far there is still a lot to do," he said.

Mr Seal outlined ongoing problems faced by hospitals when trying to improve medicines management, and used examples from the NPC's hospital medicines management collaborative programme to illustrate how practice can be improved.

Mr Seal said that it is essential to get the communication right to help bridge the gap between primary and secondary care, and that many examples from the national medicines management collaborative have resulted from improvements in communication. Trusts do not always put professional skills to best use, he said, and issues such as rising costs, waste and inefficiency all contribute to the problem. Mr Seal said that "pharmaceutical need" is often unmet and suggested that involving patients in the design of services would help identify the type of problems that they face when they try to manage their medicines.

He said that another problem is how to make the best use of medicines, for example, statins. "There is an enormous drive to manage cardiovascular disease . . . but if you actually look at the number of people who are still taking their statins after two years it is absolutely appalling. Helping people to understand the reasons why they should be taking their medicines or not is something that we still need to address."

One barrier to improvement is ignorance, said Mr Seal, since people do not always realise that their knowledge could be useful to other people or to other trusts. Motivation can be another barrier, if people do not see the reasoning behind transferring knowledge or better practice. Lack of capacity, including lack of time, money or management capacity are all other factors that may affect best practice not being adopted.



Richard Seal: medicines management is everyone's business

Mr Seal described a series of "top tips" for improvement that have arisen as part of the medicines management collaborative programme.

Reconcile medicines Mr Seal referred to the Institute for Healthcare Improvement in the US which is running a campaign called the "100k lives" campaign, which aims to save 100,000 lives by improving the way certain things are done. One of the improvements it has suggested is better medicines reconciliation at points of transfer. This involves identifying the most accurate list of all medicines that a patient is taking, which should include the drug name, dosage, frequency and route of administration. This list should then be used whenever medicines are given to the patient, or at points of transfer. Points of transfer include when a patient is admitted, moved between wards or specialities, moved from an acute crisis team to rehabilitation, referred to general practice or when information is transferred from the trust pharmacy to a

community pharmacy. The list should be compared with prescriptions written on admission, and at any points of transfer or discharge, and reasons for any omissions or changes to the list should be documented.

Mr Seal said that although this sounds like simple common sense, if medicines reconciliation was properly handled it would improve problems at all points of patient transfer.

"How much communication do you actually have with community pharmacists around those medication lists?" Mr Seal asked delegates. He said that trusts in the HMMC programme which have routine ways of communicating to community pharmacies have seen reciprocal benefits. The trust may have access to information from the patient medication record which would otherwise be inaccessible, for example, out of normal working hours.

Reassess dispensary processes Dispensary systems need to be streamlined to identify where problems occur and to match capacity with demand, Mr Seal told delegates. Consideration should be given to the use of automation, skill mix (including technicians and assistants) and work flow. An audit should be performed to assess how much time is spent on urgent prescriptions and whether this time is justified. "What happens in the dispensary is vital in terms of repercussions in primary care," he explained.

Reduce waste One directorate in a district general hospital taking part in the HMMC programme managed to save £150,000 in one year by reducing waste, Mr Seal said. Over-ordering and over-prescribing are both issues that can be addressed. A patient being in hospital is also an ideal opportunity for a full review of their medicines to be performed.

Identify and manage risks Both risky processes and risky patients need to be identified, said Mr Seal. Patients at high risk include those on multiple medicines, those

on complex regimens, with multiple morbidity or a history of medicines-related problems. "We know that coming into hospital is a risk factor for subsequent medicine-related adverse events," he said. "Medicines form a significant component of readmissions. If you can tackle some of these problems before the patient is discharged the first time, so much the better."

Processes that can introduce risk include prescriptions being written under pressure. An HMMC audit of medication errors found that other factors leading to medication errors included failure to write prescriptions correctly, confusion over drugs with similar sounding names, and misunderstandings around oral communication. "There is a huge opportunity for pharmacists to be involved and to help remedy some of the problems caused by these risky processes," he pointed out.

