A nutrition screening tool is used to identify individuals who are potentially at nutrition risk. The literature supports the important impact poor nutrition status plays on increasing morbidity, length of stay and hence health care costs.1-8 There is a need for regional nutrition screening process. Barriers to regional implementation have included the cost of additional human resources.

Member: Site:
Jade Nayler SBGH
Brenda Hotson WRHA

Purpose: (goals, scope, intended users, settings, and patient/client groups)
To find a nutrition screening tool that is reliable, valid, quick, simple and cost efficient for an acute care setting.

Definitions:
Nutrition screening is the process of identifying characteristics known to be associated with nutrition problems. Nutrition screening reveals the need for comprehensive nutrition assessment/nutrition intervention in the at risk population so professional resources can be allocated to those at risk.

Evidence Review: (Please list type and grade of evidence reviewed)

<table>
<thead>
<tr>
<th>Tool/Usage</th>
<th>References</th>
<th>Brief Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutritional Assessment Tool</td>
<td>Description</td>
<td>References</td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td><strong>Veterans Affair – Nutrition Status Classification Worksheet</strong></td>
<td>The Department of Veterans Affairs (VA) Nutrition Status Classification scheme uses clinical data that are routinely collected on admission or shortly thereafter for quick inpatient nutrition screening. In this scheme, patients are assigned to 1 to 4 classification levels according to 7 individual indicators. The indicators include nutrition history, unintentional weight loss as a percent of usual body weight, diet, diagnosis, albumin, and total lymphocyte count. After ratings (1 to 4) are assigned to each of the 7 indicators, overall nutritional status for each patient is determined by an algorithm.</td>
<td>Hiller, L., Lowery, J.C., Davis, J.A., Shore, C.J., Striplin, D.T.. Nutrition status classification in the Department of Veterans Affairs. Journal of American Dietetic Association. 101: 786-792, 2001.</td>
<td></td>
</tr>
<tr>
<td><strong>Malnutrition Screening Tool (MST)</strong></td>
<td>Tool scores nutrition risk based on patient’s answers to 3 questions pertaining to weight and appetite (See attached)</td>
<td>Ferguson, M., Capra, S., Bauer, J., &amp; Banks, M. (1999). Nutrition, 15, (6), 458 – 464.</td>
<td></td>
</tr>
</tbody>
</table>
Nutrition Screening Audits:

Retrospective and prospective health record audits have been completed at each acute care site to determine the inpatient population at risk for malnutrition and measure the effectiveness of the current referral system at that time. 21-68% of the inpatient population were at risk for malnutrition depending on the tool used and the site/program screened. Out of those that were at risk only 33 – 56% were seen by a clinical dietitian.

Once a nutrition screening program was implemented at HSC, nutrition intervention improved 116%. Starvation indicator results improved 70%.

<table>
<thead>
<tr>
<th>Site</th>
<th>Date</th>
<th>NS Tool</th>
<th># Charts Audited</th>
<th>% Patients at Risk for Malnutrition</th>
<th>% AT Risk Seen by RD</th>
<th>% Not AT Risk Seen by RD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Sciences Centre</td>
<td>1997</td>
<td>Nagel</td>
<td>1103</td>
<td>45.7%</td>
<td>37.3%</td>
<td>51.5%</td>
</tr>
<tr>
<td>Health Sciences Centre</td>
<td>2000</td>
<td>Nagel</td>
<td>1200</td>
<td>48.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health Sciences Centre</td>
<td>2007</td>
<td>Nagel &amp; MST</td>
<td>100</td>
<td>36% MST 47% Nagel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBGH</td>
<td>2003</td>
<td>Veterans Affair</td>
<td>299</td>
<td>68%</td>
<td>43%</td>
<td>15%</td>
</tr>
<tr>
<td>SBGH</td>
<td>2005</td>
<td>MST</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Victoria General Hospital</td>
<td>2007</td>
<td>Nagel &amp; MST MST only</td>
<td>100 retrospective 50 prospective</td>
<td>28% (Nagel) 36% MST</td>
<td>55%</td>
<td>35%</td>
</tr>
<tr>
<td>Grace Hospital</td>
<td>2007</td>
<td>Nagel &amp; MST MST only</td>
<td>100 retrospective 50 prospective</td>
<td>21% surgery; 41% medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concordia Hospital</td>
<td>2007</td>
<td>MST</td>
<td>50 prospective</td>
<td>40% surgery 50% medicine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOGH</td>
<td>2007</td>
<td>MST</td>
<td>50 prospective</td>
<td>29% surgery 44% medicine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

MST = Australian Malnutrition Screening Tool

Comparison of the NST and MST:

A prospective nutrition screening chart audit in 100 patients at Health Sciences Centre using the Australian Malnutrition Screening Tool (MST) and the Nagel Screening Tool (NST) which is used at HSC was completed in 2007. The purpose of the project was to evaluate the effectiveness of the two nutrition screening tools.

Results:
- The MST could be completed on average, in 35.8 seconds, while the HSC NST required, on average, 4.33 minutes to complete
- There was no discernable difference in effectiveness of predicting nutrition risk between the two screening tools
- The effectiveness of the two screening tools was not program-dependent
- The responsiveness of RDs in assessing at-risk patients did not fall within the goals described in the Health Sciences Centre Clinical Nutrition Services Policy and Procedure Manual, with an average response time of +4.2 days past the recommended time frame for assessing patients at nutritional risk.
- Based on these findings, it is recommended that attention be focused on developing strategies designed to improve RD response rate, with the goal that at-risk patients will be assessed within the time lines described in the Health Sciences Centre Clinical Nutrition Services Policy and Procedure Manual.
Concordia Hospital:
The units had consulted the dietitians to see 3/23 (13%) patients who were scored “at risk”. Conversely, of the 27 patients scored as “not at risk”, 10 patients were seen by the dietitian (5 consulted by units and 5 initiated by RD). This supports the hypothesis that the current referral/consultation process is not effective/accurate at identifying patients at risk.

Recommendations:
Implement the MST region-wide in the acute care setting in medicine/surgery inpatient areas.

Practice Changes:
Referral process change.
Earlier identification of patients at risk and earlier intervention. Impacts on type of nutrition care plans developed due to earlier intervention. More proactive approach to care.
Realignment of resources. Assists in prioritization and organization of workload.

Anticipated Impact:
Improved patient care as focusing resources on patients in need.
Improved efficiency/effectiveness.
Increased number of patients needing nutrition support and oral supplementation.
Incremental increase in dietitian workload. Reduction in consults. Increased number of patient follow-up assessments.
Additional responsibilities for staff performing nutrition screens.

Recommendation for implementation:
1. Replace HSC current nutrition screening tool (Nagel) with MST in medicine/surgery areas.
2. Trial Nutrition Screening MST tool at one Community Hospital – VGH.
3. Implement GH, CH, SOGH, SBGH

Future: Long term plan is to embed the MST into nursing history of electronic patient record which will then flag patients at risk. Phase IIb HISP: Clinical Documentation.
References:


These recommendations are being reviewed by:

| Brenda Hotson RD, MSc, WRHA Clinical Nutrition Manager – Acute Care | Gabriella Benedictson RD, Clinical Nutrition Site Leader - SBGH |
| Andrea Rodrigue RD, Clinical Nutrition Site Leader - VGH | Donna Butterworth RD, Clinical Nutrition Site Leader - CH |
| Cheryl Rayter RD, Clinical Nutrition Site Leader - GH | Mavis Lam RD, Clinical Nutrition Site Leader - SOGH |