



MANAGING AND ADMINISTERING MEDICATION IN CARE HOMES FOR OLDER PEOPLE

A report for the project: 'Working together to develop practical solutions: an integrated approach to medication in care homes'.

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Managing and administering medication in care homes for older people

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Key messages

1. Older people in care homes are among the most vulnerable members of our society, reliant on care home staff for many of their everyday needs. A combination of complex medical conditions may lead to the need to take multiple medications with care home residents taking 7-8 medications on average. This 'polypharmacy' in turn increases the risk of medication error. Medication errors may occur as a result of a failure in prescribing, dispensing, administering or monitoring medication.
2. This report focuses on the administering of medication in care homes. It looks at the prevalence of error, common causes and how these can be addressed, through simple, low cost changes in practice, appropriate training and more substantive changes in care home systems.
3. Respect for the older resident and their dignity and rights as an individual should remain at the heart of the medication process with medication being administered on behalf of the resident rather than to the resident.
4. The principle of the 5 Rs of correct medication administration in care homes remains sound, right resident, right medication and right dose by the right route at the right time. In addition, the welfare, rights and voice of the older person receiving medication have to remain at the heart of the process.
5. The care homes use of medicines (CHUMS) study observed that errors occur on 8.4% of medication administration events. That would mean that a care home resident being administered medication three times a day would be 99.9% certain to receive at least one medication administration error every month.
6. The most common types of medication administration error are incorrect crushing of medication, not supervising the intake of medication particularly for residents with dementia, incorrect timing, omissions and wrong dose.
7. Errors are more common in the morning than later in the day.
8. There is conflicting evidence of whether medication administration errors are more likely in residential or nursing home care, and there is no obvious relationship between medication errors and type of care home ownership, public, private or voluntary.
9. Inhalers and liquid medications are much more likely to give rise to medication errors than tablets but it is unclear whether monitored dosage systems (MDS) are inherently safer. Antibiotics may be particularly prone to error with a number of doses being missed over the course of treatment.
10. A commonly cited cause for medication errors is interruptions during the preparation and administration of drugs, with interruptions taking up around 11% of medication administration time. Interruptions are usually by other care home staff. Another commonly cited cause is a breakdown in communication about medication between GP, hospital, pharmacy and care home

during a period of transition, when the resident first enters a care home or returns to the care home after a period in hospital.

11. Residents should be involved in the medication process. A mentally alert resident, or fully informed relative or friend may be the final check against medication error in the care home, but many residents are passive in the medication process saying "I just take what I'm given".
12. The administering of medications in care home is currently (October 2011) covered by regulation 13 of the Health and Social care Act 2008 (Regulated Activities) Regulations 2010 and compliance is monitored by the Care Quality Commission.
13. Standards and guidance on the handling and administering of medication in care homes are available from a number of sources. The Royal Pharmaceutical Society (of Great Britain) [2007] and the Nursing and Midwifery Council [2008] have published standards and guidance on medication in care homes. The Royal Pharmaceutical Society [2011] has also published guidance on good practice when patients/residents transfer between care providers. Many primary care trusts have published guidance and templates of policies and procedures for care home to adopt, some of which are listed in this report, and the Social Care Association [2008] has outlined twelve principles of good practice that equally apply to care homes.
14. Simple, low cost options that may reduce the chance of administration error
 - Distribute fresh water to all residents before the medication round
 - Avoid interruptions by the carer administering medication wearing a brightly coloured sleeveless jacket indicating that medication is being dispensed and requesting they should not be disturbed
 - With the agreement of the prescriber, administer medication that does not need to be administered in the morning, later in the day
 - Ensure that procedures are in place to record the use of PRN (as required) medication on the medication administration record (MAR) chart so that stock levels are maintained
 - Where this is not already the case, request that medicine /medication administration record (MAR) charts be supplied in a printed form to avoid incorrect transcribing and difficult to read handwriting
 - Request that the pharmacist supplies a copy of the original medication information leaflet (indications, contra-indications and method of administration) when a medication is first supplied to an individual resident as part of a monitored dosage system
15. Other suggested changes.
 - Giving medication to the wrong resident is rare but serious when it occurs. One study found that, over a three month period, over one half of residents were exposed to an attempt to give medication to the wrong resident. Attaching a photograph of the resident to the

medication administration record (MAR) chart is not a new suggestion but may help to avoid such errors.

- Staff awareness is key to avoiding errors. A programme of initial and refresher training in such things as the importance of timing and how to handle inhalers should be established. Training may be available through local community pharmacies or through certified programmes established by local authorities or PCTs.
- The use of medication trolleys may be more appropriate for hospital wards than care homes. There is evidence that storing a resident's medication in a locked cupboard in the resident's own room, instead of using a trolley, may reduce the chance of error.
- GPs make few home visits and usually consult patients' medical notes on the computer system at the surgery. Care home residents, on the other hand, are often unable to visit the GP and require a visit to the care home. Where possible the establishment of an IT link between the care home and the surgery computer system, so that GPs can consult patient notes while on site, may help to reduce medication errors.

16. In addition to the individual practical suggestions above there is a need to strengthen medication systems within the home. There should be an individual in the care home who takes responsibility for the medication processes and their implementation. In a small care home this may be the registered manager but in a larger home, while the manager retains ultimate responsibility, this may be delegated to a suitably qualified, responsible person. It is also recommended that an independent review of the care home's processes be commissioned from an outside person for example a pharmacist, to ensure that internal processes and communication with GPs, pharmacists and the PCT is effective.

17. Technology based solutions have been shown to reduce medication administration errors, but they will only be embraced by care home staff if they are reliable, easy to use and do not add significantly to staff workload for a particular task.

1. INTRODUCTION

Most older people in care homes are taking several medications and errors may arise at the point of prescribing, dispensing, administering or monitoring that medication. Recent research has highlighted the unacceptably high levels of medication error.

This report, which focuses on the administering of medication in care homes, was prepared for the 'Working together to develop practical solutions: an integrated approach to medication in care homes' project funded by the Department of Health. The report, which is intended for care home owners, managers and senior staff, draws together information from a variety of sources to describe the extent of the problem, identify common causes and suggest simple and practical ways of reducing the risk of error when administering medication.

The role of care homes and the type of care provided has been changing. Residential and nursing home care for older people has developed from being an alternative form of accommodation in older age to a provision mainly for the frailest older people with high support needs or for those with mental health conditions including dementia, towards the end of life. The number of care home places has been declining. In 2011, the number of places available in residential and nursing care in England was fewer than 470,000¹ falling from a peak, in 1996, of 575,500 for the UK as a whole, as more and more older people are being cared for at home.² Care home residents are often those who can no longer be cared for at home because they have severe or multiple medical conditions. The average length of stay in a care home is getting shorter and, if present trends continue, will be less than one year by 2015.²

Older people in care homes are among the most vulnerable members of our society. Older care home residents, are generally unable to leave the care home unaided to visit a GP or hospital and as a result of complex medical needs are, on average, taking 7-8 medications. This makes older residents particularly dependent on the support of care home staff when taking medication. The proper management and administering of medications is a key part of good care for older people in care homes but there is evidence that errors in the administration of medication are not uncommon.

