Clinical Audit:

The Dementia Mealtime Assessment Tool (DMAT*)

(*Used under permission from Lee Martin, 2015)

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INTRODUCTION

The Dementia Mealtime Assessment Tool (DMAT) is a two-part instrument used to identify poor eating behaviours in people with dementia and reduce prevalence of malnutrition in hospital by maximising nutritional intake. It has been developed by Lee Martin and is used under his permission. Malnourished patients have higher rates of morbidity and mortality, longer length of hospital and stay and more frequent hospital admissions than well-nourished patients (Elia et al, 2005). Of those admitted to hospital, individuals over 80 years are five times more likely to be malnourished than those under 50 years. Sixty percent of older individuals are at-risk of becoming malnourished in hospital or of malnutrition worsening during their stay (ENHA, 2005).

The consequences of malnutrition are vast and include impaired immune response, reduced muscle strength and fatigue, impaired wound healing, nutrient deficiencies, and impaired psychosocial function (BAPEN, 2009). Malnutrition in older people can be further exacerbated by factors such as poor appetite, poor dentition, limited mobility, disease state, confusion and dementia (Hickson, 2006). In identifying behavioural feeding difficulties and implementing tools to overcome them, the DMAT seeks to help individuals with dementia maintain independence, dignity and improve quality of life.

AIM

The aim of this pilot was to trial the use of the DMAT in elderly care patients with dementia or cognitive impairment in order to assess feeding difficulties and the effectiveness of suggested interventions for overcoming the feeding difficulties identified.

METHODS

Ten patients with dementia or cognitive impairment were identified on Marjorie Warren ward (Elderly Care) at King's College Hospital. Patients included in the trial had been recognised by nurses at ward level as having nutritional concerns or feeding difficulties and met the following criteria:
  − On a red tray
  − MUST score of >1
  − Referred to the dietetic team

Data was collected over two days by 3 observers (2 students; 1 supervisor).

Patients were observed from a moderate distance during their lunchtime meal and observations were recorded by dietitians via the DMAT checklist (DMAT Part 1) using the tick box recording system. If a behavioural feeding difficulty was identified, the observers then matched the feeding behaviour to the suggested behavioural intervention(s) using the DMAT Part 2. Interventions could only be considered if resources for these interventions were available at ward level.

RESULTS

Table 1: Style of Eating & Pattern of Intake

	Yes ~1x	No / Not Seen	Yes > 2x
Incorrectly uses spoon, fork or knife	1	8	1
Unable to cut meat		9	1
Difficulty getting food onto utensils	1	8	1
Difficulty identifying food from plate		10	
Eats desserts/sweets first or prefers sweet food	2	8	
Eats only certain foods		9	1
Eats too fast		10	
Plate wanders on table		10	
Eats other peoples food		10	
Incorrectly uses cups or glasses		10	
Mixes food together		10	
Slow eating / prolonged meal times	2	7	1
Falls asleep or is asleep during meal time	3	7	
Spills drinks when drinking		10	
Eats non-food items		10	
Doesn't eat lunch but eats breakfast and some dinner		10	

Table 2: Resistive or Disruptive Behaviour

	Yes ~1x	No / Not Seen	Yes > 2x
Hoards, hides or throws foods or plays with food	1	9	
Verbally refuses to eat or states "No More, Finished, Not Hungry"	1	9	
Interrupts server / food service or wants to help	1	9	
Distracted from eating	1	9	
Stares at food without eating		9	1
Demonstrates impatient behaviour during or before meal		10	
States "I can't afford to eat" or wants to pay for meal		10	
Eats small amounts and leaves table		10	
Wanders during mealtime / unable to sit still for meals		10	
Shows agitated behaviour	1	9	

Table 3: Oral Behaviour

	Yes ~1x	No / Not Seen	Yes > 2x
Difficulty chewing	1	8	1
Difficulty swallowing		10	
Prolonged chewing without swallowing	1	9	
Does not chew food before swallowing		10	
Holds food in mouth		10	
Bites on spoon		10	
Spits out food		10	
Refuses to open mouth	2	8	

- **2/10 patients were observed being unable to use their spoon, fork or knife correctly.**
  Some of the suggested interventions already in place. Custom or large handled utensils unavailable on ward.

- **1/10 patients were observed being unable to cut their meat.**
  Some of the suggested interventions already in place. Special knives unavailable on ward.

