At the end of July 2009, the first pharmacists and pharmacy technicians to be asked to submit records of their continuing professional development under the Royal Pharmaceutical Society’s “call and review” programme will receive the request through the post. They will be given six weeks from the date of the letter in which to send in their records. It could be you.

For those who think their CPD records are not quite up to scratch or who have yet to make a record in the required format, now is the time to act. The time is especially right because help is at hand in the form of new one-to-one support. This is in addition to the Society’s two CPD helplines for technical and non-technical CPD issues that already exist (see Panel).

Since the Society announced its call and review plans in February (PJ, 21 February 2009, p179), NHS Education for Scotland (NES) has organised a number of CPD surgeries. “We had phone calls from practitioners looking for support and felt this was a practical way of helping,” Ailsa Power, assistant director of pharmacy at NES, told The Journal.

These surgeries will last about two hours and consist of a short presentation, then one-to-one facilitation of record making, either online or on paper. Each surgery will take up to 15 pharmacists and pharmacy technicians practising in Scotland. Preregistration trainees are also welcome.

Anyone can attend, from those who have never made a CPD entry to those who want help improving their records. Participants will be asked to bring either their username and password for the Society’s recording website (www.uptodate.org.uk) or their Society-approved recording documents.

Twelve surgery dates, the first being on 30 July and the last on 22 April 2010, have been released. All of these are to take place in Glasgow, but more surgeries in other areas of Scotland will be arranged if there is sufficient demand, Dr Power added.

For pharmacists, pharmacy technicians and preregistration trainees in England, the Centre for Pharmacy Postgraduate Education, in conjunction with the Society, is providing CPD recording support in the form of 70 workshops offering a total of 7,500 places. “We recognise that people’s understanding of the CPD recording process will vary so we have designed two different workshops to help address the pharmacy workforce’s differing needs,” Christopher Cutts, director of the CPPE, said.

Workshop 1 is designed for people who have not started to consider their CPD aims or who have not looked at the Society’s Uptodate website whereas workshop 2 is aimed at those who are aware of the process but wish to improve their understanding of the recording system and to

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**Book your place now**

**Scotland** Telephone 0141 223 1600 or e-mail june.beckett@nes.scot.nhs.uk to register. For further details, contact Ailsa Power (tel 0141 223 1539).

**England** Further details are available at www.cppe.ac.uk. Places can be booked online or by telephoning 0161 778 4000.

**Society CPD helplines**

- For technical problems (ie, with the Uptodate website or desktop recording system) telephone 01225 383663
- For any non-technical problems telephone 020 7572 2540
COURSES AND RESOURCES

make more of CPD opportunities. Workshop 2 will not use computers but will focus on creating good quality entries. People are welcome to attend both workshops, which each last about an hour and a half. They will be run by CPPE tutors and Society-trained facilitators and are scheduled for Saturdays and Sundays with a choice of times. The first CPPE CPD workshops will take place on 4 July in Uttoxeter and Cambridge.

The CPPE emphasises that any confidential and personal information will remain in each workshop and urges people not to be afraid to attend if they have not started recording their CPD.

A spokesperson for the Society said that it is looking at opportunities to work with the Welsh Centre for Professional Pharmacy Education to provide CPD support for pharmacists and technicians in Wales.

According to the Society, there is currently no agreed disciplinary policy for CPD but people who are unable submit their records within the six-week time frame (for example, due to illness or other problems) are advised to contact the Society (see Panel, p709) as soon as possible. — Lin-Nam Wang

Products and treatments for cellulite

Q Can you recommend a pharmacy product that will get rid of my cellulite?

A Some 85 per cent of post-pubertal women will suffer some degree of cellulite and this has prompted the development of a huge cosmetic industry to address this problem.

Cellulite has been described as the orange peel- or cottage cheese-like dimpling seen on the upper thighs and buttocks of women. It has also been described as a natural phenomenon to maximise fat retention to ensure adequate supplies for pregnancy and lactation. Cellulite tends not to occur in men although it can be found in androgen-deficient males, suggesting that it is related to the effects of oestrogens.

Cellulite involves the subcutaneous layer, which is located directly under the dermis. This layer comprises a mesh-like fibrous tissue (septae) organised into honeycomb-like compartments, which contain lobules of adipocyte cells. The septae originate in the fascia and extend up to the dermis. One theory of cellulite suggests that as adipocytes enlarge, this causes bulging within the compartment and since the septae are relatively inflexible, they pull down on the overlying skin which creates the dimpled effect.

