# What interventions might arise from clinical medication review to help elderly care home residents?

Extensive research and practice experience with care home residents have led Dave Alldred and Claire Standage to identify clinical areas and therapeutic issues that most often need intervention when reviewing these residents. In this article they share their findings with us, giving us pointers for which patients and conditions to watch out for and what interventions are typically needed

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## Cardiovascular medicines

In a recent randomised controlled trial of medicines interventions made by a pharmacist for elderly care home residents, around 25% involved cardiovascular medicines.[1] This is unsurprising because one quarter of all medicines prescribed for care home residents are for the cardiovascular system.[1] One of the main reasons for intervening in this class of medicines is to conduct monitoring for efficacy and/or harm, for example, monitoring urea and electrolytes (U&Es) for diuretics and ACE inhibitors. Diuretics, along with warfarin and non-steroid anti-inflammatory drugs (NSAIDs), are responsible for two thirds of medicine-related hospital admissions.[2] It is therefore important to ensure that they are prescribed and monitored appropriately to avoid dehydration and hypotension. Evidence-based guidelines for monitoring drug therapy are generally lacking, but yearly U&Es for diuretics and ACE inhibitors have been recommended.[3]

Clinical inertia, whereby effective medicines are not started or intensified,[4] is prevalent in general — and possibly more common in the care home setting. Research has shown that care home residents receive less beneficial medicines than their counterparts who live in their own homes.[5] One example of this is the failure to start ACE inhibitors or beta-blockers for established heart failure, or to titrate the dose to an evidence-based dose. Similarly, this can apply to antihypertensive therapy, secondary prevention of vascular events with antiplatelets and statins, or antidiabetic therapy. Initiation of therapy or dose adjustments are often needed. However, it must be appreciated that evidence-based guidelines may not necessarily represent the best choice on an individual basis. This is particularly pertinent in the care home setting when factors such as prognosis and quality of life are important (see previous article in this series[6]).

Warfarin is a leading cause of medicine-related hospital admission and it is crucial when reviewing residents who are prescribed warfarin that safe practices are used. It is essential to establish who is conducting monitoring and how dose adjustments are communicated and implemented. Particular attention should be given to drug interactions and changes in diet, which may affect the International Normalised Ratio (INR).

## Psychotropic medicines

Psychotropics include antipsychotics, antidepressants and hypnotics. Antipsychotics are often prescribed to treat non-cognitive symptoms of dementia, which may include hallucinations, delusions, anxiety, agitation and aggression. These symptoms may be manifest in challenging behaviour such as wandering, hoarding, sexual disinhibition, apathy and shouting. The efficacy of antipsychotics for the treatment of non-cognitive symptoms of dementia is limited and there is considerable evidence that they are a source of harm. For example, they accelerate cognitive decline and increase the risk of strokes, falls and death.[7] The Committee on Safety of Medicines advised in 2004 that risperidone and olanzapine should not be used in patients with dementia because of a threefold increased risk of stroke.[8] However, it is possible that this applies to all antipsychotics and they should only be used first-line when challenging behaviour causes severe distress or there is an immediate risk of harm to the person with dementia or others.[7] Antipsychotics should be avoided in patients with dementia with Lewy bodies (DLB) if possible because of an increased risk of severe adverse events.[7]

The risk and benefits of antipsychotic treatment must be considered before prescribing, and if they are chosen for use assessment, monitoring and regular review is crucial (see Box 1). Antipsychotics can be withdrawn in up to 50% of patients without adversely affecting behaviour and functioning.[9,10] However, you will often need the agreement of care home staff to withdraw antipsychotics and you may need to educate them about risks and benefits. Non-pharmacological alternatives advocated include aromatherapy, multisensory stimulat-

ion, music therapy, animal-assisted therapy and massage[7] — but such services are often not available in care homes.

Depression is underdiagnosed and suboptimally treated in older adults.[11] Difficulty in diagnosing depression may be compounded by co-existent dementia. Despite the misconception that people with dementia cannot be depressed evidence shows that patients with dementia respond to antidepressants and should be treated in the same way as those without dementia.[11]

Pharmacological intervention should be made for moderate to severe depression only. There is no evidence of superiority of one type of antidepressant over another and therefore choice is based on adverse effects. Consequently, selective serotonin reuptake inhibitors (SSRIs) such as citalopram or fluoxetine are first line. Attention should be paid to side-effects and drug interactions. Response to treatment should be assessed after six weeks in older adults and should be reassessed after a further six weeks if a partial response is seen. If more than two episodes of depression with significant functional impairment have occurred in the recent past then treatment should be continued for two years after remission. If a first episode of depression occurs, treatment should be continued for six months after remission and then you should consider withdrawing antidepressants over four weeks. Before withdrawing treatment, residual symptoms and current psychosocial difficulties should be considered.[11] Withdrawal symptoms will need to be managed appropriately if they occur.

In our experience, newly admitted care home residents often need antidepressants because they have depression precipitated by recent life events, which may be the cause of their admission. However, residents are often not reviewed after first episodes and remain on treatment long term.