Common serious medicine-related errors are still being made despite the fact that most pharmacists know the areas of risk that they should watch out for. Examples of these include methotrexate being prescribed daily instead of weekly, errors with heparin pump settings and drugs prescribed that interact with warfarin. "It is not just what we prescribe, it is how we prescribe," he reminded delegates.

Monitor critical drugs It is essential that critical drugs such as methotrexate, non-steroidal anti-inflammatories, digoxin, lithium and levothyroxine are monitored properly. However, attention must also be paid to the more simple drugs said Mr Seal. He said that one trust found that four patients admitted from general practice on aspirin had dyspepsia, melaena and anaemia recorded in their notes. Three were later discharged on aspirin and two later died on readmission from bleeding complications.

Carry out medication reviews It must be clear whether the intention is to perform a clinical review or a medication history, Mr Seal said. Patients should be prioritised (start with those aged over 65 years and on four or more medicines, for example). As well as pharmacists, technicians, nurses and other allied professionals can be involved in the process, and reviews can be done as part of another task eg, when nurses do the drug round, he suggested.

Lose the drug trolley "Supervised administration is something that we need to get on top of," Mr Seal told delegates. He said that up to 7,000 individual patient doses are administered in the average district hospital every day, and in one trust 40 per cent of

nursing time was spent on medicines rounds. This is time could be freed up and put to better use, Mr Seal pointed out.

Improve information for patients Better use should be made of leaflets and posters, Mr Seal suggested. Patients should be encouraged to talk to staff and ensure that they understand their medicines before they take them home. Discharge summaries should include clear indications of all changes that have been made, details of the monitoring requirements, the recommended review interval, and a clear indication of the instructions given to the patient or carer. A follow-up phone call should be considered for those patients at high risk and patients should know whom to contact in case of queries.

Involve other people As well as pharmacists, nurses, carers, ward staff, care assistants and social services all have a part to play in medicines management. Communication with trust management is important, and patients should be involved at all stages possible. "Everyone has a role in medicines management, it is not the prime remit of the pharmacy world," Mr Seal told delegates. "Make medicines management everyone's business – because it is."

Commissioning services and payment by results

Payment by results cannot be talked about on its own, but should be considered in the context of what it enables, which is practice-based commissioning, Duncan Jenkins, specialist in pharmaceutical public health at Dudley Primary Care Trusts told delegates.

"On first examination it seems like practice-based commissioning and payment by results might be doing nothing to improve relationships between commissioners and providers," he said, "but I think there are a lot of positives that we can bring out of it."

Dr Jenkins pointed out that recent changes to contracts mean that there is now much greater flexibility in whom PCTs can commission services from.

Although there might seem to be a conflict between commissioners and providers, Dr Jenkins described the relationship as a "healthy divergence of interests". Commissioners focus on health, not illness, he said. Commissioning is needs-based, focused on evidence, investment and outcomes, and is about securing services on a population basis. Providers, on the other hand, are much more focused on illness, they are income-based and more patient-focused. GPs, however, will need to act for both sides, often in the same consultation.

Dr Jenkins gave an outline of what payment by results entails, to help identify the



Duncan Jenkins: a healthy divergence of interests

tensions and opportunities that it may create. He explained that, with payment by results, instead of commissioning services through fixed-price block contracts, PCTs will:

- Pay for the actual activity hospitals and other providers undertake
- Pay providers of care fixed rates for the work they do
- Commission and monitor activity based on patient numbers, adjusted for complexity
- Pay for each procedure at a nationally agreed rate, taking into account regional variations

"We are looking at devolving accountability down to the local level," he said. He also pointed out that there must be a robust mechanism for payment in order to achieve plurality of providers and patient choice. With payment by results the idea is that the money will follow the patient through their treatment path, and the concept of costing treatments at a patient level is not a new one, he explained.