Studies using non-invasive imaging techniques, have demonstrated fat herniation into the dermis. In women, the dermis is thinner and there is less collagen present than in men hence cellulite is more easily seen. Moreover, in males, the septae are arranged in a criss-cross pattern rather than in compartments and this prevents fat herniation. This model is widely accepted, but some work, although demonstrating adipocyte herniation, has failed to find a correlation between the extent of herniation and cellulite.

Other theories have suggested causes related to reduced vascular circulation and reduced lymphatic drainage — a fact used as a basis for many topical therapies. The reduced lymphatic drainage leads to an accumulation of fluid which pushes up on the surface of the skin creating the dimpled effect. This theory has not been widely accepted. Some authors have speculated that because some patients report tenderness when cellulite is compressed there could be inflammation in the tissue although others have not found any supporting evidence.

There is a wide range of potential treatments for cellulite available, including physical and mechanical approaches such as Endermologie (a massage-suction technique which assumes that the cause is related to impaired circulation), liposuction, subcision (which involves removing some of the septal bands) and mesotherapy (which requires the injection of phosphatidylcholine to remove adipocyte tissue). One approach gaining popularity is laser treatment. This is based on the notion that pulsed light builds collagen, creating a thicker dermis and so making cellulite less visible. Some (eg, Endermologie and some laser systems) have been approved by the US Food and Drug Administration. An oral herbal formulation, Cellasene, which contains a range of herbal agents, was shown in a clinical study to be no better than placebo.

Many topical therapies are available to treat cellulite and these are either based on xanthines (such as caffeine, aminophylline and theophylline), herbal extracts or retinoids. Current examples include:

- Adonia’s legtone serum (plant stem cells)
- Revitol cellulite solution (caffeine, L-carnitine, bladderwrack, retinol A, green tea extract, algae)
- Roc Retinol Anticellulite Intensive (retinol and forskolin)
- Nivea Good-bye Cellulite (L-carnitine)
- Bodymulsion Cellulite Solution (caffeine, almond oil, antioxidants)
- Boots Expert Total Body Cellulite cream (antioxidants and vitamin E)
- Murad (cayenne pepper, horse chestnut tree extract, tiger’s herb)
- Profile (caffeine, green tea, aloe vera, juniper, fennel)

Topical agents, which are β-agonists, are also thought to block phosphodiesterase enzymes that degrade cAMP. Although studies on xanthines show some improvement in cellulite the impact is small.

Results with caffeine are unconvincing. For example, one study with caffeine and a herbal mixture (including horse chestnut) using ultrasound found a reduction of 2.8mm in the subcutaneous fat layer, but this was lost once the cream was stopped.

Another topical agent that has been studied is retinol. The rationale is that retinol can increase the thickness of the dermis, making cellulite less noticeable. However, studies using retinol have not demonstrated important changes in the appearance of cellulite.

Herbal products have also been promoted to treat cellulite. Two small studies on forskolin have shown reduction in thigh girth in patients who were also placed on a low calorie (800kcal/day) diet and exercise regimen.

L-carnitine is used in some commercial creams for cellulite but again there do not appear to be any studies to support its use. Similarly there are no published trials of antioxidants in this field.

Lipolysis is mediated by cyclic adenosine monophosphate (cAMP) pathways and xanthines, which are β-agonists, are also thought to block phosphodiesterase enzymes that degrade cAMP. Although studies on xanthines show some improvement in cellulite the impact is small.

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There is a lack of professional awareness and clear, practical guidance on the assessment, diagnosis and management of constipation in palliative care patients, say Ray Bunn, Gina Starnes and Catherine Gleeson. In this article, they share the clinical protocols for constipation that are used by the St Catherine’s Hospice inpatient unit and community specialist palliative care team in West Sussex.

Constipation can be defined as the passage of small, hard faeces infrequently and with difficulty. This takes into account both the measurable symptoms, such as frequency and characteristics of defecation, and the patient’s perception of constipation, which is usually related to the level of discomfort and changes in bowel habit. Individuals vary in the weight they give to the different components of this definition when assessing their condition and may introduce other factors, such as pain and discomfort when defaecating, flatulence, bloating or a sensation of incomplete evacuation.

Up to 19 per cent of the general adult population suffer from constipation. Treatment and advice that can be given was discussed in a previous CPD article (PJ, 7 July 2007, pp23–6). Figures for the prevalence of constipation in palliative care patients vary. Over all, prevalence estimates range from 32 to 87 per cent. Nonetheless, constipation is the third most common symptom in palliative care, after pain and anorexia. Palliative care patients are at greater risk of constipation than the general population due to a combination of organic and functional causes (see Panel 1), with medicines contributing to a significant degree.

There are few robust data on the economic impact of constipation but healthcare professional manpower costs associated with its management add significantly to laxative costs, which the Department of Health estimated at £50 million in the NHS in England in 2005. Debility and comorbidity in palliative care is likely to have a greater impact on overall constipation management costs due to increased risk factors. The impact of untreated constipation on quality of life can be considerable. The main complications resulting from failure to recognise and treat constipation in palliative care patients include:

- Increased pain, distress, general malaise, abdominal pain and distension, anorexia, nausea, headache and halitosis
- Inadequate absorption of oral drugs
- Faecal impaction with or without spurious diarrhoea (overflow), rectal tearing or fissure, haemorrhoids and intestinal perforation
- Urinary retention, infection or frequency
- Analgesic non-compliance — patients decrease doses in an attempt to control their constipation
- Admission to a hospice or hospital and, possibly, a need for invasive and unpleasant rectal interventions resulting in the increased use of health-care professional time
- Confusion, restlessness and agitation where constipation is severe (this may be misdiagnosed as terminal agitation in a dying person)

Opioid-induced constipation

Much of the pain experienced by palliative care patients is treated with opioids. Opioids relieve pain by binding to receptors in the central nervous system but they also have effects at many peripheral sites and cause constipation largely through binding to peripheral µ-opioid receptors in the gastrointestinal system. Panel 2 lists the constipating effects of opioids binding to these receptors. Increased anal sphincter tone and reduced rectal sensitivity results in less urge and more difficulty with defecation, even when the rectum is full. Overall, the effects combine to give dry, hard stools that are difficult to pass.

All opioids have the potential to cause constipation, although it is suggested that some may be less constipating than others. For example, it has been suggested that transdermal fentanyl is less constipating than morphine — something we find to be true in practice — and that methadone is less constipating and oxycodone more constipating than morphine.
Panel 1: Causes of constipation in palliative care

Organic factors
- Pharmacological agents: opioids; drugs with anticholinergic effects (eg, antipsychotics, tricyclic antidepressants, hyoscine derivatives); some chemotherapeutic agents (eg, carboplatin, vinca alkaloids); antimetabolites (eg, cyclophosphamide, ondansetron); diuretics; antacids; antihypertensives; antimuscarinics; dopamine derivatives; oral iron and calcium supplements; somatostatin analogues (eg, octreotide); some anticonvulsants; clonidine, verapamil, and non-steroidal anti-inflammatory drugs
- Metabolic disturbances (eg, hypercalcaemia, hypokalaemia)
- Structural abnormalities (eg, tumour masses, ano-rectal conditions)
- Decreased intestinal secretion
- Increased water absorption

Functional factors
- Decreased fluid intake
- Poor appetite and low food intake or a low fibre diet
- Old age, reduced mobility, inactivity, depression, sedation and bed confinement
- Lack of assisted or dignified toilet facilities (eg, privacy)

A fraction of the dose needed for pain relief can be enough to cause constipation and people taking lower doses or weaker opioids are still at risk of this side effect. In our clinical experience, dose for dose, codeine appears to be at least as constipating as morphine in most patients. Furthermore, the constipating effect of opioids demonstrates inter-patient variability.

A hospice approach to constipation
St Catherine’s Hospice adopts an approach to the maintenance of bowel function based on a combination of successful, established clinical practice underpinned by robust published guidance. Similar principles as for hospice inpatients apply to palliative care patients under shared care with their GPs in the community. A proactive, preventive, four-tier approach to the management of constipation is adopted, with the continuous assessment of bowel signs, symptoms and movements informing treatment direction. The four tiers are:

- Patient education
- Prevention
- Assessment, diagnosis and ongoing monitoring
- Management

Treatment depends on the patient’s bowel status at the time of presentation to the palliative care team, but the general approach prevails.

Patient education
A significant factor in constipation is patient perception and it is therefore necessary to gain an understanding of an individual’s normal and acceptable bowel habit and history. Where appropriate and practical, patients and their carers are made aware of the lifestyle factors that affect bowel habit (eg, fluid intake, mobility) and are encouraged to modify these within the patient’s limitations. Encouraging an immediate response to the urge to defecate and ensuring that toilet facilities that maintain the appropriate level of dignity and comfort are available also help to re-establish normal bowel habit.

Prevention
The preferred approach to the management of constipation in palliative care patients is proactive bowel care. Constipation in palliative care patients with advanced illness usually results from several simultaneous causative factors, as outlined in Panel 1. The contribution of opioid use can be anticipated and, consequently, laxatives should always be co-prescribed to patients taking strong opioids (see below). Many clinicians also advocate co-prescribing laxatives with the weaker opioids.

Assessment, diagnosis and monitoring
Each patient warrants a thorough and methodical assessment, including a full patient history and physical examination if he or she complains either of being constipated or of a defecation frequency lower than three times a week. Assessment should include frequency and consistency of bowel movements, usual bowel movement patterns before illness and normal bowel habit. The importance and emphasis that the patient places on constipation and bowel function and any psychological or environmental factors that may be affecting his or her ability to defecate should also be assessed. Helpful checklists have been produced to guide the assessment we undertake.

Assessment also includes the identification of organic and functional risk factors. Rectal examination may be indicated to exclude faecal impaction and suspected obstruction suggested by history, abdominal examination or radiology, or both.

Patients can record their symptoms in a bowel symptom diary (BSD) to help in the diagnosis of constipation and ongoing monitoring of bowel function. It is, however, important not to diagnose constipation in palliative care patients on the basis of one symptom in isolation because it may be related to underlying disease progression.

Validated constipation assessment scales, such as the Bristol Stool Form Scale, have been designed to be used by patients or their carers to assess the presence and severity of constipation and monitor bowel pattern on an ongoing basis. The individual’s BSD is reviewed at each consultation with a clinician, and any signs or symptoms and precipitating factors of constipation are investigated and promptly managed. This may include modifying fluid intake, implementing appropriate nutritional advice, physiotherapy to improve mobility and activity, reviewing opioid and non-opioid
medication, treating metabolic abnormalities, and ensuring the environment, equipment, aids and facilities meets the patient’s toileting needs. BSDs are also used to help evaluate the effectiveness of lifestyle advice and laxative therapy. Laxative treatment is routinely reviewed and modified as necessary.

Management

The main aims of constipation management in palliative care are to:

- Achieve the comfortable passage of stool rather than a specific frequency of bowel movement
- Re-establish comfortable bowel habits to the patient's satisfaction, using the least number of drugs for the shortest time
- Relieve the pain and discomfort caused by constipation and restore a sense of well-being
- Restore relative independence in relation to bowel habits, avoiding laxative dependence
- Take account of patient preference
- Prevent gastrointestinal symptoms

Laxative therapy

Laxatives fall into seven principal categories:

- Bulk-forming
- Stimulant
- Faecal softeners
- Osmotic
- Peripherally acting opioid receptor antagonists

Laxatives play an important role in the prophylaxis and treatment of constipation in palliative care patients. However, there are only three published clinical trials assessing efficacy and safety of laxatives in these patients and all have shown minimal differences in effectiveness between different laxatives. Choice is, therefore, governed by signs and symptoms of constipation, speed of effect required, side effects, type of stool, individual patient tolerance and response, formulation preference of patient and treatment outcome and cost.

Bulk-forming laxatives are generally not used in palliative care patients because many will be unable to consume the volumes of fluids needed to avoid intestinal obstruction through the formation of a viscous mass of the agent in the bowel.

The oral route for laxative administration is generally preferred. Rectal administration, alone or in combination with oral laxatives, may be necessary in patients who cannot swallow or tolerate oral laxatives, where there is faecal impaction or in patients with spinal cord lesions and disrupted innervation to the lower bowel.

Bowel cleaning solutions are used to clear the bowel before invasive or non-invasive procedures and are not routinely used as treatments for constipation.

Panel 3: Laxatives commonly used in palliative care

<table>
<thead>
<tr>
<th>Class</th>
<th>Action</th>
<th>Examples of preparations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mainly faecal softening</td>
<td>Increases water penetration of stools (docusate and arachis oil) or increases water in intestinal lumen and faecal weight (glycerol)</td>
<td>Docusate (oral or rectal), glycerol (rectal), arachis oil (rectal)</td>
</tr>
<tr>
<td>Mainly stimulant</td>
<td>Increases colonic motility via nerve ending stimulation, inducing peristalsis</td>
<td>Bisacodyl (oral or rectal), senna (oral), sodium picosulphate (oral)</td>
</tr>
<tr>
<td>Mainly osmotic</td>
<td>Increases water in the large bowel either by drawing fluid from the body or by retaining the fluid it is administered with</td>
<td>Lactulose (oral), macrogol compound powder (oral), phosphate (rectal), sodium citrate (microenema)</td>
</tr>
<tr>
<td>Combination</td>
<td>Combined modes of action (generally stimulant and softening)</td>
<td>Co-danthramer (oral, co-danthrurate (oral), liquid paraffin and magnesium hydroxide (oral))</td>
</tr>
<tr>
<td>Peripheral opioid antagonists</td>
<td>Displaces opioids from peripheral µ receptors</td>
<td>Methylnaltrexone (subcutaneous injection)</td>
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</tbody>
</table>

Comparison of time to effect for different laxative preparations used in palliative care

<table>
<thead>
<tr>
<th>Time to effect</th>
<th>15min</th>
<th>1h</th>
<th>6h</th>
<th>12h</th>
<th>1 day</th>
<th>2 days</th>
<th>3 days</th>
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<tbody>
<tr>
<td>Phosphate enema</td>
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<tr>
<td>Docusate suppository</td>
<td>Methylnaltrexone</td>
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<td>Arachis oil enema</td>
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<td>Glycerol suppository</td>
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<td>Sodium citrate microenema</td>
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<tr>
<td>Bisacodyl suppositories</td>
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<td>Combination laxatives</td>
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<td>Lactulose</td>
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<tr>
<td>Docusate capsules or syrup</td>
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<tr>
<td>Sodium picosulphate liquid</td>
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<td>Senna</td>
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<td>Macrogol compound powder</td>
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<td></td>
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<tr>
<td>Bisacodyl tablets</td>
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</table>

Author Ray Bunn will be available online to answer questions on the topic of this CPD article until 27 June 2009
Prophylactic or first-line laxative therapy

In general, the combination of a faecal soother or osmotic laxative with a stimulant laxative is recommended. The St Catherines Hospice protocol is usually to prescribe a stimulant laxative with a faecal soother (see Panel 4), although one type of laxative may sometimes be sufficient. Macrogol is often used alone for prophylaxis.

Patient preference is a major factor in prescribing choice. We do not routinely prescribe lactulose (because many patients do not like the taste and it can cause flatulence) or docusate syrup (because it tastes unpleasant and can create a burning sensation in the mouth and throat.)

Bowel pattern is monitored using a BSD. A bowel action is expected within three days. If this is not the case, doses are titrated upwards daily or on alternate days until bowel action is achieved. If colic occurs, the softening laxative dose is increased relative to the stimulant laxative dose. If faecal leakage occurs, the reverse is advised. Depending on effect, one of the laxatives may be stopped altogether.

Co-danthramer and co-danthrusate have a fixed content of each type of laxative, possibly aiding compliance by reducing the number of medicines to be taken. However, this limits flexibility in dose titration. In addition, the more dependent patients in a hospice bed may be more likely to be faecally incontinent and so more at risk from the possible side effect of danthron burns. These are, therefore, used mainly in community care.

Faecal impaction or unresponsive constipation

A rapid bowel action may not be possible if faecal impaction is present. In such cases, or where usual oral laxative regimens are unsuccessful, other treatment options such as suppositories or enemas (with or without the oral laxatives) or a peripheral opioid antagonist (see below) are considered. The manual removal of impacted faeces by a competent practitioner is usually a last resort although it may be an integral part of routine bowel management in some patients (eg, end stage multiple sclerosis patients).

Softer faeces in a lax rectum may respond to stimulant laxative suppositories, such as bisacodyl.

Nester options

Patients receiving opioids whose constipation is unresponsive to the usual oral laxative therapy alone may be given subcutaneous methylnaltrexone in addition to oral therapy. This is a selective peripherally acting mu-opioid antagonist that has been shown to induce laxation rapidly in patients with advanced illness and opioid-induced constipation, set against a background of continuous oral laxative therapy. Treatment does not affect central analgesia or precipitate opioid withdrawal. Its optimum place in laxative therapy in palliative care is still being evaluated but it appears to have a role as an alternative to enemas or suppositories in patients with established faecal impaction.

Although not specifically licensed for pain in palliative care, an oral combination of oxycodone and naloxone (Targinact) has been used to reduce the opioid-induced constipation caused by oxycodone. Naloxone is an opioid receptor antagonist with negligible bioavailability unless administered systemically. When taken orally, it exerts a local inhibitory effect on opioid receptors in the gut with minimal central effects. It antagonises the constipating side effect of oxycodone without affecting its analgesic properties.

CPD articles are commissioned by The Journal and are not peer reviewed.

References

Do we know how many of our MUR recommendations are followed?

Many pharmacists work with targets for medicines use reviews in mind. They also make many recommendations that improve patient care as a result of MURs. But just how many of these recommendations are followed? Alf Choudhury, a community pharmacist in Great Yarmouth and Waveney, looked into the results of his MURs using patient medication records and patient feedback.

Many changes in the NHS are not the outcome of properly evaluated studies and the medicines use review service was no exception. Several people have expressed doubts on the value of this service, claiming that there is little evidence to support its effectiveness and value for money. There has also been criticism that GPs ignore pharmacists’ MUR recommendations and the All-Party Pharmacy Group has identified the need for better professional relationships between community pharmacists and GPs, which is also acknowledged in the English pharmacy White Paper. This led me to wonder if my MUR efforts have been worthwhile.

To establish how many of my MUR recommendations had been taken up, I extracted 100 MUR forms completed between 2006 and 2008 from four pharmacies within Great Yarmouth and Waveney Primary Care Trust area. Dispensing data from at least three months after each MUR consultation were collected from patient medication records and, where possible, patients were contacted for further feedback. Interventions resulting from the MURs included:

- Discussion of compliance or concordance issues
- Amendment of quantities or dosage instructions
- Change of medicine (including stopping a medicine [eg, indication is no longer valid, therapy is duplicated, non adherence and adverse drug reactions], starting a new medicine [for an untreated indication], switching medicines [eg, because of contraindications, adverse effects, drug interactions, availability of a cheaper alternative])
- Full clinical review by GP (ie, reviews recommended because of suspected adverse drug reactions, interactions or worsening of a condition)

Patient medication records were used to find out if recommendations had been followed.

- Evaluation of cost-effectiveness
- Urgent action (where direct contact with a GP was needed)

More detailed examples of interventions are listed in Panel 1.

Panel 1: Examples of interventions resulting from medicines use reviews

Compliance improved A patient prescribed many medicines expressed concerns over side effects (eg, the patient information leaflet for Avandia warns of heart failure) and was ordering her medicines inconsistently. The MUR was used to provide education and a discussion of risks versus benefits. The patient medication record after the MUR shows consistent ordering.

Medication optimised A patient was taking 25mg isosorbide mononitrate modified release capsules in the morning and at night. The usual dose for such a formulation is once daily. I expressed concern about short low nitrates periods and the possibility of tolerance and the PMR reveals a change to 50mg m/o m/om.

Medicines stopped Since moving into residential care a patient reported a worsening of a condition (Guidance from the National Institute for Health and Clinical Excellence recommends an assessment every six months). The PMR reveals donepezil was stopped. (This also resulted in a cost saving of over £80 per month*.)

Medicine switched Bendroflumethiazide was prescribed to a patient with ankle swelling and who was taking amlodipine 10mg od for hypertension. The GP was advised to review continued prescribing of Diprobase, Dipro bath and Trimovate. The PMR reveals all to have been stopped.

Medicine switched Donepezil was prescribed to a patient on donepezil had not been given a mini mental-state examination (MMSE) for some time. (Guidance from the National Institute for Health and Clinical Excellence recommends an assessment every six months). The PMR reveals donepezil was stopped. (This also resulted in a cost saving of over £80 per month*.)

Medicine added As a result of an MUR a GP was advised of cheaper alternatives to valsartan. The PMR confirms a change to amlodipine, resulting in a cost saving of over £15 per month.*

Savings made As a result of an MUR a GP was advised of cheaper alternatives to valsartan. The PMR confirms a change to amlodipine, resulting in a cost saving of over £15 per month.*

* Cost savings are based on prices at the time of analysis.
Findings and suggestions
Forty-four per cent of the MUR forms were disregarded because they were disregarded "no further action necessary" (22 per cent), my recommendations were not acted on by GPs or no information was available. I found that more than half (56 per cent) of my recommendations had been taken up by GPs. The most evident interventions were changes in medicines (16/56), alteration to dosing (9/56), referral for a full clinical assessment (7/56) and making cost savings (9/56).

