

# Clinical Audit Report

An audit to Assess the Efficacy of a Dementia Mealtime Assessment Tool (DMAT) in identifying behavioural barriers to nutritional intake in a sample of nutritionally at risk patients at Acorn Lodge Care Home

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Auditor(s): Lee Martin  
RD & Cara Lewis  
(Dietetic Student)

Supervisor: Lee Martin

Directorate: Community  
Health Services

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# **An audit to Assess the Efficacy of a Dementia Mealtime Assessment Tool (DMAT) in identifying behavioural barriers to nutritional intake. in a sample of nutritionally at risk patients at Acorn Lodge Care Home**

## **1.0 Abstract/Summary**

Malnutrition is commonly reported in nursing home residents, having adverse effects on clinical outcomes as well as the quality of life of residents. This audit aimed to assess the efficacy of a dementia mealtime assessment tool (“DMAT”) to identify behavioural barriers to nutritional intake. The tool also suggested interventions to overcome the barriers identified. In a small sample (n=6) there was evidence that the DMAT had good usability and relevance. The study was of small size and over a short timescale, therefore it would now be useful to assess the effects of overcoming these barriers on nutritional outcomes. If benefits are seen, appropriate interventions could become part of patients’ nutritional care plans in future.

## **2.0 Introduction**

### **Malnutrition**

Malnutrition amongst the older population is a particular health concern, particularly amongst those in residential care and those with long term health conditions, such as dementia. The most recent NDNS survey reported that 1 in 6 institutionalised older people had a BMI below 20 (1), and more recently 37% of residents admitted to care homes were found to be at risk of malnutrition (2).

Malnutrition is costly in terms of health, patient quality of life and health service facilities (3). Its burden is set to increase further as:

- The UK’s ageing population increases: the number of people over 85 years is projected to double within the next 20 years. (4)
- The number of elderly people in care increases: in 2010, there were estimated to be 397,000 older people in residential care (5)
- The occurrence of diseases affecting nutritional status, including dementia, increases: the number of people with late onset dementia is set to increase by 22% over the next 14 years to 1million in 2025 (6,7)

### **Dementia**

Dementia describes a group of symptoms leading to the progressive decline of cognitive functions such as memory, orientation, understanding, judgment, calculation, learning, language and thinking (ICD 10 classification). Its effects on eating are wide ranging, affecting practical, physiological, emotional and depression related aspects of food and drink intake. Any nutritional interventions therefore need to take into account the particular cognitive abilities of individuals.

### **Nutritional Interventions for malnutrition in residential care**

Guidelines on oral nutritional support (ONS) suggest ONS should be considered in patients identified as malnourished (D(GPP)(3). However, although there is evidence of benefits of ONS, it is not the only intervention available to dietitians to increase nutritional intake.

Studies have looked at the effects of improving nutritional care against a variety of outcomes. A review of current evidence(8) highlighted a need for further robust, randomized controlled trials in this area. However, one relevant study observed elderly nursing home residents showed evidence that providing family style meals e.g. table dressing, providing menu choice, lead to a significant increase in energy intake and improvement in nutritional assessment score(9). There remains however a need for further trials to provide evidence of benefit of ONS and change in nutritional care in the community setting.

In light of NHS wide interventions to increase nutritional care and decrease the risk of malnutrition, namely CQC’s outcome 5: meeting nutritional needs, and the use of the 2010 Essence of Care

benchmarks relating to food and drink, there is a need to increase the range of evidence based interventions that dietitians and health professionals can implement. Improving nutritional care is one such intervention that could be trialed.

### **Acorn Lodge – nutritional interventions**

Meal time observations at Acorn lodge have included residents with or without a diagnosis of dementia. These have noted that:

- residents can refuse meals
- residents may require assistance with full feeding needs
- staff show a lack of ability to identify resident's need for assistance

The observations also identified particular behavioural traits that were affecting food intake. However, it is hypothesized that behavioural change tools can be used to identify and overcome behavioural barriers to adequate nutritional intake. It is suggested that these interventions could yield benefits at individual and institutional levels.

#### **3.0 Aim**

- To assess the efficacy of DMAT to identify behavioural barriers to nutritional intake in care home residents at nutritional risk
- To suggest behavioural change interventions which can overcome behavioural barriers giving measurable improvements in outcomes relating to patient health, meal time experience, nursing time and service delivery including patient experience and food wastage.