- **1/10 patients were observed having difficulties getting food onto utensils**.
  Plate guard, lipped plate and deeper spoons unavailable on ward.

- **1/10 patients were observed eating their dessert first.**
  Food is served on trays at ward level and serving in courses may be unrealistic due to ward constraints.

- **3/10 patients were observed eating slowly.**
  Warmed plates, smaller portion sizes and re-heating food later on unrealistic due to ward constraints and food hygiene policy.

- **3/10 patients were observed falling asleep during mealtime.**
  Interventions were in place.

- **1/10 patients were observed playing with food.**
  Smaller portion sizes unavailable.

- **1/10 patients were observed interrupting server or wanting to help.**
  Giving the patient a role in meal service would be unrealistic at ward level due to acute condition, falls risk, etc.

- **1/10 patients were observed to be distracted from eating.**
  Changing the meal environment unrealistic on this ward.

- **1/10 patients were observed staring at food without eating.**
  Some of the suggested interventions already in place. Further adjustments to lighting may be unrealistic on this ward.

- **1/10 patients were observed showing agitated behaviour.** *Some of the suggested interventions already in place. Calming music and use of the same staff for feeding unrealistic due to ward constraints.*

- **2/10 patients were observed having difficulty chewing.**
  Interventions were in place.

- **1/10 patients were observed to prolong chewing without swallowing.**
  Interventions were in place.

- **2/10 patients were observed refusing to open their mouth.**
  Interventions were in place.

DISCUSSION

Depending on the behavioural observation, some of the suggested interventions were already in place. However, not all of these interventions were fully carried out. Busy nursing staff and shortage of mealtime volunteers meant that although red trays were provided, not all of the patients were being given help for extended periods. Some patients were left unassisted.

NHS budget constraints may also affect the amount of resources available at ward level. For this reason, were unable to make any additional interventions, which impaired follow-up of all patients included in this pilot. Therefore, we were unable to see an improvement in feeding difficulties assessed by the DMAT and/or changes in weight/BMI over time. A discussion of our findings and potential recommendations for the use of the DMAT in hospital are listed below.

Identification and Follow-Up

Many of the patients on the elderly care ward in hospital are acutely unwell. Since a number of these interventions take time to show effect (e.g. adapted cutlery), follow-up at recommended weekly or monthly intervals may not be achievable.

Additionally, cognitive impairment in hospital often involves acute delirium as a result of infection, surgery or medication. This is a not a static phenomenon and can resolve on its own. Therefore, eating behaviour may change intermittently and improvements in eating behaviour or BMI may be due to resolution of delirium rather than behavioural interventions.

Observation

The layout of Marjorie Warren ward is predominantly 2-4 beds to a room. In this environment, it was difficult to observe patients unnoticed. Patients were often sat quietly eating when observers entered the rooms. Upon seeing observers, patients would often look up and become distracted. Others appeared apprehensive about our presence in the room with one patient becoming agitated. This may have affected eating behaviour.

Observers were conscious not to stare at patients whilst eating. However, observing from a distance, in this manner, made it problematic to assess certain behaviours such as biting on cutlery or holding food in the mouth. Therefore, we felt that those assisting patients would be in a better position to observe these oral behaviours, rather than observing from afar.

The majority of behaviours were marked as no/not seen. This is not necessarily because the eating behaviours were not present, but because they could not be identified from observation. Patients with red trays require assistance with eating. When assisted by a nurse or family member, we were unable to clearly identify certain behavioural difficulties such as trouble getting food onto utensils or

difficulty identifying food from the plate. However, this does not mean they do not struggle with the behaviours if left unassisted. Furthermore, there is a large discrepancy between whether a behaviour is not seen or whether it does not exist. For example, many people were not observed drinking during the mealtime observation. However, this does not indicate that they do not struggle with drinking or are not at risk of dehydration. Therefore, we would recommend separating *no* and *not seen* into two separate observations for ward use.

Suitability of Interventions at Ward Level

Although it is clear that DMAT interventions have been developed based on best practice guidelines. Realistically, not all of the suggestions were applicable at ward level due to time-constraints, inappropriate facilities and shortage of mealtime volunteers. Items such as special cutlery, coloured or suctioned plates and non-slip placements may not be available on the ward and funding may be limited.

Due to the busy nature of the ward and the heavy strain already placed on NHS staff, we feel that 7-10 minutes per observation is a considerable amount of time to spend when there are many patients to observe. It may be useful to shorten the DMAT as a separate tool for ward use. For example, it could be limited to ten core behaviours with objective observations such as "yes," "no" and "not seen." Eating behaviours such "eats other people's food" or "leaving the table" which are more applicable to a care home environment could be omitted from the hospital-based tool. Interventions could also be more closely adapted to ward resources. As an example, we have highlighted the interventions we feel would not be realistic on our wards at KCH (see appendix).

Conclusion

The DMAT is clearly a useful tool, which helps to highlight feeding difficulties in those with dementia or cognitive impairment and implement interventions to reduce malnutrition, increase independence and improve quality of life. However, results from this pilot conclude that the tool, in its present form, is more suited to a care home environment. In hospital, the DMAT is potentially more useful as a training tool for nurses and catering staff. Development of a shortened, hospital-based version of the DMAT could also be useful direction to consider.

References

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Appendix

Table 4: Realistic Interventions at Ward Level

Interventions we feel are unrealistic at ward level, at the present time, are highlighted in red.

Suggestions for dealing with the behaviour

Use custom or large handled utensil. Try verbal cues & show correct use. Try finger foods. Refer to OT
Provide cut meats, soft meats or finger foods. Special knives may help if reduced grip strength is identified
Try a plate guard or lipped plate. Use a deeper spoon. Trying finger foods may take the pressure off cutlery use
Use plates with simple design & colour contrast between plate & place mat/plate & food
Serve meal in courses i.e. one at a time & keep desserts/sweets out of sight, not on trays
Serve one item at a time with high calorie, high protein foods first
Offer food in small portions. Provide verbal cues too slow down & model slower eating
Use non-slip placemat or suction plate
Keep other peoples food out of reach, limit number of foods available at one time
Offer cup with handles or straw. Use verbal or manual cues and show correct use. Use coloured cups &/or liquids
Ignore as long as the food is eaten
Serve food on warmed plates. Offer smaller portions more often. Allow 1 hour to eat & re-heat if needed
Use verbal & manual cues to eat. Patient may require a medication review
Offer a straw or a two-handled cup if acceptable. Offer small amounts of fluid at a time in suitable cup
Take non-food items away & replace with food or drink or another distraction
Person may benefit from carbohydrate based meal in the evening

Suggestions for dealing with the behaviour

Remove items or keep food items to a minimum on the table, serve smaller portions
Remove meal for 5-10 minutes & then serve again. Investigate cause e.g. food preferences (esp. cultural foods) or food consistency. Consider soft & possibly single textured food & check for underlying physical or swallowing difficulties. Person may benefit from receiving assistance from one specific carer or have consistency in feeding practices
Give the person a role in meal service e.g. setting table, pouring water, helping others to the table
Change the meal environment*. Other people modelling eating may help
Use verbal cueing & prompting to encourage self-feeding & demonstrate eating motions so the person can imitate. Lighting - make sure adequate light over meal place. Move patient to or away from window to assess light interference
Serve them their meal before other people. Offer food in courses & minimise waiting times
Ensure that the person is not depressed. Provide meal tickets or vouchers to allay their fears

Suggestions for dealing with the behaviour

Encourage the use of finger food to take away or have while wandering. Check environment* is calm. Walk person before meal & plan route that ends with the mealtime. Ensure good intake at more appropriate times e.g. breakfast
Check the environment* Calming music may help reduce agitation (esp. verbal & physically non-aggressive behaviours) If patient is being fed consider using the same carer to feed rather than using different carers. Check pain assessment

Suggestions for dealing with the behaviour

Provide softer food options. Check dental health
Liaise with SLT. Stroke throat to encourage swallowing
Use verbal cue to chew & swallow. Provide soft, easy to swallow foods. Liaise with SLT
Use verbal cue to chew. Puree or thicken food. If choking is a hazard liaise with SLT
Use verbal cue to chew. Massage cheek gently. Experiment with different food textures & flavours. Try foods with heightened sensory input e.g. salty, cold, carbonated, spicy, crunchy. Liaise with SLT
Use plastic coated spoon
Check for bites that are too big or food is liked, or temperature or texture is appropriate. Reassess if this food is still liked - if you don't like a food you spit it out! Check seasoning & cultural / religious preferences
Use verbal cue to open mouth. Touch lips with spoon. Manually assist with food. Try straws for drinks. Softly stroking someone's arm & talking to them about the food may help