



Medicines administration for residents with dysphagia in care homes: A small scale observational study to improve practice



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ABSTRACT

Background: In the UK, 69.5% of residents in care homes are exposed to one or more medication errors and 50% have some form of dysphagia. Hospital research identified that nurses frequently crush tablets to facilitate swallowing but this has not been explored in care homes. This project aimed to observe the administration of medicines to patients with dysphagia (PWD) and without in care homes.

Method: A convenient sample of general practitioners in North Yorkshire invited care homes with nursing, to participate in the study. A pharmacist specialised in dysphagia observed nurses during drug rounds and compared these practices with national guidelines. Deviations were classified as types of medication administration errors (MAEs).

Results: Overall, 738 administrations were observed from 166 patients of which 38 patients (22.9%) had dysphagia. MAE rates were 57.3% and 30.8% for PWD and those without respectively ($p < 0.001$). PWD were more likely to experience inappropriate prescribing (IP). Signs of aspiration were more frequently observed in PWD when IP occurred ($p < 0.001$).

Conclusion: Observation of medication administration practices by independent pharmacists may enable the identification of potentially dangerous practices and be used as a method of staff support. Unidentified signs of aspiration suggest that nurses require training in dysphagia and need to communicate its presence to the resident's GP. Further research should explore the design of an effective training for nurses.

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1. Introduction

Dysphagia is a condition that involves difficulty or discomfort in swallowing a wet or dry bolus during the progression from the mouth to the stomach (Stoschus and Allescher, 1993). In older people, central nervous system diseases such as stroke, parkinsonism, and dementia, as well as other factors, including prescribed medication, local oral and oesophageal physiopathology are common causes of swallowing dysfunction (Paterson, 1996; Hurwitz et al., 1975). Dysphagia can cause deterioration in the quality of life (QOL), dehydration, under nutrition, asphyxia, congestion, recurrent respiratory tract infections due to aspiration (entry of secretions of swallowed material into the larynx, the

trachea and lungs) and death (Kalia, 2003; Sokoloff and Pavlakovic, 1997).

Up to 50% of residents in care homes are believed to have some form of dysphagia (Rofes et al., 2011) with anything between 15 and 30% of all residents reported to find it difficult to swallow tablets or capsules (Wright, 2002a). With residents prescribed eight medicines on average (Barber et al., 2009), it can be seen there is potential for significant difficulties for nurses in care homes when administering medicines to residents who experience problems with swallowing. Whilst recent research has shown that more than two thirds (69.5%) of the residents in care homes suffer from one or more medication errors (Barber et al., 2009), it did not specifically consider the problems associated with dysphagia.

To facilitate the swallowing of medicines nurses frequently resort to crushing or dispersing tablets (Wright, 2002b) which has its own associated risks and consequently, guidelines suggest that advice should always be sought and authorisation obtained from an independent prescriber (Smyth, 2010; Wright, 2011). Modified

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release and enteric coated tablets should never be crushed, nor should products which may affect the administrator (White and Bradnam, 2007). The effect of mixing with foodstuffs to provide the appropriate final texture is also usually unknown and therefore it is better to receive the medicine in a formulation which does not require modification prior to administration e.g. patches, buccal or liquid medicines.

Whilst an extensive observational study identified that administration of medicines to patients with dysphagia (PWD) has shown to create difficulties for nurses on hospital wards (Kelly and Wright, 2010) similar research has not been undertaken in care homes in the UK.

Identification of the types of difficulties experienced by nurses in care homes when administering medicines to PWD should enable the development of appropriate interventions and support packages. Numerous programs have been designed for the assessment and management of dysphagia for registered nurses. (O'Loughlin and Shanley (1998) described some of these programs and combined them into a novel training program (SOAP). However, medicines administration has not been fully explored as part of these programs despite current evidence highlighting the need for them.

The aim of this project was to observe the administration of medicines to patients with swallowing difficulties, discuss administration choices with nurses during the process and identify how they could be better supported in this role.

2. Method

2.1. Design

This was an observation study based in care homes in North Yorkshire.

2.2. Setting

Care homes with patients requiring nursing needs.

2.3. Recruitment

Medical practices within North Yorkshire primary care research network were approached to take part. Those who expressed interest approached their care homes on behalf of the researchers. Care homes were eligible for inclusion if they were private and provided nursing care and administered medication to residents with dysphagia or via enteral feed tubes.

Registered care home managers were sent an explanatory letter from the medical practice and an acceptance letter allowing them

to be contacted by the researcher. One follow up reminder letter was sent if no reply had been received within two weeks. Following receipt of a letter of acceptance for contact a time was agreed with the registered manager to visit the home. Nurses who could potentially be observed were then recruited via invitation letter, information sheet and consent form.

It was planned to undertake two observational drug rounds within each care home on different days and where possible, with different members of staff. The final schedule of the observations was subject to the care homes availability and willingness to participate.

A week previous to the day of the observational drug round, the main researcher in liaison with the nurses handed out a letter of information to the patients observed (or to their relatives when the patient did not have capacity to respond) explaining them the nature of the study and giving them the opportunity to choose not to be observed.

2.4. Observation of practice

Before the drug round, the nurse requested verbal consent from the resident on behalf of the researcher on the day of the observation and before the researcher joined the nurse and the resident to observe the administration. During each drug round, the researcher observed the nurse participants administering medication to all residents with notes taken using a standardised data collection form. The time of the administration, medication administered, medication preparation, texture, missed dose and relevant observations regarding the swallow itself were recorded.

Observation was undertaken by a pharmacist with extensive background in applying national guidelines in administration of medication to PWD. Practice was compared with national guidelines (White and Bradnam, 2007) and incidences of deviation were recorded e.g. medicines mixed inappropriately, crushing tablets or opening capsules when authorisation would be appropriate, use of unlicensed medication when licensed formulations are available, etc. Where practice was found to be not following national guidance, alternative options to support improvement in practice were identified (e.g. training for Healthcare Professionals (HCPs)).

For the purpose of this study, these deviations were classified as medication administration errors (MAEs). The classification system is based on those presented by (McBride-Henry and Foureur (2006), (Dean, 1999), (American Society of Health-System Pharmacists, 1993) and (Wolf, 1989) and modified for use in this population (Table 1) (Kelly et al., 2011a).

No information regarding the resident was recorded except the number and type of medicines administered and whether a diagnosis of dysphagia by a HCP was recorded in their care plan or

Table 1
Classification of medication administration errors.

Error type	Definition
Omission	Patient fails to receive medication by the time of the next scheduled dose
Unordered drug	Administration of a dose that was not prescribed for the patient concerned
Wrong drug	Administration of a dose that was not one of the medicines prescribed
Extra dose	Administration of an unprescribed additional dose of a prescribed medicine
Wrong dose	Incorrect quantity supplied
Wrong formulation	Administration of the correct dose in a formulation different to that which is prescribed
Wrong dose preparation and administration	Errors in preparation of a medicine prior to its administration
Wrong route	The administration of the correct drug by a route or site that was not prescribed
Wrong time	The Administration a medication ± 60 min from its scheduled Administration time
Deteriorated medicine	The physical or chemical integrity of the medicine has been compromised
Drug compatibility	Administration of two drugs that should not be administer in conjunction with each other
Allergy related error	Administration of a drug that triggered an expected allergic reaction
Inappropriate prescribing	Administration of a drug as a result of an inappropriate drug or formulation prescribed
Others	Any medication errors that does not fall into any of the above

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