#### **4.0 Method**

The DMAT was developed by Lee Martin in the department to identify behaviours limiting food intake. It also provided suggestions to overcome each of these. This was based on evidence from Caroline Walker Trust guidelines and professional experience.

The tool was used to assess a sample of residents (n= 6), 50% with a diagnosis of dementia, at Acorn Lodge nursing home. These patients were identified as at nutritional risk by a registered dietitian. The residents were observed eating their lunch time main meal over 1 or 2 occasions. They either ate their meal in the dining room or in their room with assistance.

The DMAT template was completed as the meal time was observed (see example in appendix 1).

Medical and nursing notes were reviewed before the meal and the nurses on duty was consulted to discuss any short term circumstances that may be affecting nutritional intake e.g. if a patient was feeling unwell, had eaten an atypically large/small breakfast.

## 5.0 Results

### Observed behaviour: style of eating & pattern of Intake

	No. of people	Suggestions for dealing with the behaviour:
Incorrectly uses spoon, fork or knife	3	Use custom utensils e.g. spoon head and fork head on same utensil, large handled utensil
Unable to cut meat	3	Provide cut meats
Difficulty getting food onto utensils	2	Plate guard or lipped plate may help
Eats only certain foods	1	Serve one item at a time, high calorie, high protein foods first
Plate wanders on table	1	Use non-slip placemat or suction plate
Slow eating, prolonged mealtimes	3	Serve food on warmed plates. Give small portions & offer second helpings. Allow 1 hour to eat

### Resistive or disruptive behaviour

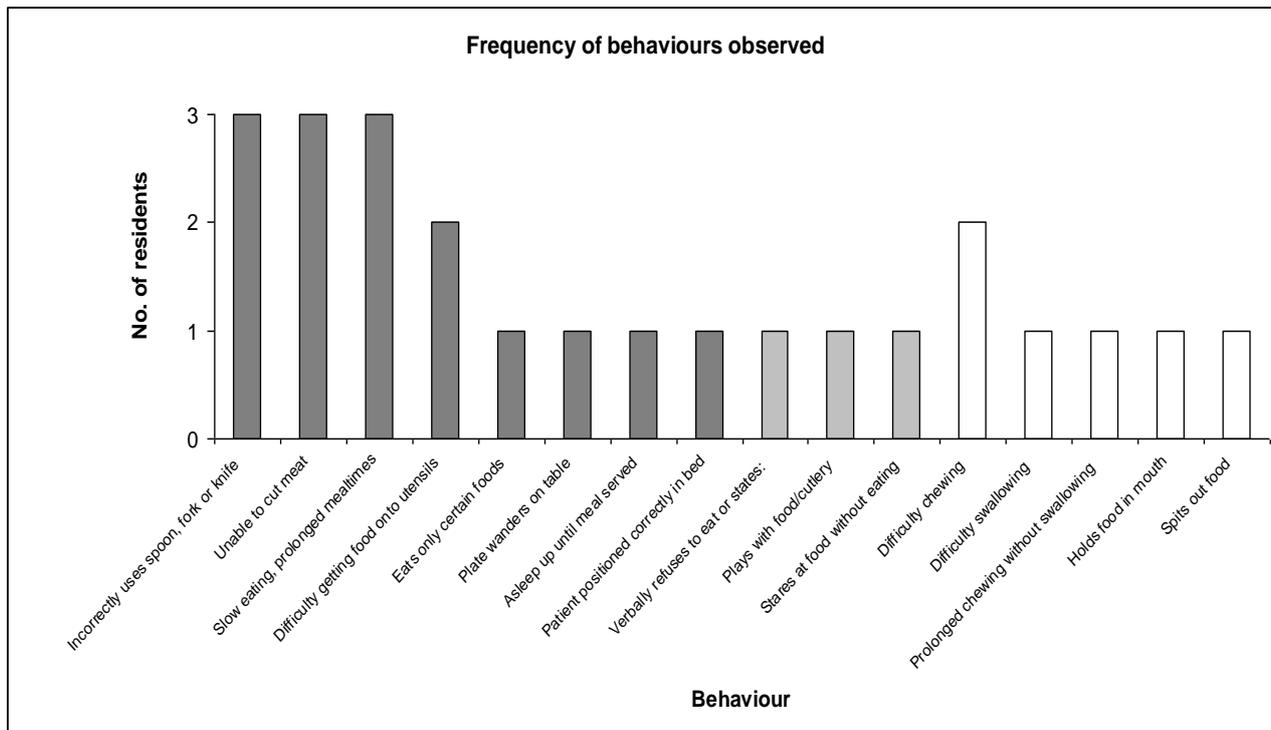
Verbally refuses to eat or states:	1	Remove meal for 5-10 minutes & then serve again. Investigate cause e.g. food preferences
Plays with food/cutlery	1	
Stares at food without eating	1	Verbal or manual cue, e.g. placing food or utensils into the persons hand

