

# Nutritional assessment in elderly care: a MUST!

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## Abstract

Malnutrition affects over three million people in the UK with associated health costs exceeding £13 billion annually.[1] In hospital, malnutrition has been shown to increase complication rates, morbidity, mortality, hospital readmissions, and length of hospital stay.[2] To screen for malnutrition, a reliable and validated screening tool such as the malnutrition universal screening tool (MUST) should be used.[3] We believe that improved patient outcomes and significant savings to the trust can be achieved, not only by ensuring that every patient has a MUST score documented, but that it is calculated correctly and the appropriate interventions are implemented.

We have carried out the audit three times (May, July, and November 2013). The study included the patients on the elderly care ward of Watford General Hospital (n=64, 62, and 63 respectively). MUST scores documented in nursing notes for each patient were noted. We re-calculated each MUST score ourselves for comparison. We went through patient notes and nursing information and noted which recommended nutritional interventions were being implemented.

Our results highlighted several issues:

- 1) Patients did not consistently have a MUST score documented
- 2) MUST scores were calculated incorrectly. This was generally due to BMIs calculated incorrectly, and patients' weights from six months ago not being known
- 3) High MUST scores not being acted on appropriately.

Our interventions have involved liaising with various teams within the hospital to maximise the efficacy of the MUST score. This has included encouraging the trust to provide regular training to nurses because of high nursing staff turnover. Following our audit, the dietitian department agreed to undertake weekly ward rounds to screen for patients at risk of malnutrition. Our interventions so far have resulted in increased proportion of MUST scores being calculated (73 to 97%), and increased rates of patients being referred to dietitians (62 to 86% in the second audit cycle).

## Problem

The MUST is a screening tool used to detect patients who are at risk from malnutrition. The MUST score is calculated using three steps: body mass index (BMI), percentage weight loss in past six months, and disease effect. Each resulting score has its own set of recommended interventions. Higher scores represent a greater risk of malnutrition. In order for the MUST score to be used effectively, all of these steps need to be carried out accurately. This audit was carried out on the care of the elderly wards at Watford General Hospital. We found that the following errors commonly occur:

1. Patients do not have a MUST score calculated at all
2. BMI is calculated incorrectly, or is not calculated at all and a score is selected at random
3. Weight loss in the past six months is frequently not known, and this is often guessed
4. Once a MUST score has been calculated, the recommended interventions are not always carried out. All of these factors contribute to malnourished patients not being recognised, which is likely to negatively impact on

their clinical outcome.

## Background

Malnutrition is a state in which a deficiency of nutrients causes measurable adverse effects on body composition, function or clinical outcome.[4] It affects over three million people in the UK with associated health costs exceeding £13 billion annually.[1] In hospital, disease-related malnutrition has been shown to result in increased wound infections, chest infections and pressure ulcers; increased length of admission; increased numbers of re-admissions; and increased overall morbidity.[2] The National Institute for Health and Care Excellence (NICE) guidance on nutrition support in adults recommends nutritional screening in hospital.[3] To screen for malnutrition, a reliable and validated screening tool such as the malnutrition universal screening tool (MUST) should be used. The MUST was launched in 2003 and is supported by the British Dietetic Association (BDA), the Royal College of Nursing (RCN), and endorsed by NICE.[3] Higher MUST scores represent a greater risk of malnutrition. Each score has its own set of recommended interventions. We believe that improved

patient outcomes and significant savings to the trust can be achieved, not only by ensuring that every patient has a MUST score documented, but that it is calculated correctly and the appropriate interventions are implemented.

## Baseline measurement

The first cycle of the audit was carried out in May 2013 on the care of the elderly wards at Watford general hospital. Sixty-four patients were included in this audit. Forty-seven out of 64 patients (73%) had MUST scores documented. Thirty-three of 47 (70%) were calculated and documented accurately. Of the remaining 14 patients, eight documented MUST scores were underestimated, and six were overestimated. 15% of scores were miscalculated due to improper BMI recording, 17% were miscalculated due to incorrect weight loss estimation, and 8% were incorrectly scored for effect of disease on nutritional status. Fourteen of 47 (30%) patients had one or more aspects of their recommended action plan which was not implemented. Of the patients who scored 2 or more on MUST and therefore required a dietician referral, 38% of these were not seen by a dietician.

## Design

We established that many of the errors that occurred when using the MUST score were because of lack of proper training among nursing staff. This is largely due to high nursing staff turnover. We presented the audit to the dietitians who have arranged for the hospital nutrition nurse to provide regular training on how to use MUST. In order to increase ease and accuracy of BMI calculation, the British Association of Parenteral and Enteral Nutrition (BAPEN) have recently provided BMI and weight loss charts that are filed in every patients' notes. We encouraged the pharmacists, who regularly liaise with elderly patients' care homes and GPs to obtain drug histories, to additionally ask for patients' previous weight, and to document this clearly at the back of drug charts. Finally, the dietitians agreed to carry out weekly ward rounds on the elderly care wards, to pick up any missed referrals for patients at risk of malnutrition.