In a study published by Zermansky and colleagues,[12] 25% of care home residents were receiving benzodiazepines [unpublished data], the majority prescribed as a hypnotic. Benzodiazepines can cause paradoxical agitation in the elderly and can increase the risk of falls, and should therefore be withdrawn if possible. Many care home residents and staff are resistant to the suggestion of stopping benzodiazepines and a discussion of the risks and benefits should be undertaken. If residents and staff agree to try to withdraw benzodiazepines, adequate support should be given.

In general, pharmacists are less confident in making therapeutic interventions in psychiatric conditions. If you plan to review care home residents, undertaking extra training in the diagnosis, assessment and treatment of conditions such as dementia and depression will improve your input and value to residents and the health care team.

### Pain

Pain control in care home residents has received media attention for being far from optimal. A recent study in a UK nursing home suggested a prevalence of pain in residents of 37%.[13] Postulated reasons for the underdiagnosis of pain in such populations include a high level of cognitive impairment making self-reporting of pain difficult and a lack of effective pain assessment techniques.[13] The study revealed that residents with more severe cognitive impairment are less likely to be prescribed and receive opioid or non-opioid analgesics, despite the fact that reports of pain intensity remain constant across all levels of cognitive impairment.[14] Opioid containing analgesics also appeared to be avoided in patients with any degree of cognitive impairment, reasons for the this were cited as: the pain may not warrant it; the patient may not communicate the degree of pain accurately; or the patient, relatives or health care professionals may not want an opioid to be used because of the risk of side-effects.[14]

To compound the problem, evidence has also shown that when analgesics are prescribed in care homes they are often done so unsafely.[15] A study of 934 UK residents in 22 nursing homes found that paracetamol was prescribed in a way that could result in more than 4g being admin-

**Box 1. Pharmacological interventions for non-cognitive symptoms of dementia[7]**

Consider medication for non-cognitive symptoms or behaviour that challenges in the first instance only if there is severe distress or an immediate risk of harm to the person with dementia or others.

**Antipsychotics**

Do not use antipsychotic drugs for mild-to-moderate non-cognitive symptoms in:

- dementia with Lewy bodies, because of the risk of severe adverse reactions
- Alzheimer's disease, vascular dementia or mixed dementias, because of the increased risk of cerebrovascular adverse events and death.

Consider antipsychotics for severe non-cognitive symptoms (psychosis and/or agitated behaviour causing significant distress) only if:

- risks and benefits have been fully discussed; assess cerebrovascular risk factors and discuss possible increased risk of stroke or transient ischaemic attack and possible adverse effects on cognition
- changes in cognition are regularly assessed and recorded; consider alternative medication if necessary
- target symptoms have been identified, quantified and documented, and changes are regularly assessed and recorded
- comorbid conditions, such as depression, have been considered
- the drug is chosen after an individual risk–benefit analysis
- the dose is started low and titrated upwards
- treatment is time limited and regularly reviewed (every three months or according to clinical need).

In dementia with Lewy bodies monitor for severe untoward reactions, particularly neuroleptic sensitivity reactions (development or worsening of extrapyramidal features or acute, severe physical deterioration).

istered in 24 hours in one-fifth of cases.[16] There is clearly an issue surrounding pain management in care homes and you may wish to take the opportunity to explore pain control and response to analgesics. We have experience of a patient receiving regular co-codamol originally prescribed for a tooth abscess that had resolved some four months earlier. Evaluating analgesics, both for efficacy and adverse effects, is a worthwhile exercise, as is establishing the ongoing need for regular analgesia. Paracetamol is often given as a homely remedy (usually an over-the-counter medicine that can be administered by care home staff without a prescription within a protocol agreed with the responsible GP) in the care home environment and this should be considered in order to ensure excess quantities are not being administered.

## Medication with specific administration instructions

In February 2006 the Commission for Social Care Inspection (CSCI) published a report stating that half the care homes in England were failing to meet the national minimum standards for administration of medicines.[15] The report highlighted that training around medicines is often inadequate and CSCI have subsequently written recommendations for training of care home staff regarding medicines, which clarify who should administer medicines and what level of training they require.[17] Staff responsible for giving medicines may be unaware of special administration instructions for certain medicines and may need further education to ensure that these medicines are administered correctly.

It is well known that elderly patients often struggle to use inhalers. They may lack the physical strength to activate aerosols or remove caps and cognitive impairment may limit their understanding and recall of the correct inhaler technique. Patients aged less than 65 years have been found to be significantly better at using inhalers than older patients so it comes as no surprise that carers are often asked to assist patients to take their inhaled medicines.[18] Medication review is an opportunity to check inhaler technique and identify and correct any problems. There are many inhalers available and the most suitable type for an individual should be established and recommended.

