

# Implementation of pharmaceutical care model schemes in Grampian

Airlie Bryce, George Downie and Caroline Hind describe how community pharmacists in north east Scotland became involved in the provision of enhanced pharmaceutical care services in order to optimise patients' benefit from the medicines

Pharmaceutical care model schemes were launched by the Scottish Executive Health Department in 1999 to encourage community pharmacists to develop enhanced pharmaceutical care services for frail elderly patients, palliative care patients and those with severe and enduring mental illness.

The schemes are intended to complement the existing services within primary care by recognising and utilising the specific skills of community pharmacists in improving patient care in the community. The objectives of the schemes for frail elderly are to help support elderly patients who live at home to comply with their medication regimen, simplify regimens, provide an opportunity for medication review and reduce the number of hospital admissions.

Pharmaceutical care sets out to maximise the benefits and minimise the risk of medicines and improve health by working in collaboration with the patient and other health care providers.<sup>1</sup> Hepler and Strand<sup>2</sup> defined pharmaceutical care in 1990 as "the responsible provision of drug therapy for the purpose of achieving definite outcomes that improve a patient's quality of life. The outcomes are to cure disease, eliminate or reduce symptoms, arrest/slow disease process and prevent disease/symptoms."

A number of studies have proved the benefits of pharmacists providing pharmaceutical care by undertaking medication review.<sup>3-7</sup>

"The right medicine: a strategy for pharmaceutical care in Scotland" was designed to deliver improved services to patients using the skills of the pharmaceutical profession to deliver effective care.<sup>8</sup> Risk factors known to be associated with problems in older people, taking four or more medicines, recent discharge from hospital and specific drugs (eg, warfarin, non-steroidal anti-inflammatory drugs, diuretics, digoxin) have been highlighted in



Robert Baird counsels a patient in his pharmacy in Fraserburgh

"Medicines for older people, a supplement to the National Service Framework for Older People" and by the Scottish Clinical Resource and Audit Group.

## Implementation of the scheme

The aim of the pharmaceutical care model scheme for the frail elderly in Grampian is to involve community pharmacists in the provision of enhanced pharmaceutical care services in order to optimise patient benefits from taking medicines. To develop the service there was a need to provide training and support for community pharmacists to deliver enhanced pharmaceutical care services across NHS Grampian and to develop a tool to document the provision of pharmaceutical care across NHS Grampian in order to enable the process and outcomes to be monitored

**Pilot scheme** An initial pilot for medication review by community pharmacists for older patients was introduced in September 2002 for three months to test the process and the documentation. Seven community pharmacists and four medical practices in Aberdeenshire were involved.

The community pharmacists were asked to resolve difficulties patients may have in managing medicines by adopting a concordant approach at patient/carer interview and thereby to:

- Resolve medication management problems
- Improve compliance
- Improve patient's understanding of their medicines
- Identify potential drug abuse or over use
- Identify potential side effects and adverse drug reactions
- Reduce waste of medicines

**Roll out** At three months the pharmaceutical care model scheme was extended and a letter explaining the scheme was sent to all pharmacies in Grampian. Of the 123 community pharmacies in Grampian, 74 were willing to participate.

**Patient recruitment** For the pilot, community nurses and health visitors were asked to refer patients, aged 65 years or over, who were experiencing difficulty in taking medi-

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cines and who were on four or more regular medicines. Since the referral of patients was initially slow, patient recruitment was extended to the community nurse, health visitor, general practitioner, carers and community pharmacists.

**Training and support** Community pharmacists attended a full introductory day session on pharmaceutical care planning, interview technique, medicines in the elderly, medication review, documentation and case studies. The training session has been run on 12 occasions in different geographical areas. Pharmacists are then invited to attend half day peer review sessions at three- to four-monthly intervals. At group peer review, pharmacists presented and discussed anonymised care plans, discussed progress and further training was provided, eg, about cardiovascular drugs, musculoskeletal drugs and falls prevention. To raise awareness of local treatment protocols and to engage community pharmacists in provision of integrated care, hospital consultants and specialist pharmacists have provided training in palliative care, chronic obstructive airways disease and epilepsy.

A clinical lead pharmacist offered one-to-one ongoing support and advice to all community pharmacists in the scheme as required and pharmacists could discuss any problem cases via a telephone information line. As a support for new initiatives in Grampian, all community pharmacists were given the opportunity to undertake a diploma in clinical pharmacy funded by the "Right medicine" allocation.