We are now seeing the largest ever sustained increase in NHS funding, Dr Jenkins said, with 75 per cent of it being held at a local level. Practice-based commissioning will allow the money to come down to a patient level, and payment by results is the essential building block for this model.

In terms of how treatments are costed, Dr Jenkins explained that the tariff price is calculated by taking the median from reference

costs from all trusts. Trusts which have higher costs for a particular procedure are therefore likely find themselves short of money. Thus there are a few hospitals where payment by results has inflicted huge financial pressures, he said.

Dr Jenkins described practice-based commissioning as the counter-balance to payment by results. "Under practice-based commissioning, GP practices will take on responsibility from their PCTs for commissioning services that meet the health needs of their local population," he explained. "Payment by results gives GPs the flexibility to decide who they commission services from. With payment by results, if GPs can reduce referrals to secondary care they have the flexibility to reinvest that money into services, which could include services from non-traditional providers, or primary care-based services. There is a big pressure to manage long-term conditions as much as possible in primary care," he explained.

— Increased competition

With payment by results commissioners will only pay for what is provided, he said, so if there are fewer admissions, the costs will be lower. Front-line staff will drive the commissioning decisions and can re-invest the savings. "This will feed the redesign of primary care," he said.

As well as practice-based commissioners having the flexibility to decide where they commission services from, they are also offering their patients a choice of several providers for elective procedures, Dr Jenkins said. "Not only might they choose not to contract with your trust but, if they do, patients also have to be given the choice of three or four other places that they could go and that includes the private sector." He said that this has introduced more competition into the market, which is further supported by the new electronic booking software Choose and Book.

Robust governance arrangements will be in place that will make sure that the services commissioned in primary care are done so appropriately, transparently, and will be contestable, Dr Jenkins pointed out.

— Implications

Trusts are going to want volume in terms of the services they provide, he said. It may prompt some PCTs to specialise, or to despecialise. "It will be interesting when financial staff begin to look at which consultants are value for money and which specialities are good money makers," he said.

"GPs will gate-keep to make savings and we are expecting more incentives in terms of payments for GPs to engage with this," he said. "The uptake of practice-based commis-

sioning is poor at the moment, but [soon] they are not going to have a choice."

Dr Jenkins said that although primary care will develop services that have previously been provided in secondary care settings, foundation trusts could also compete as providers of care outside of hospital. It is important that we ensure that the appropriate pharmaceutical expertise is provided to support those patients, he said.

PCTs will want the best quality care within the tariff, he pointed out, but trusts may want to reduce costs. He posed the question of whether trusts will stop performing a particular procedure that is costing them more than the tariff price and is therefore not cost effective, or will they reassess the cost of the procedure by looking at skill mix, length of stay, consumables, etc?

On the positive side, there is a common agenda, he said. All parties are striving to achieve value for money and appropriate use of medicines. He pointed out that it is all NHS money and that if we look after it it will create more opportunities than threats.

"All of the traditional boundaries are being broken down, and there are great opportunities for primary and secondary care to make sure that pharmacy service is joined up and that the pharmaceutical skills are put where they are most appropriate," he concluded.

Will Connecting for Health smooth the seams?

Connecting for Health will only deliver seamless care if NHS staff engage with process change, Keith Farrar, clinical specialist in electronic prescribing and medicines management for CSC Computer Services told delegates. "It is not about putting computers in. It is about changing the way we work in a way that will be facilitated by greater use of IT," he said.

The need for an electronic patient record becomes apparent if you consider the number of transactions taking place in the NHS each week. In a typical week in the NHS six million people will visit their GP, more than 800,000 people will be treated in NHS hospital outpatient clinics and over 10,000 babies will be delivered, he said. Approximately three million critical processes take place per day and a system as complicated as that can no longer be managed on paper.