## Strategy

PDSA cycle 1: Following the results of the first audit cycle, the main issues that were picked up on were: 1) lack of education among nursing staff regarding how to correctly use MUST, such as calculating MUST scores incorrectly and not acting appropriately on high MUST scores, and 2) difficulties in obtaining patients' previous weights. We presented the results of our audit in the form of a Powerpoint presentation at the weekly meeting for all the pharmacists working at the hospital. We used this opportunity to encourage the pharmacists to also request information regarding the patient's usual pre-hospital weight when contacting GPs and care homes for the usual medications on admission. This information would then be written down at the back of the patients' drug charts. We also aimed to organise joint teaching sessions with dietitians to educate all staff on the importance of nutrition.

PDSA cycle 2: The number of patients that had a MUST score calculated increased from 47/64 (73%) to 60/62 (97%). The two patients that did not have a MUST score calculated were new patients on the ward that had not had their baseline paperwork filled out yet. This shows that the MUST score has now become a standard part of patient care. However, the accuracy of the scoring was only 38/60 (63%) in the second cycle compared with 33/47 (70%) in the first cycle. Even so, the number of patients with high MUST scores who were being referred to a dietician was increased from 62% in the first cycle to 86% in the second cycle. This demonstrates that although more appropriate action was being taken to act on high MUST scores, calculating the MUST score accurately remained a challenge.

PDSA cycle 3: In the third audit cycle, the number of patients who had a MUST score calculated remained high – 61/63 (97%). Out of the two patients that did not have a MUST score, one had refused to be weighed, and the other could not be weighed due to severe illness. The accuracy of MUST scores remained similar to previously at 67%. Since this cycle of the audit has been carried out, BAPEN has started providing every patient with coloured charts that aid in calculating BMI to help to reduce this source of error. Unfortunately, fewer people were being referred to the dietitians in this audit cycle (6/12 – 50%). We had a meeting with the dietitians where we presented these results. Subsequently to this meeting, the dietitians started doing weekly ward rounds to screen for patients with high MUST scores who were not being referred to them.

## Results

The number of patients with calculated MUST scores were: 47/64 in the first cycle (73%), 60/62 in the second cycle (97%), and 61/63 (97%) in the third cycle. The number of MUST scores that were calculated accurately was 33/47 (70%) in the first cycle, 38/60 in the second cycle (63%) and 41/61 (67%) in the third cycle. The biggest contributor to errors in MUST scoring was incorrect estimation of weight loss. Percentage of patients being referred to a dietician was 62%, 86% and 50% in audit cycles 1, 2, and 3, respectively.

## Lessons and limitations

Patient nutrition is an important issue that requires the input of many members of the multi-disciplinary team: doctors, nurses, dietitians and pharmacists. One of the limiting factors for the MUST score being used effectively is high nursing staff turnover, and inadequate education on how to use the MUST. Some of the difficulties that we faced while carrying out the audit included obtaining measurements for patients, which could be technically challenging due to poor mobility. Obtaining patients' previous weight, if not known by the patients themselves, was time-consuming as it involved searching through old medical notes or contacting relatives and care homes.

Our main intervention to ensure that nutritional assessments are carried out correctly lies in continued education. By carrying out regular audits and presenting our findings to the teams, we hope to

have improved outcomes by raising awareness of the importance of nutrition and the MUST score as an important tool for improving patients' overall health and well-being. It was noted that in the third audit cycle, the number of patients with a high MUST score being referred to the dietitians had gone down. This highlights the need for rigorous training for nursing staff in how to correctly respond to a high MUST score. One of the main barriers to this is high nursing staff turnover, which is why the dietitians carrying out ward rounds to screen for patients with high MUST scores is likely to be a valuable intervention to detect these high-risk patients.

To date this audit has only taken place on elderly care wards. We are currently collecting data from the acute admissions unit, where time constraints are likely to be problematic and patients are at risk of being sent home without any appropriate nutritional interventions.

## Conclusion

The MUST score is an important tool for detecting patients at risk of malnutrition and taking appropriate action to ensure adequate nutrition. One of the main obstacles to the MUST score being calculated accurately was not knowing patients' previous weight. Another issue was high MUST scores not being acted on appropriately. Education and interaction among different members of the multidisciplinary team was necessary to implement change. We succeeded in making the MUST score an integral part of nursing care plans, and through continued education and working closely with all members of the multidisciplinary team we hope that the MUST score will continue to be used effectively both on care of the elderly wards, and in the rest of the hospital.

## References

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## Declaration of interests

Nothing to declare.

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