Currently 10 are undertaking the course. Pharmacists were actively encouraged to complete the Scottish Centre for Post Qualification Pharmaceutical Education distance learning packages, to attend local and national courses and to participate in continuing professional development.

**Communication with general practices** The director of pharmacy and medicines management discussed the initiative with the GP subcommittee and a letter was sent to all GPs in Grampian explaining the pharmaceutical care model scheme. The community health partnership pharmacists discussed the scheme with the medical practices to help gain support. Community pharmacists were then asked to communicate with their own GP practices to introduce the scheme. Guidance was given to the practice nurses on how to identify patients with compliance problems who would be suitable for referral.

**Patient interview** The community pharmacist contacted patients and arranged an interview in the pharmacy or in the patient's own home. Before the interview, the pharmacist had noted medicines recorded on the pharmacy's patient medication record system. At interview the community pharmacist reviewed all of the patient's medication in-

**Table 1: Number of care plans submitted by community pharmacies over 15 months (n=250)**

No of care plans	No of pharmacies)	%
1-10	34	24
11-20	6	33
21-30	3	30
31-40	1	13

**Table 2: Pharmaceutical care issues addressed by pharmacists (n=570)**

Pharmaceutical care issue	No of care issues	%
Compliance issues	261	46
Untreated indication/failure to receive medicines appropriately	129	23
Improper medicine selection/subtherapeutic dose/ medicine use without indication/duplication of therapy	95	16
Risk of side effects/ adverse reactions/overdose/medicine interaction	62	11
Cost-effectiveness issues	23	4

cluding prescribed medicines, medicines purchased over-the-counter and complementary medicines. The pharmacist completed a pharmaceutical care plan for each patient and any medicines no longer required were collected for destruction with the patient's consent.

**Documentation** An A4 pharmaceutical care plan, based on the format used at the Robert Gordon University, Aberdeen, was devised to simplify recording of information. Pharmacists were asked to record all the patient's current medication, to note compliance, indication, understanding, efficacy, side effects and to record problems and advice given to each patient at interview. Pharmaceutical care issues, actions and outcomes were listed on the care plan. An anonymised copy with an audit code, the time taken to complete the review and the need for a domiciliary visit was then faxed to the pharmaceutical care model scheme co-ordinator to collect data for audit purposes.

**Pharmaceutical care issues** Interventions and referrals to the GP were documented on the care plan. The pharmacist submitted care issues on the Grampian pharmacist referral form to the patient's GP or telephoned the GP as appropriate. The GP was asked to respond to the community pharmacist and advise on the action taken or to be taken. The pharmacist then followed up the outcomes with the patient to ensure agreed actions were undertaken.

**Medication chart** Individual medication charts were issued to all patients after any changes in medication had been agreed with the GP and the patient.<sup>10</sup> Patients were asked to share the information with other health care professionals and take the chart with them, along with all their own medicines, if attending hospital. If medicines were changed community pharmacists were expected to update the chart as necessary.

## Outcomes

From first training sessions in September 2002 to March 2004, 134 pharmacists have attended training and 74 community pharmacies in Grampian (60 per cent) have registered for the frail elderly pharmaceutical care model scheme. Between December 2002 and March 2004, 44 pharmacies have submitted 250 care plans for audit. The number of care plans submitted by pharmacies is shown in Table 1.

A total of 250 patients, average age 77 years (range 65 to 94 years), had medication reviews and pharmaceutical care plans submitted for audit. Data for these 250 patients was analysed by the scheme co-ordinator.

A total of 161 patients (64 per cent) had a domiciliary visit and the other 89 (36 per cent) were assessed in the pharmacy. There were two reasons for the high percentage of domiciliary visits: some of the elderly patients were unable to access the pharmacy and some of the pharmacies did not yet have a suitable consultation area.

**Patient referral** Of the 250 patients who were referred, 186 (75 per cent) were referred by community pharmacists, 31 (12 per cent) by nurses, 20 (8 per cent) by GPs, seven (3 per cent) by carers, three (1 per cent) by hospital pharmacists and three (1 per cent) by family members.