— Seamless care in pharmacy

"Seams" in a pharmacy context can occur at admission, discharge or transfer or when prescriptions are written or altered. Seams can relate to practitioner knowledge about the drug, the patient or the test results, or to the patients' knowledge and their ability to



Keith Farrar: computers are only a tool

understand their medicines. Seamless care, said Mr Farrar, involves medicines information being available at admission and at all points of transfer. Other relevant clinical information such as diagnosis, indications and co-morbidities should also be available.

Seamless care is information about medicines being available to all those who need it, including hospital staff, community pharmacists, community nursing staff, patients and their carers.

Mr Farrar outlined common causes of prescribing errors, and quoted some statistics about dispensing and drug administration rates. He referred to a recent paper in the *Canadian Medical Journal* which found that up to 67 per cent of patients admitted to hospital had an incorrect medication history, which led to inaccurate prescribing. "A seamless transfer of information from the GP to the hospital will solve that problem for you," he said.

One of the most common problems seen on admission is the omission of a drug the patient has been taking, whereas the most common errors on writing new prescriptions are dose related, he said.

— Impact of IT

Mr Farrar showed delegates an example of a badly written drug chart where the drug name was illegible, and another where methotrexate had been prescribed daily rather than weekly. Computers can help

avoid these mistakes by flashing warnings at the user, highlighting allergies, unusual doses or interactions, he pointed out. However, he warned that a computer is only a tool and should not encourage laziness.

— Time saving

Mr Farrar showed delegates a graph of the average percentage of pharmacists' time spent dispensing in a number of different trusts. The time varied according to the size of the pharmacy service provided, but in the worst case over 50 per cent of the pharmacists' time was spent dispensing. This is unnecessary now that robots can dispense and label for you, he said. Electronic prescriptions can now go straight to robots for picking, bypassing the dispensary.

Mr Farrar pointed out that according to the Audit Commission "Acute Hospitals Portfolio", nationally automated dispensing could release the equivalent of 635 whole time equivalent pharmacists, 450 whole time equivalent medical technical officers or 220 whole time equivalent assistant technical officers. He said that computers can do many of the tasks that pharmacists do when they look at a patients' drug chart, such as checking if an item is a stock item on that ward, and checking for patient allergies and drug interactions, allowing more time to be spent looking at the patient themselves.

Mr Farrar said that most of the time that pharmacists spend walking around the wards is spent performing a supply role. "If you have a computer, 70 per cent of your time on the ward is spent caring for people," he said. "Focus on the patient and you have got a future. Stick to what you are doing and you have not," he said.

Pharmaceutical care involves an assessment of the patients' need for a medicine and a responsibility for ensuring those needs are appropriately met, he explained. "Not necessarily to do with what they were taking before, but an examination of what is wrong with them and what they actually need in terms of medicines to treat what is wrong with them."

Mr Farrar said that a change in mindset is needed. Rather than asking themselves if a medicine is safe, pharmacists should be asking themselves if it is appropriate, he said.

He also pointed out that the National Service Framework for Older People states that 50 per cent of drug expenditure is spent on the over 75s, and that 50 per cent of these medicines are not used as prescribed.

— Practicalities

Electronic prescribing is scheduled to be rolled out nationally in 2008-2010, he told delegates. Companies will not get paid until the system is delivered, and will get the

majority of the money when the system is running properly, so it is in their interest to make it happen.

Delegates raised the question about who will have access to patient records. Mr Farrar replied that although confidentiality is an important issue, organisations need to be convinced about who should have that access. He said that the real challenge is for pharmacists to establish the need to see the information so that they can provide a proper service, and that a lot of personal relations work is still needed in that area.

The issue was also raised about how the systems will be monitored. Mr Farrar said that programs are being developed for extensive testing, and that the companies will have to prove that from a risk-analysis point of view system is as robust as it should be.

Another question was asked about what checks will be made on those who are entering data onto the system. Mr Farrar said that it is up to individual organisations to train their staff and make sure they are competent, but that the companies have designed their systems so that it is easier for staff to input the right data than the wrong data.

