"ScreenIT": Implementation analysis of a consumer-centred screening tool to guide supportive care during chemoradiation for head and neck cancer

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Background

ScreenIT is a consumer-centred, validated, web-based screening tool which connects patients with head and neck cancer, and their carers, to supportive care professionals (i.e.. speech-language pathology, dietetics, occupational therapy, physiotherapy, social work and psychology) during chemoradiotherapy treatment. ScreenIT reliably and correctly identifies which patients/carers require intervention from the multidisciplinary team[1]. Patients and carers complete ScreenIT on a weekly basis and the results guide referrals to the appropriate supportive care professional, at the right time, as determined by the patient. This study reports on the implementation constructs considered for translating ScreenIT into clinical practice in the Radiation Oncology Department at a large quaternary setting, the Princess Alexandra Hospital in Brisbane, Australia, using the Consolidated Framework for Implementation Research (CFIR)[2].

Rationale:

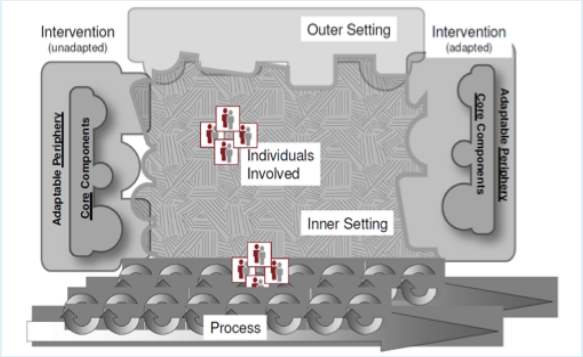
1. Assess the success of implementing ScreenIT into the clinical setting through determination of the CFIR domain factors relevant to our specific context
2. Develop implementation framework plan to address factors
3. Measure accuracy, efficiency, and cost-benefit of using the ScreenIT model following a controlled and stepped implementation phase

Methods

Design: Prospective implementation process using CFIR model: 3 months implementation planning, 3 months stepped, controlled context implementation, 3 months full scale roll-out

*Participants: S*equential HNC patients treated with definitive or post-operative CRT , and their carers, who were scheduled for routine intervention from the multidisciplinary team (MDT).

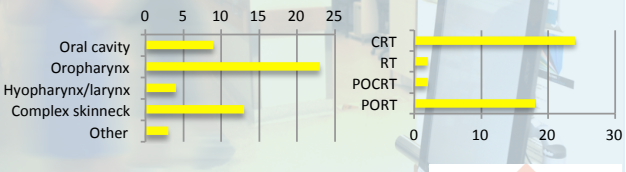
Procedure: Using the CFIR model, implementation was planned across 5 domains – intervention, inner and outer setting, individuals, and process for implementation. From April 2016, patient and carer participants ulitised ScreenIT to guide face-to-face service needs during CRT.



Analysis: Implementation planning data was analysed thematically. Accuracy and efficiency of ScreenIT was assessed through the determination of need of multidisciplinary intervention, time between screening and intervention and number of cancelled, unnecessary appointments. Cost efficiency was determined through direct comparison between standard service delivery, and that employed by ScreenIT.

Results

Participants. A total of 52 patients and 24 carers completed ScreenIT during the 6 month implementation phase (aged 22-92). The majority were treated non-surgically for oropharyngeal HNC, and were representative of our usual HNC cohort treated at PAH



Planning: Four themes were identified which enabled implementation – communication 37 stakeholder feedback session in 6/12), patient identification (stickers/signage/visability) scheduling (scheduled appointments, MOSAIQ reminders) and reporting (EMR and MOSAIQ, email, algorithms for referrals).

Accuracy and efficiency: ScreenIT participants were scheduled for a total of 247 routine MDT appointments. ScreenIT deemed 23% (n=57) MDT appointments cancellable, of which 17 appointments were retained following phone checking (4 requested appointment, 6 did not answer phone, 6 side effect severity increased, 1 swallow status changed). Overall ScreenIT accurately cancelled 81% of those appointments deemed cancellable. All patients deemed moderate/high risk were scheduled for MDT intervention within 4 clinical days of completing ScreenIT indicating 100% efficiency as per clinical safety algorithms. Compared to standard care, ScreenIT afforded AUD $346,460/year in cost-efficiencies.

CFIR constructs were examined and all 5 domains were relevant to the implementation of ScreenIT:

CFIR Domain	Radiation Oncology Department, PAH and ScreenIT Measurables
Intervention Characteristics	ScreenIT = intervention Internally developed, published, positive local pilot ScreenIT advantageous over standard service delivery Tailored to context, adaptable periphery ongoing Tested in research framework and scaled implementation Cost beneficial
Outer Setting	Patient-centred context, patient satisfaction ensured Context networked with other external organisations Competitive pressure Government mandate to reduce health spending
Inner Setting	Highly diverse, stable, organisation with decision-making autonomy High quality of connections, relationships, shared vision Stable and positive culture High capacity for change, shared receptivity/responsibility
Characteristics of Individuals	Individual value, familiarity, skill in using ScreenIT, positive experiences generate enthusiasm for ScreenIT Supported phases to achieve skilled, enthusiastic and sustained use High organisational citizenship, belief in "doing a better job"
Process	Implementation planned using incremental breaks and pilot trials Stakeholders identified and engaged Attracting and involving implementation champions Carrying out implementation as planned Feedback re: progress and quality of implementation, regular debriefing, specific and measurable objectives reported

Conclusions

Service implementation is complex and requires systematic planning and prospective use of an implementation framework. Several factors were identified as positively impacting on the controlled, stepped implementation of ScreenIT from April to September 2016. Strong intervention characteristics, inner setting and process constructs of the CFIR model drove successful implementation of ScreenIT.

ScreenIT was utilised across a representative sample of HNC patients and carers during the 6 month trial, and successfully identified patients at low risk and not requiring routine MDT intervention. Those patients screened as moderate to high risk were scheduled with 100% efficiency as per published clinical safety algorithms[1].

ScreenIT was found to be sensitive, accurate, cost-efficient and feasible, and is now the standard care in our centre.

References

1. Wall LR, Cartmill B, Ward EC, Hill AJ, Isenring E, Byrnes J, Chambers S, Dunn J, Nixon J, Whelan J, Porceddu SV. (2016). "ScreenIT": Computerised screening of swallowing, nutrition, and distress in head and neck cancer patients during (chemo)radiotherapy. *Supportive Care in Cancer, 54*, 47-53.
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