The provision of an MUR service by a locum or relief pharmacist is sometimes perceived as problematic. Not knowing the patient population, not having an opportunity to organise workflow to allow time for MURs and not having rapport with local surgeries can be obstacles. Nonetheless, that 56 per cent of my recommendations were followed goers showed to patients that GPs will act on MURs, regardless of acquaintance or rapport, provided they are done properly. If I had been a full-time pharmacist who had built a good rapport with local surgeries, perhaps the percentage would have been higher.

To find out why recommendations were not acted on, I would need to undertake studies involving GP satisfaction. However, I do not view the MURs where recommendations were not acted on by GPs (or, indeed, those where no action is required) as ineffective. Changes in medicines are not typical outcomes of MURs. Rather, patient education and concordance and compliance are fundamental aspects, along with informing the GP of medicines being used or not used. MURs help explore patients' health beliefs and behaviour, enabling pharmacists to provide education.

MURs may be valuable in simply offering reassurance that patients are taking their medicines correctly. Although this cannot easily be measured, in theory, such interventions should reduce hospital admissions. Much can also be achieved through the advocacy role pharmacists play in persuading patients to consult their GP. It is my experience that some patients do not want to "trouble the doctor" because of fear, or because they believe that their condition is self-inflicted or simply something to be put up with in old age. In many cases, however, an early consultation will result in better health and cost outcomes in the long run.

The issue of targets and limits
To help promote and maintain quality we need to minimise the unintended consequences that setting targets can cause, particularly if they are unachievable. The figure of 400 MURs per year set by the Department of Health is not achievable in all pharmacies. Working as a relief pharmacist has enabled me to see pharmacies that are able to meet targets easily and those that struggle. Edge-of-town pharmacies with no neighbouring surgeries struggle simply because of the small numbers of prescriptions dispensed. Health centre pharmacies usually dispense high volumes but any upset in the support team through absence or poor planning will impact workflow, affecting the number and quality of MURs conducted. Pharmacies serving a predominantly elderly population may have a large number of their repeat prescriptions delivered or picked up by carers, reducing pharmacist-patient contact and hence the number of MURs. In high street and town centre pharmacies, many customers present prescriptions for acute problems with single items and have little time to spare.

From a contractor's perspective the 400 MUR target is a means of collecting revenue to compensate for the reduced dispensing fee. For every pharmacy failing to achieve the target the NHS potentially saves up to £11,200, which previously would have been paid as part of the dispensing fee. It is not surprising why employees feel under such pressure to complete MURs.

I believe in competition and targets to help raise standards and motivation but these must be implemented appropriately, taking into account complexities of wider services, work load, skill mix and the level of support staff. Pharmacists' autonomy to make professional judgements (ie, in the selection of appropriate patients and choosing the time of day to conduct MURs and how long to spend on a consultation) must not be undermined because of targets.

Attention to patient safety should be of prime concern at all times. Pharmacists must be able to raise concerns about patient safety and also be empowered to take action where they have concerns about the safety of a pharmacy.

Other challenges
Challenges, such as poor GP reception of the MUR service and paperwork, commercial pressures, workload stress and a lack of confidence, particularly among newly qualified pharmacists, remain. Identifying experienced mentors to discuss ongoing problems and options with newly qualified pharmacists and those returning to the profession could improve MUR services at a local level. Building and maintaining effective working relationships with GPs and other primary healthcare staff could change their perception of MURs from being a commercial activity to one of a professional-oriented activity that can support general medical services. Panel 2 contains more tips for improving MUR outcomes.

The DoH needs to rethink a way of renumerating contractors for the MUR service so that it is not target-driven but quality-driven. To achieve quality pharmacists need to put their advisory role above dispensing.

Pharmacists are experts in the field of drugs and their treatment of disease and, therefore, have much to offer. Some, however, are unable to strike a balance between clinical issues and compliance and concordance issues. Although, in principle, MURs should focus on concordance and compliance, the boundary between this and clinical review is blurred. Relying on GPs signs or symptoms of adverse reactions, ineffectiveness of prescribed medicines and deterioration of condition does not constitute the unearthing of complex clinical issues, but merely prompts GPs to carry out a higher level review, which requires access to medical records.

My small study has helped me to reflect on and evaluate my performance in relation to MURs. I believe that it also provides sufficient data to encourage us to value and embrace the MUR service.

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