### Oral behaviour

Difficulty chewing	2	Provide softer, easier to chew foods* See soft food sheet
Difficulty swallowing	1	Liaise with speech & language therapist.
Prolonged chewing without swallowing	1	Verbal cue to swallow. Provide soft, easy to swallow foods
Holds food in mouth	1	Verbal cue to chew. Massage cheek. Experiment with different tastes & textures
Spits out food	1	Check for bites too big. Provide textured soft food

### Any other behaviour

Asleep up until meal served	1	Wake patient 15mins before a meal and provide meal time cues both verbal and non verbal
Patient positioned correctly in bed	1	Position patient appropriately 15mins before meal is served
Uninterested in consuming food/drink	+++	Provide patient non verbal and verbal encouragement throughout the meal



**Key**

- Darkest bars: Behaviour affecting style of eating and pattern of intake
- Middle coloured bars: Resistive or disruptive behaviour
- Lightest coloured bars: Oral behaviour

**The DMAT**

The tool was straightforward to use and quick and easy to use in the field. Professionals could be trained to use the tool relatively easily. The most relevant behaviours related to eating style/pattern. The other categories were less applicable to this group of patients.

No types of behaviour were observed that were missing from the template. Therefore it is suggested that the tool is fit for purpose in early stage dementia or those with no formal diagnosis.

**Usefulness of DMAT at identifying behavioural eating problems**

In the patients observed, the most common noted behavioural problems related to style of eating and pattern of intake. There was less evidence of behavioural disturbance relating to disruptive behaviours and oral behaviours.

Patients showed behaviours from more than one of the three groups of behaviours and often showed multiple behavioural problems within a group. Those that displayed behavioural problems of one subtype within a group displayed different primary medical complaints. These clinical differences were not accounted for in this qualitative study.

**6.0 Discussion**  
**Assessment of application of DMAT**

The tool was trialed in a small group of patients with a diagnosis of dementia, early stage, or without a formal diagnosis of dementia. In this group, the tool was simple and easy to use. It was relevant, with behaviours relating to eating style the most relevant. The DMAT gives a quick way

of identifying behaviours that hinder food and drink intake and suggests specific, corresponding interventions to help improve the behaviours noted. However, this was a small sample size and hence the results should be extrapolated with caution to a wider patient group.

The tool's relevance in more severe stages of dementia remains to be proven and it would be useful to validate it for these patients.

The tool assesses and helps professionals address behavioural barriers to nutritional care, however it does not assess all aspects of nutritional care. For example the impact of organisational factors such as appropriateness of dining partners, meal time distractions and the eating environment. Studies in nursing homes have identified such factors as affecting nutritional intake (10). Therefore adapting the tool to exploring these other elements of nutritional care could find factors that affect nutritional intake over and above the factors described in the tool.

### **Assessment of usefulness of tool at identifying behavioural eating problems**

The tool identified behavioural barriers to nutritional intake. However, to assess the usefulness of the tool at identifying relevant barriers and tailored interventions, an assessment of outcomes needs to be made. For example, weight gain or change in MUST/other malnutrition score, change in plate waste, meal time length, staff time to help with eating, cost of new cutlery/equipment, ultimately a reduction in the use of nutritional supplements. Comparing outcomes before and after interventions suggested by the tool will be needed over appropriate time scales e.g. 1 week in the short term and 3/6 months in the longer term.

The tool however ensures that patients receive appropriate levels of support and assistance with eating and drinking, which is required by the CQC's outcome 5. Therefore, the tool helps care providers meet the standards of nutritional care required by regulations.

### **Limitations of the audit**

The audit was of a small sample size which limits the reliability of the results, as well as the wider application to heterogeneous care home residents. It was also used in patients with differing physical characteristics e.g. age, use of limbs as well as medical histories and conditions. Therefore the results may have been affected by confounding factors. It was also a qualitative study with no quantitative analysis to give an indication of the level of value of the tool. However, the study design was such that limitations were minimised. For example the patient's were not told of the audit to avoid them changing their behaviour, patients of similar mental status were assessed.

