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Evaluation of Nutrition Screening by the "Malnutrition Screening Tool"

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Introduction
There are many nutrition screening tools but majority requires body weight, height and body mass index assessment which could be complicated and time-intensive for local busy wards. The Malnutrition Screening Tool (MST) not requiring BMI assessment is simple and convenient which was shown to be valid and reliable in acute hospital patients. The MST is based on appetite and recent unintentional weight loss and the sum of the two parameters gives a score between zero and five; scores two or above is considered at risk of malnutrition.

Objectives
To evaluate the sensitivity and specificity of the "Malnutrition Screening Tool" for screening patients in an acute hosptial.

Methodology
Nutrition screening using MST has been implemented in three acute wards in Alice Ho Miu Ling Nethersole Hospital since 6th August 2012. Between 5th and 9th November 2012, all patients admitted to three acute medical wards were screened by nurses using MST within 24 hours and assessed by a dietitian (same dietitian throughout) within 48 hours of admission. In contrast to MST, dietitian determined patient nutrition risk after evaluating the full clinical picture in addition to the two parameters of appetite and recent unintentional weight loss. Dietitian assessment is used as the gold standard against which MST score compared to evaluate MST's sensitivity and specificity. Measure of agreement of MST performed by nurses and dietitian was analyzed using Kappa statistics.

Result
There were 114 patients (52 males, mean age 70.1 years; and 62 females, mean age 71.5 years) completed in this evaluation. According to MST, 20% (n = 23) of patients were at risk of malnutrition, and 80% (n = 91) were not at risk. According to dietitian assessment, 40% (n = 46) of patients were at risk of malnutrition, and 60% (n = 68) were not at risk. Sixteen per cent (n = 18) of patients were correctly classified by the MST as being at risk of malnutrition (true positives) and 55% (n = 63) of patients were

correctly classified as being not at risk of malnutrition (true negatives). According to MST, 4% (n = 5) of patients were misclassified as being at risk of malnutrition (false positives) and 25% (n = 28) of patients were misclassified as being not at risk of malnutrition (false negatives). The MST had a sensitivity of 39% and a specificity of 93%. The positive predictive value was 0.78 and the negative predictive value was 0.69. This showed MST to be highly specific but not sensitive enough to detect risk of malnutrition. However, when MST scores by nurses and dietitian are compared by Kappa statistics, the measure of agreement was poor with Kappa value at 0.214 only. The variation in MST scoring by nurses and dietitian should warrant further evaluation.