People should also have realistic expectations of the new IT system. "Don't expect it to solve all your problems," he warned, "Computers are tools and they will not think for you."

Interface working — benefits and challenges

Integrated medicines management was an initiative discussed by Anita Hogg, clinical services development pharmacist, United Hospitals Trust, Northern Ireland. "There are a number of initiatives that bridge the interface within our trust," she said. She explained that there is a network of medicines governance pharmacists responsible for implementing systems and measures to promote patient safety and to minimise risk. There is a network of interface pharmacists responsible for managing specialist medicines across the interface and there is a network of accident and emergency pharmacists to try to keep patients out of hospital. "They achieve this by identifying and dealing with medicine-related problems when the patient presents at hospital," she said

Ms Hogg went on to describe a fourth initiative within the trust — integrated medicines management (IMM). "We like to think of this as our bridge across the interface," she said. "IMM is focused clinical pharmacy input throughout the entire patient journey which starts when the patient presents at hospital, through the stay in hospital and continues at the other interface at discharge." She explained that the service is provided by a ward-based pharma-



Anita Hogg: communication with primary care is essential for an accurate drug review in hospital

and pharmacy technician team. One of the key elements to this process is improved communication and hence improved patient safety across the interface.

— IMM service

Explaining how the IMM team improves patient care across the interface she said:

"You have to start when the patient presents at hospital." She said that the first and most critical thing the IMM team do is find out what medicines the patient has been taking. "We use whatever sources of information are available to us — we chat to the patient, their carers, we look at their own drugs that they have brought into hospital, outpatient lists and any other sources we can find," she explained.

However, she said that the most important action they take at this stage is contacting primary care. She said: "We contact the patient's GP and community pharmacist. We not only get a list of acute and regularly prescribed medicines, we also get a list of over the counter medicines from the community pharmacist."

Ms Hogg said that they obtain information from both GPs and community pharmacists about compliance issues, and information on medicines that have been discontinued and the rationale for the discontinuation. She also said that an accurate allergy status can be obtained from the GP or community pharmacist. "Having the correct allergy status for a patient can be the difference between life and death when that patient is under our care," she said.

Ms Hogg said that this information helps the IMM pharmacists to carry out a timely medicine review. "It all happens at the front door, not three, four or five days into the patient's hospital stay or in a muddled rush at discharge," she said. "That means, on admission we have an accurate and appropriate drug chart for that patient." She explained that this enables the pharmacists who are monitoring the patient during their stay to make more informed recommendations to the medical staff about the treatment regimen. "It also means that when we talk to the patient we are armed with accurate information and have the knowledge and the background from primary care about their history and any problems they may have had," she said.

— Discharge

"Discharge is the next interface — when the patient is ready to go back into primary care," stated Ms Hogg. "We have made this much safer within the IMM process," she told delegates. She explained that pharmacy staff based on the ward are responsible for signing and preparing the discharge prescription for certain targeted patients (traditionally a junior doctor's role). "Because the clinical pharmacist is responsible, we know that we have an accurate and appropriate discharge prescription which includes items such as insulin and topical preparations that junior doctors tend to leave off scripts," she explained. She said that IMM pharmacists also document information, on the discharge summary, that is relevant to primary health care professionals enabling them to continue the care of that patient post-discharge. "We document information such as medication changes and the rationale behind those changes. Also, something as basic as baseline laboratory tests so the GP has something to compare future readings to," she said. Ms Hogg explained that IMM pharmacists also document recommendations on how they feel primary care should be monitoring the patient post-discharge. "Not every patient is reviewed regularly by the GP and often when something is started in hospital the patient will be prescribed it until their dying day," she said.

"Not only do we have an accurate and appropriate discharge prescription with all of the relevant discharge information, we also get it to primary care on the day that the patient is going home," Ms Hogg stated. She explained that the discharge prescription is posted to the GP and the patient's nominated community pharmacist (if the patient uses the same community pharmacy at least 75 per cent of the time) and is delivered on the day of discharge.

