Adult Speech Pathology
Telepractice Programs in Queensland

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Disclosures

• The authors declare no potential conflict of interest with respect to the research

• All content is provided with consent
ACKNOWLEDGEMENTS

and my wider collaborative teams........
Systematic Telehealth Evaluation Process

- Human centred design principles – development and testing of system architecture (equipment/set up/connectivity) & tasks for clinical utility & feasibility
- Cohort testing for reliability & validity
  - Non-inferiority methodologies
- Patient / consumer (clinician, health service) satisfaction
- Clinical trials: full scale feasibility testing in clinics
- Implementation and service evaluation

(Ward & Burns, 2014)
Evidence: clinical swallow examination (CSE) via telepractice


CSE via Telepractice Model of Care
Telepractice Hub & Spoke Service Sites

18 Telepractice Sites

**Hub**
- Caboolture

**Spoke**
- Kilcoy
- Maleny
- Gympie
- Gayndah
- Mundubbera
- Eidsvold
- Monto
- Gin Gin
- Childers
- Mount Perry
- Biggenden
- Charleville
- Cunnamulla
- St George
- Cairns
- Mossman
## Pre-existing CSE Service model

<table>
<thead>
<tr>
<th>Hub site</th>
<th>No. spokes</th>
<th>Return travel distance to spoke sites</th>
<th>Frequency of SLP visits</th>
<th>Access to service</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>110 km</td>
<td>No regular service – as required</td>
<td>Clinician travels to site</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>62km -130 km</td>
<td>On site 3 days/week</td>
<td>Clinician travels to sites</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>160 km - 308 km</td>
<td>Fortnightly to each spoke site</td>
<td>Clinician travels to sites</td>
</tr>
<tr>
<td>4</td>
<td>2</td>
<td>400km</td>
<td>Fortnightly to each spoke site</td>
<td>Clinician travels to sites</td>
</tr>
<tr>
<td></td>
<td></td>
<td>925 km</td>
<td>On site 2 days/week</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1</td>
<td>282 km</td>
<td>On site 2 days/week</td>
<td>Patient travels in ambulance to hub site</td>
</tr>
</tbody>
</table>
SERVICE ESTABLISHMENT

• Informed by Consolidated Framework for Implementation Research (Damschroder et al., 2009)

1) Service implementation package: SLP manager
   – Service governance, equipment, operational procedures, service proformas and templates

2) Staff training: Telepractice SLP + Healthcare support worker
   – eLearning program consisting of procedural info, training videos, documentation etc
   – Practical training sessions via telepractice with expert telepractice SLP
   – Core knowledge and skills checklist completed prior to commencing telepractice service
SERVICE IMPLEMENTATION

• **Participants:**
  – Staff - 8 SLPs
    - 17 HSWs - 11 AHAs & 6 Nurses
  – Patients (n=46) referred from healthcare team at spoke site to telepractice SLP at hub site for CSE
    • 45 patients seen for single assessment
    • 5 patients seen for >1 assessment

TOTAL: 50 telepractice CSE sessions

<table>
<thead>
<tr>
<th>DETAILS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>23 (50%)</td>
</tr>
<tr>
<td>Female</td>
<td>23 (50%)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>39-102</td>
</tr>
<tr>
<td>Mean</td>
<td>81.65</td>
</tr>
<tr>
<td>Status</td>
<td>N(%)</td>
</tr>
<tr>
<td>Inpatient</td>
<td>36 (92%)</td>
</tr>
<tr>
<td>Outpatient</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>Reason for referral</td>
<td></td>
</tr>
<tr>
<td>Swallowing difficulty on food/fluids</td>
<td>27 (72%)</td>
</tr>
<tr>
<td>Upgrade food/fluids</td>
<td>13 (20%)</td>
</tr>
</tbody>
</table>
Results: Sessions n=40

✓ Improved service access
  ▪ All swallowing assessments completed effectively via telehealth
  ▪ Minimal technical issues

✓ Improved patient management
  ▪ 62% of patients required a change to diet or fluids post assessment

✓ Improved service efficiency
  ▪ 2 day mean reduction in waiting time (range = 0-13 days; p=0.002)
  ▪ 2½ hours in travel time was saved for the patient or clinician (range= 1½-8hrs)

✓ Cost savings
  ▪ Mean cost saving = $218 per session (95% CI = $85 - $981)

✓ High clinician satisfaction
  ▪ 87% of clinicians reported they were happy with the telepractice sessions

✓ High patient satisfaction
  ▪ 100% of patients were satisfied with the telepractice session

SERVICE EXPANSION & SUSTAINABILITY
• Adopted by 35+ facilities across QHealth
• State-wide working party supports service governance and sustainability
Head and Neck Cancer (HNC) Telehealth Services
"ScreenIT"
(Cartmill, Wall, Ward, Isenring, