Effectiveness of a nutrition assistant role in a multidisciplinary head and neck cancer clinic

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Acknowledgements: Nicole Kiss, Sarah Gilliland, Jacq Black
Background

- Treatment for head and neck (H&N) cancer
  - Surgery
  - Chemotherapy (CTx)
  - Radiotherapy (RT)
  - Combination

- RT or chemoRT delivered over a period of 5–7 weeks
- Associated with significant acute toxicities
  - Mucositis, odynophagia, dysphagia, xerostomia and anorexia
  - Substantial impact on nutritional status and swallowing function
Background

- Malnutrition prevalence in H&N cancer is as high as 50% prior to treatment
- Rates of dysphagia prior to treatment is 59%
- Further exacerbation of malnutrition 2° acute and late Tx toxicities
- EBG recommend:
  - Weekly dietetic contact improves outcomes in patients receiving RT
    *(NHMRC Grade A)*
- Substantial requirement for dietetic services
Baseline model of care

- At Peter Mac, pts with H&N cancer receiving curative RT or chemoRT are managed in a twice weekly MD clinic
  - Radiation Oncologists, Dietitians, Speech Pathologist, Nurses, Pharmacist
- 40 – 50 pts on treatment at any one time
- 20 – 30 pts attend each MD clinic
- Pts are seen by the dietitian
  - Weekly during radiation
  - Fortnightly up to 6 weeks post radiation
- Limited time to spend with patients with complex nutritional needs
Nutrition assistant (NA) workforce

- NAs are AHAs specialising in nutrition
- Comprehensive 8 week orientation training program
- Usual roles:
  - Malnutrition screening
  - Basic nutrition intervention
  - Inpt and ambulatory setting
- Identified scope to implement this role in the MD H&N clinic to perform screening and basic intervention to release dietitian time
Aims

- To evaluate the effectiveness of the NA role in the MD H&N clinic
  - Proportion of dietitian time spent with higher risk patients
  - Impact on clinical outcomes
  - Patient satisfaction (validated patient satisfaction with nutrition services questionnaire)
Nutrition risk criteria

- High risk:
  - T3-T4 &/or N2-N3 oropharynx, larynx, hypopharynx, nasopharynx
  - T3-T4 &/or N2-N3 oral cavity
  - Adjuvant chemoRT
  - Mild to severe malnutrition in the presence of dysphagia.

- Intermediate risk:
  - Adjuvant chemoRT for non-oral cancer sites
  - Adjuvant RT for oral cancer sites
  - In-field boost
  - Definitive RT alone +/- cetuximab

- Low risk:
  - Adjuvant RT non oral cancer sites (parotid, paranasal sinuses)
  - Mild malnutrition in the absence of dysphagia
  - Well-nourished
Methods

Pre-implementation

• Baseline data collected for 2 month period
• Pt satisfaction surveys sent 6 weeks post RT

Implementation

• NA role implemented
• 1 month settling in period

Post-implementation

• Data collected for 2 month period
• Pt satisfaction surveys sent 6 weeks post RT
New model of care

Dietitian assessment (any time point during/ post treatment excluding first and final week of RT)

Patient meets criteria for NA screen the following week*:
- Stable weight
- Stable food intake

No

Dietitian continues to review patient as per head and neck care pathway

Yes

NA screens patient using aPG-SGA

- Weight loss ≥1kg from previous week OR
- Food intake ≤75% of usual intake OR
- aPG-SGA score ≥6

No

Refer back to dietitian for review

Yes

NA education:
- Reinforce SMB diet information previously provided by the dietitian
- Provide nutrition supplement samples or prescription for existing supplements if required

NOTE:
- Nutrition assistants will weigh patients using the bioelectrical impedance scales in the first and last week of treatment
- *Excludes patients receiving enteral feeding
Nutrition assistant training

- New training module:
  - Observation in the clinic
  - Nutrition care pathways
  - Use of the PG-SGA short form
  - Malnutrition in Cancer eLearning program - H&N cases
  - Familiarity with referral triggers back to the dietitian
  - Use of BIA scales
## Patient characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Pre-implementation group (n=43)</th>
<th>Post-implementation group (n=48)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years), median (IQR)</td>
<td>62 (56 – 70)</td>
<td>63 (55 - 74)</td>
</tr>
<tr>
<td>Gender, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>33 (76.7%)</td>
<td>38 (79.2%)</td>
</tr>
<tr>
<td>Female</td>
<td>10 (23.3%)</td>
<td>10 (20.8%)</td>
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<tr>
<td>Tumour type</td>
<td></td>
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<tr>
<td>Oral cavity</td>
<td>12 (27.9%)</td>
<td>10 (20.8%)</td>
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<tr>
<td>Oropharynx</td>
<td>19 (44.2%)</td>
<td>28 (58.3%)</td>
</tr>
<tr>
<td>Nasopharynx</td>
<td>4 (9.3%)</td>
<td>1 (2.1%)</td>
</tr>
<tr>
<td>Hypopharynx</td>
<td>0 (0%)</td>
<td>3 (6.3%)</td>
</tr>
<tr>
<td>Larynx</td>
<td>7 (16.3%)</td>
<td>3 (6.3%)</td>
</tr>
<tr>
<td>Paranasal sinuses</td>
<td>1 (2.3%)</td>
<td>1 (2.1%)</td>
</tr>
<tr>
<td>Salivary</td>
<td>0 (0%)</td>
<td>2 (4.2%)</td>
</tr>
<tr>
<td>Disease stage, n (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>6 (14.0%)</td>
<td>1 (2.1%)</td>
</tr>
<tr>
<td>II</td>
<td>0 (0%)</td>
<td>2 (4.2%)</td>
</tr>
<tr>
<td>III</td>
<td>10 (23.3%)</td>
<td>12 (25.0%)</td>
</tr>
<tr>
<td>IVa</td>
<td>27 (62.8%)</td>
<td>30 (62.5%)</td>
</tr>
<tr>
<td>IVb</td>
<td>0 (0%)</td>
<td>3 (6.3%)</td>
</tr>
<tr>
<td>Concurrent chemotherapy, n (%)</td>
<td>25 (58.1%)</td>
<td>31 (64.6%)</td>
</tr>
<tr>
<td>Weight (kg), median (IQR)</td>
<td>76.2 (61.8 – 93.7)</td>
<td>73.7 (62.8 – 85.4)</td>
</tr>
<tr>
<td>BMIb (kg/m²), median (IQR)</td>
<td>25.1 (21.8 – 30.3)</td>
<td>25.7 (22.3 – 28.6)</td>
</tr>
</tbody>
</table>

21 (44%) patients identified for NA screen/ intervention
Outcomes - clinical

- Mean weight change similar
  - During RT (-5.6% vs -4.7%, p= 0.2)
  - Up to 4/52 post RT (-6.6% vs -6.5%, p= 0.9)
- Clinically important ↓ in pts receiving NGT feeding (42% vs 29%). Mean time to NGT feeding unchanged.
- NA role utilised in all risk categories. Minimal low risk numbers (n=1 and n=2).
- Low proportion of same day referrals back to DT
- No change in direction of DT time - focus on high risk patients (88% vs. 86%)
Outcomes – patient satisfaction

- Clinically and statistically significant improvement in:
  - Overall patient satisfaction (4.0 ± 1.1 vs 4.6 ± 0.61, p=.03)
  - Patient perceived benefit (3.8 ± 0.69 vs 4.4 ± 0.62, p<.01)
  - Dietitian interpersonal skills (3.91 ± 1.1 vs 4.6 ± 0.55, p=.02)

- Attributed to:
  - Patients receiving most appropriate care at the appropriate time
  - NA intervention patients had to meet strict criteria (stable weight and food intake) → shorter intervention likely preferable in these circumstances to full DT review
Outcomes – financial

- Robust economic evaluation not completed
- Model of care suggests a cost benefit related to difference in labour costs
Conclusion

- Nutrition assistants are an effective workforce in a MD H&N cancer clinic
- They support release of dietitian time across all H&N risk categories
- Demonstrated clinical outcomes are maintained and an increase in patient satisfaction
- Currently evaluating the effectiveness of the role in supporting the speech pathologists in the clinic
QUESTIONS?

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