2. THE EXTENT OF THE PROBLEM

The importance of adopting appropriate medication procedures in care homes was highlighted by a key research report, the care home use of medicines (CHUMS) study³. This study found that care home staff may spend as much as 40-50% of their time on medication related activities with errors occurring on 8.4% of observed medication administration events. That would mean that a resident receiving medication three times a day would have an 84% chance of receiving at least one

¹ Care Quality Commission, 2011

² Centre for Policy on Ageing, 2011

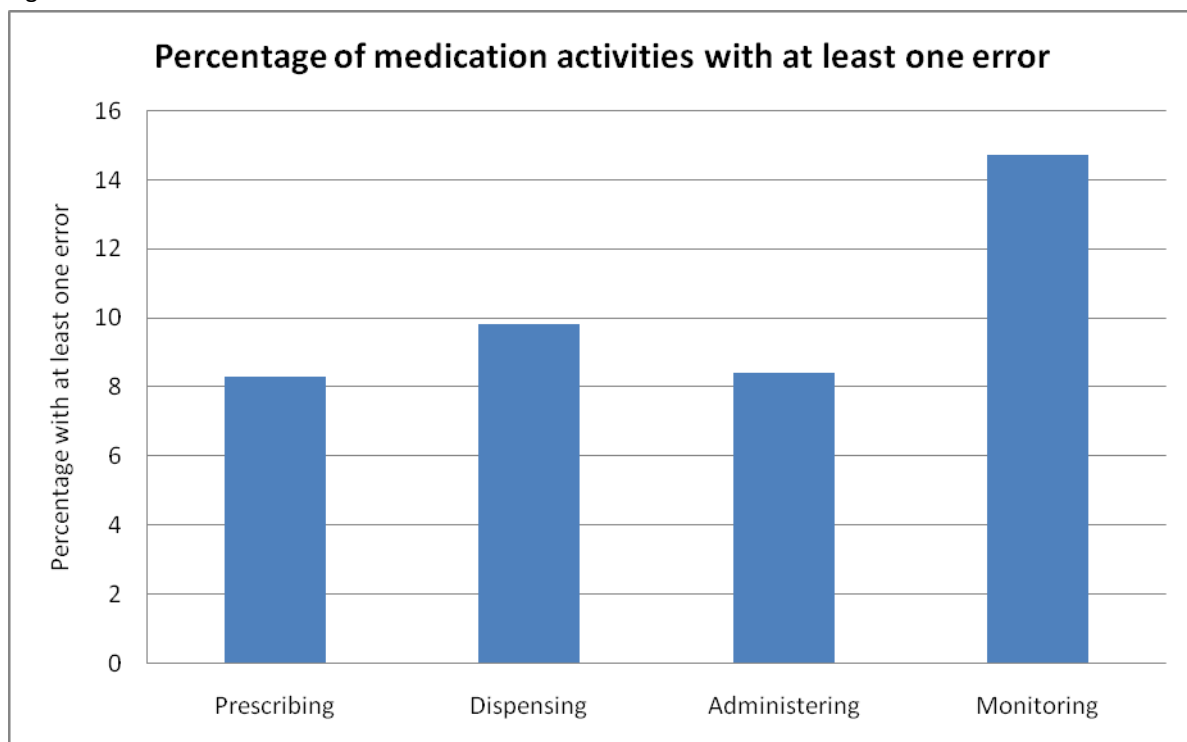
³ Alldred, Barber, Carpenter et al, 2009

medication administration error every week and would be virtually certain (99.9% chance) of receiving at least one medication administration error every month.

A UK evaluation of a barcode medication management system in long-term residential care^{4,5} identified 6 – 7 medication administration events per resident per day with around 2 errors prevented by the system per resident per month. The most common error was giving medication at the wrong time although, over a three month period over one half of residents (52%) were exposed to an attempt to give medication to the wrong resident.

Not all medication errors occur in the care home. Medication errors may occur at the time of prescribing, dispensing or administering the medication or through inadequate monitoring of a care home resident following medication that requires monitoring. [Figure 1] While care home staff may only have direct responsibility for administering and monitoring medication, good communication between care home staff and the prescribing GP or hospital, the dispensing pharmacist and other health care professionals can be just as important in reducing the chance of errors. The care home use of medicines (CHUMS) study³ found that one half (50%) of these communication errors were between the care home and the pharmacy.

Figure 1



Source: CHUMS study, 2009

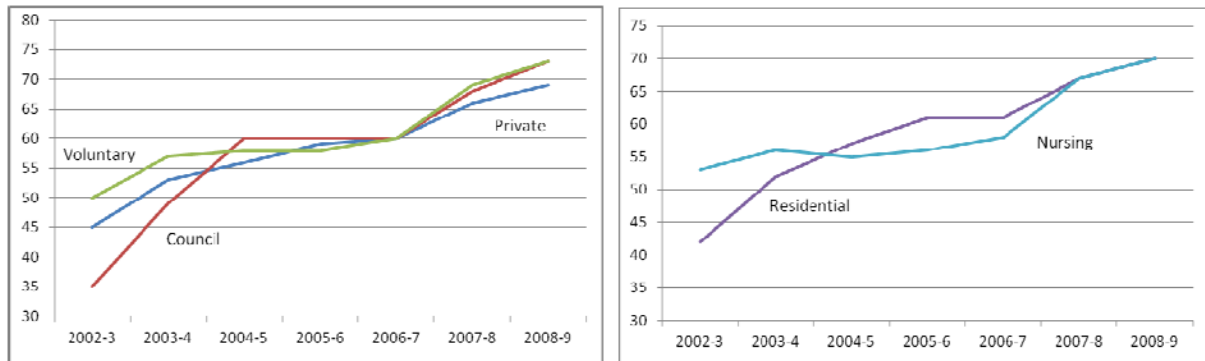
There are signs that medication standards in care homes have improved over the past decade but there is still room for further improvement. Under its previous regulatory framework, the Care