The results of the audit also need to be interpreted in a patient specific context. For example, patients will have a number of health concerns. Providing a patient with limited dexterity with adapted cutlery may help. However, the benefit will be limited if the patient also requires a denture/SALT review. Therefore a "reality check" of the tool's results will be needed. The purpose of the meal time may affect the interventions. For example, for some patients meal times may provide an opportunity for social interaction and nutritional intake may not be the prime concern. For these patients, addressing behaviours seen may not improve nutritional care outcomes.

In order to be included in future care, the tool would need to be the responsibility of a certain group of staff who are trained in its use and have ownership over its implementation. Any interventions should be documented in the patient's care plan to ensure the problematic behaviours are consistently addressed and monitored. The range of behaviours looked for may need to be expanded if the tools is used in more diverse patient groups with differing mental health needs.

In subsequent work, the tool could assess elements of the meal time environment which could be changed to improve behaviour e.g. playing appropriate music, laying the table before residents enter the dining room and providing other meal time cues.

## **7.0 Conclusions**

In conclusion, this tool has been validated in a small sample group. It has been shown to provide a straightforward, useable resource to assess barriers to nutritional intake in nursing home residents with cognitive impairments typical of early stage dementia. The interventions it suggests now need to be assessed against nutritional outcomes to quantify the benefits of the tool and the changes its use would make to individuals' nutritional care plans.

## **8.0 References**

### References

- 1 NDNS (1998) National diet and nutrition survey people aged 65 years and over
- 2 BAPEN (2011) Nutrition Screening Survey in the UK in Winter 2010,
- 3 NICE (2006) Nutrition support in adults: Oral nutrition support, enteral tube feeding and parenteral nutrition. National Collaborating Centre for Acute Care, London England
- 4 Office for National Statistics (2009) National population projections, 2008-based,
- 5 Estimate based on Laing and Buisson Care of Elderly People UK Market Survey 2010 The report gives a total for residents and an age profile, indicating that about 95% of residents are aged 65+ in the UK
- 6 The economic burden of dementia and associated research funding in the United Kingdom. Alzheimer's Research Trust, 2010
- 7 Dementia UK, The Alzheimer's Society (2007) Late onset dementia is dementia first diagnosed at or after the age of 65
- 8 Weekes CE, Spiro A, Baldwin C, Whelan K, Thomas JE, Parkin D, Emery PW (2009) review of the evidence for the impact of improving nutritional care on nutritional and clinical outcomes and cost. J Hum Nutr Diet; 22(4), 324-35
- 9 Nijs, K.A.N.D., De Graf, C., Siebelink, E., Blauw, Y.H., Vanneste, V., Kok, F.J. & Van Staveren, W.A. (2006) Effect of family-style meals on energy intake and risk of malnutrition in Dutch nursing home residents: a randomised controlled trial. J. Gerontol. A Biol. Sci. Med. Sci. 61A, 935–942.
- 10 Copeman J (2000) Promoting nutrition in older people in nursing and residential homes, British Journal of Community Nursing, (6): 227 – 284

### Useful Websites

The Alzheimer's Society  
Age UK

## **9.0 Strategy for implementation**

See table in Appendix 1 for this.

## **10.0 Date for re-audit**

This Clinical Audit will be re-audited on: *This piece of research will be ongoing.*

Audit action plan

Recommendation	Suggested actions	Staff responsible	Planned completion date	Actual date
Adapt the tool to include organisational factors that may affect intake	Include an extra box on the assessment tool to identify problems involved in the eating environment e.g. too loud music or patients being asleep until the meal is served etc.	Lee Martin	October 2011	
Start to validate the tool	Get the nurses from a floor to use the tool at the same time I do and see if we identify the same behavioural problems using the tool	Lee Martin	November 2011	
Assess possible outcomes of new patients the tool is used on i.e. quantitative evidence	For example a decrease in the amount of supplements used once the tool has been assessed on a patient and if once supplements have been stopped is there any change in the patient's weight. Other outcomes include the patient being able to feed themselves when previously they could not, an increase in intake/change in meal wastage, decrease in length of time eating etc	Lee Martin	December 2011	