— Further bridges

"Aside from improving the clinical service that we offer, we have also built further

bridges across the interface to implement new prescribing policies," Ms Hogg said. She said that a number of product standardisations have been introduced, where there is an agreed preferred brand to be prescribed and issued across primary and secondary care. "This reduces the confusion for patients," she said, giving the example of a modified release formulation: "A patient may be prescribed isosorbide mononitrate in a modified release formulation, be issued with two different brands from primary and secondary care, and may end up taking them both and presenting at accident and emergency a few days later."

She said that the trust will soon be taking this a step further and plans to introduce some therapeutic standardisation, where a preferred drug within a therapeutic class is agreed to be prescribed in both primary and secondary care.

— Benefits

"It is not enough to say that it is a good service; we need to demonstrate the benefits," Ms Hogg said. Three years ago a randomised, controlled clinical study was undertaken to compare the IMM to the routine clinical pharmacy service that was available within her trust on five pilot wards. She said that the study found improved patient safety due to an increased accuracy in prescribing on the drug charts. The mean number of discrepancies per drug chart was found to be 4.2 per patient. "Had we not provided that service, the average patient would have 4.2 discrepancies and it is most likely that those discrepancies would persist throughout the hospital stay and more than likely persist into primary care, possibly leading to readmission to hospital further down the line," she said.

Patient safety was also improved by a more accurate discharge prescription. Less than 1 per cent of pharmacist-generated prescriptions had a discrepancy, compared to 25 per cent of prescriptions generated by junior doctors. "Contrary to popular belief, this does not de-skill junior doctors — it is actually a learning process for them. They see us using this process and it draws their attention to the fact that there is life after hospital," she said.

Ms Hogg stated that the study showed improved efficiency within the trust. "Patients who received this service had a reduced length of stay by approximately two days," she stated. "This increases the throughput of patients because we are getting things right at the admission phase." The study also showed further improvement in efficiency via a reduced readmission. "We found that around 20 per cent fewer patients who received this service were readmitted at the 12-month time frame. Not only that, but the

time to readmission was increased by approximately 20 days," she stated.

She explained that there are clear economic benefits as well, because patients are not staying as long in hospital and they are not being admitted as frequently.

She said that a survey of the users of IMM was conducted. "We surveyed health care professionals across primary and secondary care and everyone was highly satisfied with the IMM service," she stated.

— Implementation

"In order to implement such a service, you need people on the ground," Ms Hogg advised. She said that a pharmacist and a pharmacy technician were deployed at ward level, to carry out this service. "Optimisation of skill mix is key to implementing this service. Within our trust, we maximise the pharmacy technicians resource and we have developed a number of extended roles for technicians within our trust," she explained.

Advising others on implementation, she said: "It is a challenge to get all the key stakeholders on board right from the word go." She explained that a steering group was set up to oversee this process which involved key users in primary and secondary care. She advised: "Build links with the GPs and the community pharmacists as you need them on board to rake the time to discuss issues such as the patient's history".

She said that a key contact person from the GP practices was allocated to contact for information. She said: "This person knew the information we required and the format we required it in, making the whole process more efficient."

— Future

"The initial pilot was on five wards and demand far outweighed supply," Ms Hogg stated. She said that the service was not advertised to other wards but that staff from other wards heard about the service and began asking for it. She said that there is now funding to implement the service across the entire hospital trust. "We have IMM on virtually all of our wards and the Department of Health has provided funding for IMM services for other hospital trusts in Northern Ireland," she said.

Ms Hogg explained that the service has been further developed to include one-stop dispensing and the use of patient's own drugs which, she said, has led to improved continuity of medicines use across the interface. "We have also been working with GPs to set up links for electronic data transfer. "We have five GPs that e-mail medication histories to us on a template and we are hoping to get more GPs on board. We have also developed our own software to record pharmacist's interventions in 'real time' on hand held computers," she said.