⁴ Szczepura, Wild and Nelson, 2010

⁵ Szczepura, Wild and Nelson, 2011

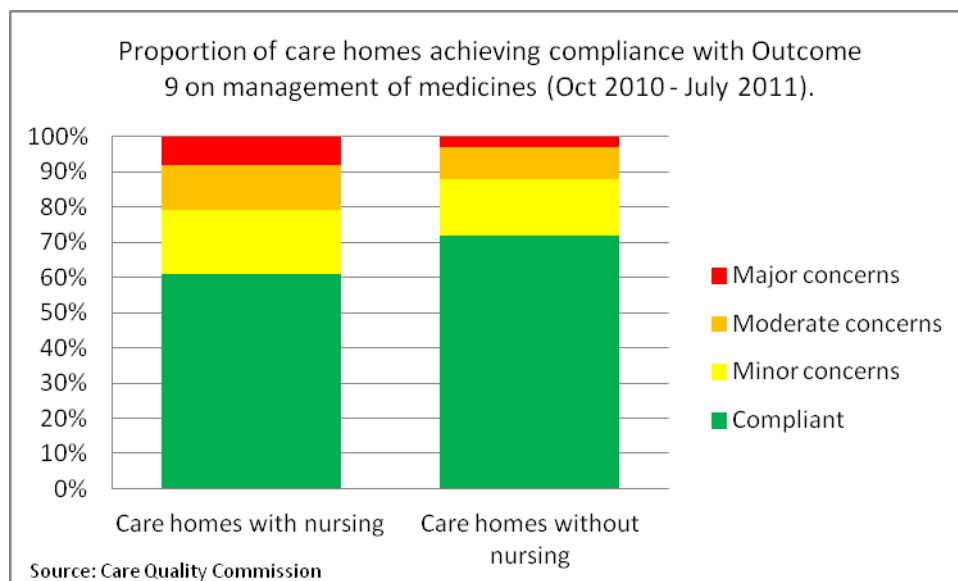
Standards Act 2000, the Care Quality Commission (CQC) reported that the proportion of care homes for older people reaching or exceeding the national minimum standard on medication had risen from 45% in 2002-3 to 70% in 2008-9, an undoubted improvement but leaving 30% of homes still not reaching the standard.

Figure 2
Percentage of care homes for older people meeting National Minimum Standards on medication



Source: Care Quality Commission

Figure 3



More recently, under the Health and Social Care Act 2008 regulatory framework, CQC found that, between October 2010 and July 2011, the proportion of all care homes achieving full compliance with Outcome 9, on management of medicines, was 61% for care homes with nursing and 72% for care homes without nursing [Figure 3], leaving roughly 30% - 40% of homes not fully compliant.

In a survey of care homes carried out in 2010/2011 but not published until 2012⁶ the Care Quality Commission reported the extent to which medication policies were in place in care homes. Most homes (93%) always record medicines errors and have arrangements in place to learn from those errors but while 85% of homes have a policy on homely (over the counter / non-prescription) medicines and 84% kept an anti-coagulation record only 57% of homes have a policy covering decisions to administer PRN (as required) medication. Although 39% of homes reported that getting medication to residents on time was 'sometimes' or 'often' a problem, less than one half of homes (49%) record the actual time of administration of medicines.

3. THE SOURCES OF MEDICATION ADMINISTRATION ERRORS

Common causes

A study of Dutch care homes¹⁴ found the most common causes of medication administration error were incorrect crushing of medication, not supervising the intake of medication, particularly for residents with dementia, and incorrect timing measured as medication being over one hour early or late. The CHUMS⁷ study found that nearly one half (49.1%) of administration errors were 'omissions' and more than one fifth (21.6%) were 'wrong dose'. They identified areas for priority attention as the Medication Administration Record (MAR) chart and in particular discontinued drugs, the medication round and in particular interruptions, and communication between the pharmacy and the care home.

Type of care home

There is conflicting evidence of whether, for older people, residential homes or care homes with nursing perform better in the handling and administration of medicines. CQC reported that, between 2002 and 2009, residential homes initially performed less well than nursing homes in meeting national minimum standards but improved substantially over the period and, by 2009, were very similar in their outcomes (Figure 2). However, in the differently formulated 2010-11 CQC measures, nursing homes overall performed less well than care homes without nursing (Figure 3). This is at variance with the CHUMs study⁸ which observed that older people in residential care, received twice as many medication administration errors (MAE) as older residents in nursing care even though they made up just 54% of the residents studied. It is however in line with a 2010 study of the effectiveness of pharmacy-managed barcode medication management systems⁹ which found that the risk of a potential medication administration error was 10% higher for residents in a nursing home than for those in residential care.

A recent US study¹⁰ found that although there no direct association between the type of ownership of a home (public / voluntary / private) and the number of medication errors, a not-for-profit home

⁶ Care Quality Commission, 2012

⁷ Barber, Alldred, Raynor et al, 2009

⁸ Alldred, Barber, Carpenter et al, 2009

⁹ Szczepura, Wild and Nelson, 2010

¹⁰ Lane, 2010

that was part of a chain had only half the level of medication errors compared with a for-profit home that was not part of a chain.

Staff training and qualifications

Common sense would indicate that appropriate staff training in the role, effects and proper administration of medication, for example in the correct use of inhalers, would promote better understanding among care home staff and reduce the chances of medication error. The Care Homes Use of Medicines (CHUMS) study⁸ highlighted this issue stating that 'staff numbers, skill sets and training may be important determinants' in medication administration error. Training in the use of inhalers and the importance of correct timing of medication were particularly mentioned.

Studies in the USA^{11,12} have found conflicting evidence about whether the level of qualification of care home staff has any influence on medication errors. A study in Dutch care homes¹⁴, however, found that care home workers with more experience made fewer errors and a recent study in the USA¹³ found that, in assisted living, workers with better training had only half the medication administration error rate of those that were less well trained.

Time of day

There are indications that medication administered in the first half of the day (7am to 2pm) is twice as likely to give rise to errors as medication administered in the evening¹⁴. The reasons for this are unproven but may relate to the morning being a busier part of the care home day.

Formulation and delivery process

Crushed medication is nearly eight times more likely than tablets to give rise to a medication administration error¹⁴. A follow up analysis of the CHUMS study data¹⁵ found that inhalers and liquid medicines were associated with significantly increased odds of an administration error. Inhalers were the worst source of error being over 20 times more likely than MDS tablets to give rise to an error in the administration process. Topical (eg eye drops), transdermal (creams, ointments etc) and injectable medicines were around 14 times more likely to give rise to an error than MDS tablets but, because the numbers were small, the results were not statistically significant. Common faults with liquids were inaccurate measuring and not shaking the bottle.

Antibiotics

The administering of antibiotics in care homes may be particularly prone to error. A study in Wales¹⁶ of the administration of antibiotics (a fixed number of doses administered at regular intervals) found that nearly one fifth (18%) were administered inappropriately, with an over-run of more than one

¹¹ Scott-Cawiezell et al, 2007

¹² Hughes, Wright and Lapane, 2006

¹³ Zimmerman et al, 2011

¹⁴ Van den Bemt et al, 2009

¹⁵ Alldred et al, 2011

¹⁶ Hinchliffe, 2010 referencing Hussain and Walker, 1999

day observed, indicating that doses had been missed. A 2009 study in Dutch nursing homes¹⁷ found that antibiotics were over ten times more likely to generate an administration error than a standard gastro-intestinal medication.

Interruptions

When asked about barriers to safe medication, the most common barrier to the safe preparation of medications cited by nurses in Belgian care homes was interruptions while preparing and administering medication¹⁸. Interruptions were cited as a barrier by over 40% of nurses. A Canadian 'time –motion' study in a long-term care facility¹⁹ found that interruptions accounted for 11.5% of medication administration time with at least one interruption in 79% of medication rounds. A UK study of hospital medication rounds²⁰ found similar results with interruptions taking up 11% of the time on each medication round. The UK CHUMS study of medication in care homes²¹, described interruptions as 'frequent' or 'constant', particularly during the morning drugs round. Their analysis of error reports identified interruptions as the most significant contributor to error on the medication round with an interruption occurring, on average, every 15 minutes. Over 60% of interruptions were by other staff with over 90% of staff interruption being about operational issues. Fewer than 9% of interruptions were verbal requests from residents.