When staff are assisting residents with inhalers it is important that they understand how to do so. Our observations in care homes have identified that both residents and care home staff can have poor inhaler technique. There are currently two spacer devices available for use with metered dose inhalers, Volumatic® and Aerochamber®, and these devices relinquish the need for inhaler activation/breath co-ordination. Both devices work best if one actuation is released at a time and inhaled as soon as possible — and this is often not appreciated by care home staff. The Aerochamber® contains a whistle, which sounds as an alert to make the patient aware they are breathing in too quickly.[19] There appears to be a common misconception that the whistle indicates good technique and hence residents are often incorrectly encouraged to make the Aerochamber® 'sing' by well-meaning care home staff. Care homes can end up with a huge stock of reliever inhalers for patients because they are often ordered as the same time as preventers despite not being used regularly, hence you may wish to take this opportunity to assess stock control.

Bisphosphonates are being prescribed more frequently to treat osteoporosis and prevent fractures, but their complex administration instructions can prove challenging for care home residents and staff. They are usually prescribed weekly by the GP with no further administration instructions indicated on the prescription. Current labelling guidance does not require the pharmacist to include any additional directions or administration instructions on the pharmacy label for bisphosphonates. Although the *British National Formulary* recommends counselling patients[20] this is difficult to achieve in practice because the community pharmacist does not generally consult residents on a regular basis.

Bisphosphonates are often dispensed into monitored dosage systems where they are organised to be given at the same time as other medicines including calcium preparations. Once dispensed into these systems, the patient information leaflet is easily lost and staff can be unaware of the special administration instructions. We have witnessed bisphosphonates being given at the same time as other medicines, and to residents eating their breakfast, on many occasions. Community pharmacists dispensing for care homes could assist by ensuring that the medication administration record chart (MAR) contains administration instructions pertinent for these medicines.

## Falls

Falls are the leading cause of morbidity and mortality in patients aged more than 75 years.[21] A randomised controlled trial in care home residents showed that pharmacist-led clinical medication review produced a significant reduction in falls (relative risk 0.59, $p<0.0001$).[12] Considerations for the medication review with respect to falls are two-fold. Firstly, the aim should be to reduce to a minimum any medication that is likely to increase the risk of falls including any that cause side-effects such as sedation, confusion, blurred vision or hypotension. Psychotropic medications in particular, increase the risk of falling and this should be considered.[22] Secondly, the need for pharmacological fall or fracture prevention therapy should be evaluated. The risks and benefits of therapy for each individual should be considered, accepting that in some instances treatment may be unnecessary — such as in bed-bound or chair-bound patients — or that the extra tablet burden may reduce a person's quality of life.

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## Vitamin D

There is evidence that supplementation with vitamin D can reduce both falls[22] and fractures[23] in the elderly. A recent meta-analysis of five double-blind, randomised, controlled clinical trials calculated a

**Box 2. Calcium and vitamin D**

**Adcal D3® tablets** [Calcium carbonate 1.5g colecalciferol 10 micrograms (400 units)] TWO daily

**Cacit® D3 effervescent granules** [Calcium carbonate 1.25g colecalciferol 11 micrograms (440 units)] TWO daily

**Calceos® tablets** [Calcium carbonate 1.25g colecalciferol 10 micrograms (400 units)] TWO daily

**Calchew D3 forte® tablets** [Calcium carbonate 1.25g colecalciferol 10 micrograms (400 units)] TWO daily

**Calfovit® D3 powder** [Calcium carbonate 3.1g colecalciferol 20 micrograms (800 units)] ONE daily

number needed to treat of 15 to prevent one fall.[22] A randomised, controlled clinical trial of 3270 mobile elderly women aged between 69 and 106 years living in nursing homes showed that provision of calcium plus vitamin D3 resulted in a significant reduction in both hip fracture and non-vertebral fractures after 18 months, and this difference was sustained at three years.[23]

The studies use a variety of doses and preparations of vitamin D with or without calcium but 800units of colecalciferol with 1200mg of calcium carbonate daily has consistently been found to be most effective.[24] The variety of calcium and vitamin D preparations available makes selecting the correct preparation difficult and in practice the combination is still prescribed sub-optimally. Box 2 shows the available brands of calcium and vitamin D and their doses necessary to give appropriate amounts. From experience it appears to be the effervescent granules that are most frequently prescribed incorrectly.

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## Osteoporosis therapy

It is estimated that 50% of women aged 80 years or more have osteoporosis and fracture is the most common complication that can have an adverse effect on patient morbidity and mortality in addition to being a burden on NHS resources. The annual cost of these fractures is estimated to be more than £1.8 billion, which with an aging population is likely to rise.[24] NICE guidelines on the secondary prevention of osteoporotic fragility fractures in post-menopausal women currently suggest bisphosphonates as first-line therapy.[25] When bisphosphates are prescribed you should ensure that patients maintain a satisfactory intake of calcium and vitamin D. Where this is not the case, such as in care home residents with poor appetites, supplementation is needed. This is a common recommendation following a medication review for patients in this setting.

## Conclusions

We hope this article has given some useful, practical advice for conducting medication reviews in care homes. The interventions discussed are by no means exhaustive and each resident should be considered as an individual. We hope by highlighting these issues it enables readers to be aware of some of the more common areas for intervention and this may assist in targeting specific residents where resources are limited. ✣

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