**Time for medication review** Medication review took an average of 39 minutes (from 15 to 120 minutes) per patient to complete. This was the time estimated by the pharmacists and included time to complete all documentation and travelling time for domiciliary visits. Average time to complete a medication review in the pharmacy was 22 minutes (from five to 60 minutes)

**Pharmaceutical care issues** The 250 patients were on 2,284 medicines (average of nine, range four to 21) and 570 pharmaceutical care issues were identified (two to three per patient) (see Table 2 and Panel 1). Of 378 pharmaceutical care issues referred to the GP, 336 (89 per cent) were accepted and 42 (11 per cent) had no change or were awaiting reply.

**Costs** Twenty-three per cent of care issues addressed cost savings. Estimated cost savings for 250 patients was £872.75 for 28-day supply, equating to £10,473 per annum or £42 per patient per annum. Cost savings were achieved by stopping medicines not required and by dose optimisation.

## Panel 1: Examples of pharmaceutical care issues

### Compliance

- A diabetic patient had missed doses of diabetes medicines because he had not reordered his prescriptions on time. The pharmacist arranged for a new prescription and supply.
- A patient two weeks post hospital discharge was taking the same dose of diuretic as before admission although the dose of furosemide had been reduced from 60mg to 40mg by the hospital consultant. The pharmacist contacted the patient's doctor, advised the patient to take only one 40mg tablet and removed excess 20mg furosemide tablets.

### Risk of side effects/adverse reactions/ overdose/medicine interaction

- One woman had three similar medicines from same class and did not realise — Vioxx, Napratec (prescribed on different dates) and ibuprofen (purchased). After referral to the GP the non-steroidal anti-inflammatory drugs and omeprazole were stopped because the patient no longer required them.
- A patient was being treated for hypertension with bendroflumethiazide, ramipril, atenolol and amlodipine and was also prescribed indometacin for gout. The pharmacist discussed the issues with the GP and bendroflumethiazide, which was exacerbating the gout, and indometacin were withdrawn.

### Improper medicine selection/subtherapeutic dose/medicine use without indication/ duplication of therapy

- A patient had been taking Colpermin for over one year was referred to the GP. The doctor withdrew the Colpermin because it is only licensed for use for up to three months.
- Several patients were ordering medicines regularly and not taking them, eg, senna, amitriptyline, tramadol, co-codamol, sertraline, Fybogel, bisacodyl. These were stopped by the GP.

### Untreated indication/failure to receive medicines appropriately

- A woman taking prednisolone long term for temporal arteritis was not on treatment for osteoporosis prevention. She was referred to her GP and started on Calcichew D3 Forte and a bisphosphonate.

## Discussion

Forty-six per cent of care issues addressed concerned compliance. Patient interview enabled the pharmacist to identify problems and provide ongoing support for patients experiencing problems in taking their medicines, eg, reading and understanding directions, taking medicines at the right time, ordering appropriate quantities, ordering late, missing doses etc. Community pharmacists were also able to identify other important clinical issues, such as adverse effects of NSAIDs, and identify patients with angina not on a statin.

In the Grampian pharmaceutical care model scheme, community pharmacists do not have ready access to patients' medical notes. In most cases asking appropriate questions at interview enabled the pharmacist to identify a high proportion of medicine related problems.

One of the other key elements of the medication review process is documentation. Completing a written pharmaceutical care plan enabled the pharmacist to keep a record of medicines patients were taking. This also provided an audit tool for recording the outcomes of providing pharmaceutical care.

The intention is to repeat the medication review after 12 months, or sooner if there is a major change in circumstances. Since March 2004, a further 200 care plans for the frail elderly have been completed. In Grampian palliative care and enduring mental illness pharmaceutical care model schemes have been based on the same format — patient counselling, care plan and provision of a medication chart — and 30 care plans have been completed. Pharmaceutical care plans have

been devised for palliative care and chronic obstructive airways disease, prompting specific counselling advice to be given by community pharmacists. Dispensing technicians have recently attended training on completion of medication charts.

Reports from pharmacists involved in the scheme are positive. They believe their professional image has been enhanced, there is better communication with GP practices and patients appreciate help on a one-to-one basis. Time management was the major problem and pharmacists preferred to do reviews when two pharmacists were on duty. Some of the domiciliary visits had to be done outwith pharmacy opening times.

In the proposed new community pharmacy contract for Scotland it is expected that medication review will be an essential component of the proposed chronic medication services for patients. We have shown that

community pharmacists can undertake planned medication review as part of their day-to-day practice. Connection to NHSnet in the near future will allow clinical information to be shared with other professionals. A national electronic pharmaceutical care plan is being developed.

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