Transitions and communication

It is widely acknowledged that residents may be particularly at risk of medication error during a period of transition, either when the resident first enters a care home or when a resident returns to a care home after a spell in hospital. This may be as a result of poor communication about medication between the resident's own GP and the care home. Following a period in hospital, medical notes, including notes of any change in medication, may be sent to the resident's GP and not necessarily immediately follow the resident to the care home. Over two thirds of the nursing homes in a 2010 US study²² reported a medication error during the first seven days of a resident's admission. The CHUMS study²³ in the UK found that 29% of communication related medication errors were between the care home and the GP surgery although this related to all residents not just new or returning residents and was less than the 50% of communication related medication errors that were between the care home and the pharmacy.

An Australian study²⁴ found improved health outcomes for residents for whom, on transfer from hospital, the care home was sent a medication transfer summary and there was a pharmacist led medication review within 10-14 days of admission to the care home.

¹⁷ Van den Bemt et al, 2009

¹⁸ Dilles et al, 2011

¹⁹ Thomson et al, 2009

²⁰ Kreckler et al, 2008

²¹ Alldred, Barber, Carpenter et al, 2009

²² Lane, 2010

²³ Alldred, Barber, Carpenter et al, 2009

²⁴ Crotty et al, 2004 reviewed in LaMantia et al, 2010

The role of the resident

Residents and their relatives should be encouraged to be involved and aware of the medication process with self-medication by residents whenever possible. A mentally alert resident, or relatives and friends who know the resident well, can act as a final check against medication errors. National policy emphasises the involvement of the service user. National Minimum Standards, following the Care Standards Act 2000 and operational until the implementation of the Health and Social Care Act 2008, stated 'Service users, where appropriate, are responsible for their own medication'. The replacement regulations, while less prescriptive, emphasised the involvement of the resident and relatives and friends. 'People who use the services, wherever possible, will have information about the medicine being prescribed made available to them or others acting on their behalf.'

The 'Working together to develop practical solutions: an integrated approach to medication in care homes' project has developed a Residents' Charter to promote a better understanding of how residents can and should be involved in the administration of their medication (see section 6.4).

A 2009 Dutch study of medication errors in nursing homes²⁵ found 'Drug administration errors are less likely to be prevented, because they occur in the last stage of the drug distribution process. This is especially the case in non-alert patients, as patients often form the final barrier to prevention of errors.'

Although a mentally alert resident should be the last check against medication errors, residents often accept, without question, the control of their medication by care home staff. A 2009 study of residents of nursing homes in Northern Ireland²⁶ reported that residents were generally adherent to medication and had little involvement in either the prescribing or administering process. One resident said "I just take what I am given".

The lack of communication and information sharing with relatives and carers, around medication, was one of the main issues raised as a cause of medication errors in care homes in a 2011 study²⁷ of the views of relatives and carers. Residents, relatives and carers, if more fully involved and informed, can contribute better to the identification and elimination of potential medication errors.

PRN (*pro re nata* - when or as required) medication

Because 'as required' medication is only reordered when stock levels require it, it does not form part of the regular 'every time' medication ordering–administering–reordering cycle and cannot be part of a monitored dosage system. It is particularly prone to lapses in keeping adequate supplies of the medication in reserve and is a particular challenge for record keeping.

Prescribing medicine 'as required', for example for laxatives or sedatives is an effective way to treat a resident suffering from an acute or irregular condition. The benefits of flexibility are also open to the disbenefits of misuse. PRN medication should only be offered 'when required', ie when symptoms are exhibited, and not restricted to the normal medication round. A specific plan for

²⁵ Van den Bemt et al, 2009

²⁶ Hughes and Goldie, 2009

²⁷ The Health Foundation, 2011

administration of the PRN medication must be recorded and information about why, when and how the medication should be administered, together with any restrictions (for example max 4 doses in 24 hours), sought from the prescriber, pharmacist or other healthcare professional and recorded on the plan which should be kept with the regular medicine administration record (MAR) chart.²⁸ PRN medication will be in its original packaging and not part of a monitored dosage system (MDS). A record of any amounts administered with dates and times should be recorded on the MAR chart and the amount left should be recorded on each new MAR chart to ensure the monitoring of stock levels and timely reordering.²⁹

4. MONITORING MEDICATION

Many medicines may be safely prescribed without careful intensive follow-up monitoring but others, where adverse unintended side effects are likely or that have a high risk of toxicity or where dosage needs to be adjusted, may necessitate regular and frequent monitoring of a resident's progress. The CHUMS³⁰ study reported that the harm score for monitoring errors was higher than for other forms of error, which reflects the importance of monitoring when it is required. The most common monitoring errors reported in the CHUMS study were for diuretics (55%) and ACE inhibitors (16%). While 37% of "preventable drug-related morbidity" is associated with a lack of monitoring of drugs³¹, with over three quarters involving ACE Inhibitors, diuretics account for 16% of medicine related hospital admissions³².

A recent study in Belgian nursing homes³³ of barriers to safe medication management found that nurses felt that barriers to safety in monitoring the side-effects of medication were stronger than barriers in the administration of the medication. Nurses rated highly, as barriers to safety in monitoring, the adverse effect of lack of information from the physician, lack of communication about side effects, lack of knowledge about both therapeutic effects and side effects, difficulty in communicating with the physician and lack of time to perform the task with care.

5. THE USE OF TECHNOLOGY AND OTHER AIDS

Monitored Dosage Systems (MDS)

Monitored Dosage Systems (MDS), in which the medications for an individual resident at a particular time are repackaged by the pharmacist, are in widespread use in care homes. The CHUMS study³⁴ found a range of views about MDS. Some pharmacists felt that MDS made it easier for care home staff to administer medication safely and systematically while others expressed more negative

²⁸ Care Quality Commission, 2008

²⁹ Gloucestershire Care Services, 2010, http://www.glospct.nhs.uk/chst/chst_medicines.html

³⁰ Alldred, Barber, Carpenter et al, 2009

³¹ Morris et al, 2004

³² Howard et al, 2007

³³ Dilles et al, 2011

³⁴ Alldred, Barber, Carpenter et al, 2009

opinions including the view that MDS were not safe as tablets could not be identified. One pharmacist noted that when a tablet was dropped the staff would not have a replacement. Another said that MDS encouraged staff not to look at the label. A follow up analysis of the CHUMS data¹⁵ was ambivalent about whether MDS administered medication was safer. Although, on the surface, error rates were better with MDS administered medication, the more problematic medications, for example liquids and inhaler administered medications, are often not part of the MDS systems so comparison was not of like with like. In addition 'as required' (PRN) medication cannot be part of the MDS system. It is still therefore unclear whether or not traditional MDS is inherently safer than originally packaged medication. There is some evidence from the CHUMS study³⁴ that single tablet MDS blister packs may be safer than MDS cassette based systems and some more recent MDS blister systems can also accommodate liquids.

Pharmacy managed barcode medication management systems

Barcode-based medication administration systems have the potential of reducing medication administration errors in care homes by confirming that the correct medication is being given to the correct resident at the right time. A UK evaluation of one such system³⁵ showed its effectiveness in avoiding a large number of care home medication administration errors which would otherwise have occurred, but did not evaluate the ease of use of the system. Hospital based bar-code systems linked to electronic medication administration records (eMAR) have been shown to completely eliminate transcription errors.³⁶

Although technology based solutions have been shown to reduce medication administration errors, they will only be embraced by care home staff if they are reliable, easy to use and do not add significantly to staff workload for a particular task. Care home staff will find workarounds for workflow blockages perceived as unnecessary, even if these are intentional safety checks introduced by the system.³⁷

Technology is only accepted when it works properly and makes a working task easier or more effective. A 2008 US study of the use of barcode medication management systems in hospitals reported that nurses were observed to 'work around' the system in a number of ways including affixing patient ID barcodes to the medication trolley, and carrying several patients' pre-scanned medications on the trolley. The need for a work-around was caused by a number of problems including unreadable barcodes, malfunctioning scanners, worn batteries, poor wireless connection, missing patient wristbands and non-bar-coded medication. Hospital nurses over-rode BCMA alerts for 4% of patients and 10% of medicines³⁸.

³⁵ Szczepura, Wild and Nelson, 2010

³⁶ Poon et al, 2010

³⁷ Vogelsmeier, Halbesleben and Scott-Cawiezell, 2008

³⁸ Koppel, Wetterneck, Telles and Karsh, 2008

6. REGULATIONS, STANDARDS, GUIDANCE AND CODES OF PRACTICE

The management and administration of medicines in care homes is currently (October 2011) covered by regulation 13 of the Health and Social Care Act 2008 (Regulated Activities) Regulations 2010^{39,40}. This states that

“The registered person must protect service users against the risks associated with the unsafe use and management of medicines, by means of the making of appropriate arrangements for the obtaining, recording, handling, using, safe keeping, dispensing, safe administration and disposal of medicines used for the purposes of the regulated activity.”

In making the arrangements above *“the registered person must have regard to any guidance issued by the Secretary of State or an appropriate expert body in relation to the safe handling and use of medicines”*

The specified outcome of the regulation is that people who use the services:

- Will have their medicines at the times they need them and in a safe way
- Wherever possible will have information about the medicine being prescribed made available to them or others acting on their behalf

This is because providers who comply with the regulations will:

- Handle medicines safely, securely and appropriately
- Ensure that medicines are prescribed and given by people safely
- Follow published guidance about how to use medicines safely.

Compliance with the regulations is monitored by the Care Quality Commission. Depending on the circumstances, the handling of controlled drugs may be further regulated by the Misuse of Drugs Act Regulations 2001.

A number of organisations including the Royal Pharmaceutical Society of Great Britain and the Nursing and Midwifery Council have produced standards and guidance for the use of medicines. Many points are directly relevant to care homes, although the terminology of patient rather than resident and the named staff involved may sometimes differ. The main points are summarised below for convenience.

The 2011 project ‘Working together to develop practical solutions: an integrated approach to medication in care homes’ has also developed a framework guide: ‘Making the best use of medicines across all care settings’ which highlights examples of good practice for managers, health staff and residents. (See section 6.4)

³⁹ Care Quality Commission, 2010a

⁴⁰ Care Quality Commission, 2010b

6.1. Royal Pharmaceutical Society of Great Britain Guidance

The Royal Pharmaceutical Society of Great Britain has published guidance, *The handling of medicines in social care*.⁴¹ The guidance outlines eight principles relating to the safe and appropriate handling of medicines which apply to every social care setting:

- a) People have freedom of choice in relation to their provider of pharmaceutical care and services, including dispensed medicines
- b) Care staff know which medicines each person has, and the care service keeps a complete account of medicines
- c) Care staff who help people with their medicines are competent
- d) Medicines are given safely and correctly, and care staff preserve the dignity and privacy of the individual when they give medicines to them
- e) Medicines are available when the individual needs them and the care provider makes sure that unwanted medicines are disposed of safely
- f) Medicines are stored safely
- g) The social care service has access to advice from a pharmacist
- h) Medicines are used to cure or prevent disease, or to relieve symptoms and not to punish or control behaviour.

'If these principles are to be achieved there needs to be robust arrangements for good practice and communication for all those involved including GPs, hospitals, and community pharmacists as well as care staff.'

The RPSGB guidelines also indicate that it is essential that care worker in residential care for older people have a written policy document that sets out:

- a) How medicines are obtained for residents
- b) Procedures to assess self-administration
- c) Obtaining residents' consent if care workers give medicines
- d) How medicines are stored, centrally and for self-administration
- e) Procedures for administration
- f) Procedures to assess competence to administer medicines safely
- g) Procedures for controlled drugs
- h) Procedures for providing medicines when residents take 'leave'

⁴¹ Royal Pharmaceutical Society of Great Britain, 2007

- i) What records are held
- j) How to deal with drug errors and incidents
- k) How to dispose of medicines
- l) Treatment of minor ailments

The guidelines point out that an alternative way to store medication is in individual locked medicine cupboards or drawers in residents' own rooms. This would be essential for self-medicating residents but can also be used in systems where care workers give medication.

6.2. Nursing and Midwifery Council Standards

The Nursing and Midwifery Council Standards for medicines management⁴², for nurses and midwives, emphasise the fact that the administration of medicines is not just a mechanistic task to be performed in strict compliance with the written prescription of a medical practitioner but one that requires thought and the exercise of professional judgement.

When administering medication registered nurses must

- be certain of the identity of the patient to whom the medicine is to be administered
- check that the patient is not allergic to the medicine before administering it
- know the therapeutic uses of the medicine to be administered, its normal dosage, side effects, precautions and contra-indications
- be aware of the patient's plan of care (care plan/pathway)
- check that the prescription or the label on medicine dispensed is clearly written and unambiguous
- check the expiry date (where it exists) of the medicine to be administered
- have considered the dosage, weight where appropriate, method of administration, route and timing
- administer or withhold in the context of the patient's condition (e.g. digoxin not usually to be given if pulse below 60) and co-existing therapies e.g. physiotherapy
- contact the prescriber or another authorised prescriber without delay where contra-indications to the prescribed medicine are discovered, where the patient develops a reaction to the medicine, or where assessment of the patient indicates that the medicine is no longer suitable

⁴² Nursing and Midwifery Council, 2008

- make a clear, accurate and immediate record of all medicine administered, intentionally withheld or refused by the patient, ensuring the signature is clear and legible; it is also the responsibility of the nurse to ensure that a record is made when delegating the task of administering medicine.

In addition:

- Where medication is not given the reason for not doing so must be recorded
- A registered nurse may administer with a single signature any Prescription Only Medicine (POM), General Sales List (GSL) or Pharmacy (P) medication

In respect of Controlled Drugs:

- These should be administered in line with relevant legislation and local standard operating procedures
- It is recommended that for the administration of Controlled Drugs a secondary signatory is required within secondary care and similar healthcare settings
- In a patient's home, where a registrant is administering a Controlled Drug that has already been prescribed and dispensed to that patient, obtaining a secondary signatory should be based on local risk assessment
- Although normally the second signatory should be another registered health care professional (for example doctor, pharmacist, dentist) or student nurse or midwife, in the interest of patient care, where this is not possible a second suitable person who has been assessed as competent may sign. It is good practice that the second signatory witnesses the whole administration process. For Guidance, go to: www.dh.gov.uk and search for Safer Management of Controlled Drugs: Guidance on Standard Operating Procedures
- In cases of direct patient administration of oral medication from stock in a substance misuse clinic, it must be a registered nurse who administers, signed by a second signatory (assessed as competent), who is then supervised by the registrant as the patient receives and consumes the medication
- A registered nurse must clearly countersign the signature of the student when supervising a student in the administration of medicines.

Self administration

The registered nurse is responsible for the initial and continued assessment of patients who are self-administering and has continuing responsibility for recognising and acting upon changes in a patient's condition with regards to safety of the patient and others.

6.3. Royal Pharmaceutical Society good practice guidance for transfer between care providers

One of the times of greatest risk of medication error for older people is at the points of transition between GP based home care, care home care and hospital care.

In July 2011, the Royal Pharmaceutical Society published *Keeping patients safe when they transfer between care providers – getting the medicines right*⁴³, a two part good practice guide for healthcare professionals, providers and commissioners. Although focussing on healthcare professionals, the principles of sound information transfer are equally applicable to care home staff.

This good practice guide outlined four core principles for healthcare professionals and three key responsibilities for organisations providing care, to minimise the chance of medication errors arising from the transfer of residents/patients between care providers.

Four core principles for health professionals

1. Health care professionals transferring a patient should ensure that all necessary information about the patient's medicines is accurately recorded and transferred with the patient, and that responsibility for ongoing prescribing is clear
2. When taking over the care of a patient, the healthcare professional responsible should check that information about the patient's medicines has been accurately received, recorded and acted upon
3. Patients (or their parents, carers or advocates) should be encouraged to be active partners in managing their medicines when they move, and know in plain terms why, when and what medicines they are taking
4. Information about patients' medicines should be communicated in a way which is timely, clear, unambiguous and legible; ideally generated and/or transferred electronically.

Three key responsibilities for organisations providing care

1. Provider organisations must ensure that they have safe systems that define roles and responsibilities within the organisation, and ensure that healthcare professionals are supported to transfer information about medicines accurately
2. Systems should focus on improving patient safety and patient outcomes. Organisations should consistently monitor and audit how effectively they transfer information about medicines
3. Good and poor practice in the transfer of medicines should be shared to improve systems and encourage a safety culture.

The Royal Pharmaceutical Society recommendations for the core contents of a record to be used when patients transfer between care providers are shown in Table 1.

⁴³ Royal Pharmaceutical Society, 2011

Table1 Royal Pharmaceutical Society recommended core contents of records for medicines when patients transfer between care providers

Patient details	Last name, first name, date of birth, NHS number, patient address
GP details	GP/Practice name
Other relevant contacts defined by the patient	For example Consultant name, Usual community pharmacist, Specialist nurse
Allergies	Allergies or adverse reactions to medicines <ul style="list-style-type: none"> • Causative medicine • Brief description of reaction • Probability of occurrence
Medications	Current medicines <ul style="list-style-type: none"> • Medicine – generic name and brand (where relevant) • Reason for medication (where known) • Form • Dose strength • Dose frequency / time • Route
Medication changes	Medication started, stopped or dosage changed, and reason for change
Medication recommendations	Allows for: <ul style="list-style-type: none"> • Suggestions about duration and/or review, ongoing monitoring requirements, advice on starting, discontinuing or changing medicines • Requirements for adherence support, for example compliance aids, prompts and packaging requirements • Additional information about specific medicines, for example brand name or special product where bioavailability of formulation issues
Information given to the patient and/or authorised representative	If additional information supplied to the patient/authorised representative on transfer. For example: <ul style="list-style-type: none"> • Patient advised to visit community pharmacist post discharge for a medicines use review (MUR) • Where capacity, sensory or language barriers, how all necessary support information has been given to authorised representative/carer
Person completing record	Name, time, date, job title Contact telephone number for queries Signature (if paper based)

6.4. Other guidance

Following the Chums Report, in January 2010, the Director General, Social Care, Local Government and Care Partnerships, David Behan and the Chief Pharmaceutical Officer, Keith Ridge sent a letter to all Directors of Adults Social Services, Strategic Health Authorities and Primary Care Trusts informing them of the concerns. As a result, many PCTs developed teams to support care homes.

A 2004 report by the Chief Pharmaceutical Officer at the Department of Health, *Building a safer NHS for patients - improving medication safety*⁴⁴, while focusing mainly on medical establishments provides useful guidance for care homes on the safer administration of medicines and the causes of medication administration error (Section 3.3) as well as organisational and environmental strategies to reduce the risk (Section 6). The report's recommendations include the use of technology, improved labelling and packaging, a focus on problems that arise when individuals transfer between care providers and improved education and training for medication safety.

A number of NHS Primary Care Trusts have produced guides for care homes and others on the handling of medication. In particular Gloucestershire Care Services' Medicines management for care

⁴⁴ Smith, J – Chief Pharmaceutical Officer - Department of Health, 2004

homes provides useful template policies for care homes on the ordering, control and storage of medication and homely remedies as well as how to deal with refused or dropped medication. (http://www.glospct.nhs.uk/chst/chst_medicines.html) Other examples are shown in table 2 but there will be many more. All can be downloaded from the internet after searching by title.

Table 2		
NHS Buckinghamshire and Oxfordshire Cluster	2011	Good practice guidance for care home staff on medicines management processes within care homes
NHS Calderdale	2010	Medicines governance service to care homes (Care Homes Service)
NHS Doncaster	2008?	The management of controlled drugs in care homes
NHS Gloucestershire Care Services	2010	Medicines management for care homes
NHS Lambeth	2008	Self administration of medicines
NHS Peterborough Community Services	2011	The management of medicines in residential care homes policy and procedure
NHS Sheffield	2011	Community pharmacy service specification to support care homes in medicines management
NHS Shropshire County	2009	Medication to be administered on a PRN (when required) basis by a care worker in a care home environment
NHS Shropshire County	2010	Medicines management in care homes self assessment pack
NHS Shropshire County	2011	Policy & procedures for the handling of medication (Care home - template medication policy)
NHS Suffolk	2009	The regulation of medication administered by carers
NHS Swindon	2009	Medicines management guidance for independent contractors

*Medicines management for residential and nursing homes: A toolkit for best practice and accredited learning*⁴⁵ is a book which provides a deliberately easy to read, simple, practice guide and training tool for care home staff.

The Social Care Association, 2008 summary guide *Medication administration in social care* outlines the key issues associated with ordering, storage, administration, self-administration, recording and record keeping, homely remedies, controlled drugs, side effects, errors and the disposal of medicines. As well as looking at legal and ethical issues the guide outlines twelve principles of good practice that are equally applicable to care homes. [Table 3]

⁴⁵ Lilley, Lambden and Gillies, 2007

Table 3

1	People have freedom of choice in relation to their medicines	7	The dignity and privacy of the individual is preserved when medicines are given
2	Care staff know what medicines each individual is taking	8	Medicines for individuals are available when needed
3	Medicines are given safely and correctly	9	The social care service has access to advice from a pharmacist
4	Medicines are stored safely	10	Medicines are only used to cure or prevent disease or to relieve symptoms and not to punish or control behaviour
5	Staff who help people with their medicines are competent to do so	11	Unwanted medicines are disposed of safely
6	A complete account of medicines is kept	12	Prescribed medicines are the property of the person to whom they have been prescribed or dispensed

The 2011 project ‘Working together to develop practical solutions: an integrated approach to medication in care homes’ has developed a good practice framework ‘Making the best use of medicines across all care settings’ and a Resident’s Charter ‘My Medicines My Choices’.

The framework includes guidance on what good practice looks like, with over 50 principles of good practice for care home managers, health staff and residents in the dispensing, supply, administering, monitoring and review of medication across all care settings. The framework also includes case studies and examples of innovation in practice.

The Resident’s Charter is aimed at care home residents to help them understand how they can and should be involved in the administration of their own medication.

Resident’s Charter ‘My Medicines My Choices’: This is a charter that helps you understand your rights about the medicines you take and says what help you should get from your doctor, pharmacist and care staff.

- I am informed about all my medicines and fully involved in decisions concerning them and how I take them.
- My family or representative is, with my permission, also informed of decisions involving my medicines.
- My doctor, pharmacist and care home staff work together to make sure I receive my medicines safely. These people will always act in my best interests.
- It is assumed that I can look after and take my own medicines and I can ask for help from the care staff.
- I can agree that the home can manage my medicines.
- My medicines are kept in my room or where I want to keep them.
- My care home keeps records of my medicines and makes sure that the staff caring for me are aware of any changes.
- All staff helping me with my medicines are trained and competent. If my health changes my medicines will be reviewed.
- My doctor will check I am on the right medicines at least twice a year. They will also be checked when I am admitted to my care home or on my return following a stay in hospital.
- I know that I can ask my doctor to review my medicines at any time

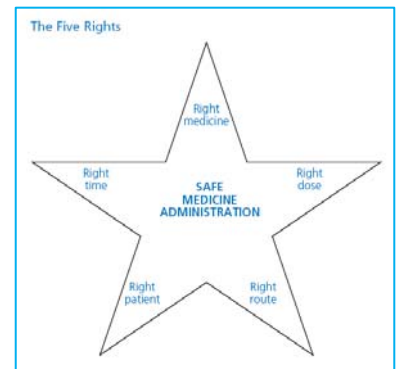
7. MAKING A DIFFERENCE

7.1. Getting it right - the 5 Rs or 5 Cs

When administering medication in care homes it is often said that there are five things that need to be right (5 Rs) or correct (5 Cs). These are right or correct resident, right medication, right dose, right route, and right time.⁴⁴

Right route refers to the way in which the medication enters the body, for example by mouth.

Some improvements in the administering of medication in care homes are very easy to achieve, other require a little more effort and some require evaluation and change of the systems employed in the care home.



7.2. Easy to achieve improvements

Make sure all residents have water

Residents usually need water to take their medication and transporting water on a medication trolley is messy, inconvenient and can result in spillage.⁴⁶ It is good practice to ensure that residents are regularly supplied with fresh water so a simple, no cost improvement would be to ensure that a 'fresh water round' immediately precedes each medication round.

Avoid interruptions – Do not disturb.

One of the causes of medication administration errors most commonly raised by staff and identified in a number of research reports^{46,47,48,49} is interruption of staff while they are preparing and administering medication. Measures to avoid interruptions are easy to achieve at little cost.

It is, however, important to maintain the atmosphere of approachability of care home staff and a simple 'Do Not Disturb' message might give the wrong impression to residents and relatives. A brightly coloured tabard with something like 'Please do not disturb while administering medication' might provide a word of explanation for relatives and residents while warning other staff who provide the vast majority of interruptions.

Identification of residents

Care home staff usually know their residents very well but new and agency staff may be unfamiliar with residents. Even regular staff may mis-identify residents from time to time, particularly ones with similar names. Many medication administration record (MAR) charts allow the possibility of attaching a photograph of the resident to the chart to aid identification and this procedure should be adopted whenever possible.

⁴⁶ Alldred, Barber, Carpenter et al, 2009

⁴⁷ Dilles et al, 2011

⁴⁸ Thomson et al, 2009

⁴⁹ Kreckler et al, 2008

Maintain stock levels of 'as required' medicines

PRN (as required) medication does not form part of the regular order–administer–re-order cycle and cannot be part of a monitored dosage system. That means that stock levels of PRN medication have to be watched particularly carefully. PRN usage and the amount remaining should be recorded on the resident's MAR chart and care taken that all relevant information is transferred to the next MAR chart so that the amount left, recent dosage and any restrictions on use (eg maximum dose in a given time period) are known. An adequate amount of PRN medication should be reordered in good time.

Correct timing of medication

As required medication should be administered 'as required', which may not be at the time of the regular medication round. Timing of certain regular medications is also important, for example in the treatment of Parkinson's disease. Staff should be made aware of the importance of giving medicines at the correct time, even when this does not match the time of the regular medication round.

Printed MAR charts

Royal Pharmaceutical Society guidelines⁵⁰ indicate that medicine administration charts (MAR charts) should be clear, indelible and permanent. As an aid to legibility, care home should now expect printed MAR charts from their community pharmacist. Printed MAR charts avoid administration errors due to clerical error - incorrectly transcribing the details from another document and handwriting that is difficult to read and can be misunderstood. Printed MAR charts should be reissued if there is a significant change, for example a new prescription for an acute medication during the monthly cycle.

The morning medication round

Morning is the busiest part of the care home day and medication administration errors are more prevalent in the morning. It therefore makes sense that, with the agreement of the prescriber, medications that do not need to be administered in the morning are administered later in the day.

Improving awareness

Training sessions to improve staff awareness of how to properly handle and administer medication are often offered to care homes by community pharmacists. Training sessions can help counteract some very basic errors that have been observed⁵¹ such as:

- a. Dispersible medications must be administered in water, not whole
- b. Controlled release medication should be administered whole and not split or crushed
- c. Incorrect use of inhalers
- d. The importance of strict observance of timing for certain medications

⁵⁰ Royal Pharmaceutical Society of Great Britain, 2009

⁵¹ Alldred, Barber, Carpenter et al, 2009

7.3. Further improvements

Storing medication securely in the resident's own room

One of the medication administration issues highlighted by the CHUMS⁵² study was problems associated with the medication trolley and the medication round. Medication trolleys may be difficult to manoeuvre and if they cannot be brought into close proximity to the resident have to be made secure while the medication is administered. It is argued that a medication trolley is more appropriate to a hospital than a care home environment. The advantages of storing medication in a small lockable cabinet in the resident's own room are that all the resident's medications, including PRN (as required) medication, are kept together and do not have to be transported around the care home. Medication can be taken in privacy, the medication round may take less time and there is evidence that medication administration errors are reduced⁵³. Issues to be addressed are that residents have to be in their own rooms at the time of medication or the medication brought to them, arrangements still have to be made for refrigerated medication and there has to be an investment in time carefully distributing medication at the time it arrives from the pharmacist.

Monitored Dosage Systems

Monitored Dosage Systems (MDS) have the advantage of simplifying the medication administration process but the disadvantage of separating medication from its original packaging. Although notes about the use of individual medications should appear on the MAR chart, and the medication should be fully identified on the MDS packs, it might be beneficial to residents and care home staff, in the case of MDS medication, to request from the pharmacist a copy of the original medication information leaflet (indications, contra-indications and method of administration) when a medication is first supplied for an individual resident.

Communication with the GP practice

Care home residents are commonly unable to visit their GP and require the GP to visit the care home. GPs, on the other hand, make very few home visits and are geared up to receive patients at the surgery, consulting patient notes on the surgery IT system. Where a care home has a small number of 'preferred' GPs it would be possible to establish a secure IT link from the care home to the surgery IT system so that the GP can consult patient notes and update them when visiting the care home. The IT link also means that computer based prescriptions may be generated in the home and signed by the GP during a visit. Such a link is likely to bring about a reduction in GP prescribing and monitoring errors rather than care home medication administration errors.

⁵² Alldred, Barber, Carpenter et al, 2009

⁵³ Pharmaceutical Journal, 2002

7.4. Improving the system

Leader with key responsibility

There should be an appointed person within the care home who has overall responsibility for medication administration processes and who can provide leadership and guidance to other care home staff. In a small care home this may be the registered manager or an assistant but in a larger home, while the registered manager retains overall responsibility, this role may be delegated to a suitably qualified, responsible person.

Review by a pharmacist

The CHUMS study⁵⁴ recommended that care homes should commission an independent review of their medication processes by an outside person, possibly a pharmacist, who could provide an overview of the effective running of the whole medicines system in the home, and of links with the associated GPs, supplying pharmacists and the PCT.

Training of care home staff

Improvements in medication administration safety that follow from appropriate staff training are common sense and well proven.^{55,56} A policy on medication training for new staff and refresher sessions for existing staff needs to be established in the care home. Community pharmacists will often provide training sessions and certified medication training may be available through the local authority or PCT.

Table 4

- Relevant evidence-based guidance and alerts about medicines management and good practice published by appropriate expert and professional bodies, including:
 - National Patient Safety Agency
 - National Institute for Health and Clinical Excellence
 - Medicines and Healthcare products Regulatory Agency
 - Department of Health
 - Royal Pharmaceutical Society of Great Britain (RPSGB)
 - Social Care Institute for Excellence
 - Medical and other clinical royal colleges, faculties and professional associations
- The safe and secure handling of medicines: a team approach (RPSGB, 2005)
- Safer management of controlled drugs: Guidance on strengthened governance arrangements (DH, 2007)
- Safer management of controlled drugs: Guidance on standard operating procedures for controlled drugs (DH, 2007)
- The handling of medicines in social care (RPSGB, 2007)
- Research governance framework for health and social care: Second edition (DH, 2005)

⁵⁴ Alldred, Barber, Carpenter et al, 2009

⁵⁵ Zimmerman et al, 2011

⁵⁶ Van den Bemt et al, 2009

7.5. Information sources for care home managers

As well as the regulations, guides, standards and codes of practice on medication administration in care homes referenced in this document, the Care Quality Commission⁵⁷ in their 2010 guidance recommend the sources shown in Table 4 to help achieve compliance with Outcome 9 – *Management of medicines*.

8. CONCLUDING COMMENTS

The CHUMS study and many other research projects have highlighted the continuing problem of the high level of medication errors in care homes. Not all errors are in the hands of care home staff. There may be prescribing errors at the GP surgery or hospital and dispensing errors at the pharmacy. Care home managers and staff can however do something to improve the administration and monitoring of medication in care homes as well as maintaining vigilance for suspected prescribing or dispensing errors that can be queried with the surgery or pharmacy, particularly when residents first arrive at the care home or return from hospital.

The care home resident should be seen as at the heart of the medication administration process, perhaps as a customer for whom a service is being provided but certainly as a human being whose dignity, rights and preferences are of paramount importance. As with many other aspects of care home care, the administering of medication should adopt a resident-centred approach.

It is the responsibility of the care home to ensure that adequate systems for managing, administering and monitoring medication are in place and a review of medication systems by an outside professional, for example a pharmacist, may help to identify any deficiencies.

Medication administration errors are not intentional and arise either from a systems failure or from a lack of awareness or stress and tiredness on the part of staff. Awareness can be improved by appropriate training, and stress and tiredness can be reduced by appropriate levels of staffing and organisation in the care home. However even well trained, well rested, staff will occasionally make mistakes, and mistakes with medication, especially with frail older people, can be particularly dangerous.

The issues raised in this report help to highlight ways in which systems can be strengthened to help staff avoid medication administration errors. Some ideas such as making sure all residents have water before the medication round, avoiding interruptions and asking for copies of original medication information leaflets are relatively easy to achieve. Others, such as ensuring MAR charts are printed and have photographs of the resident, or asking that medication which does not have to be taken in the morning be prescribed for later in the day, may take a little more effort to set up.

Training to improve staff awareness is a key factor to improve medication safety and storing medication securely in the resident's own room recognises that the medication is the property of the resident while at the same time reducing the risk of error.

⁵⁷ Care Quality Commission, 2010a

Providing a secure communication link from the care home to the practice based computer system of visiting GPs has clear benefits for the resident, GP and care home and may not be particularly difficult to achieve.

In the future technology may lend a hand, with barcode based scanning systems already in use in some care homes to correctly identify the resident, medication, dose and time. Early adopters of the technology will iron out any initial problems and ease of use and cost will be the determining factors for uptake.

The principle of the 5 Rs, right resident, right medication, right dose, right route and right time has been around for some time and is sometimes supplemented by a 6th R, the resident's right to refuse medication when they have mental capacity. This last R is a recognition that the resident is at the heart of the medication process and that medication administration is *on behalf of* the resident.

What is striking is that there has been an awareness of medication administration problems in care homes for some time and many of the solutions suggested have not changed. In 2004 the National Care Standards commission identified excellent training on medication and the use of photographs to correctly identify residents as characteristics of good performance in care homes.⁵⁸

Good monitoring and communication between everyone involved in getting the correct prescribed drugs to the care home resident is essential. Technology based solutions have been shown to reduce medication administration errors, but they will only be embraced by care home staff if they are reliable, easy to use and do not add significantly to staff workload for a particular task.

Whatever solutions are adopted to reduce medication administration errors in care homes, the resident and their dignity, rights and needs should remain paramount with medication administration being *on behalf of* the resident rather than *to* the resident.

⁵⁸ Davies et al 2004

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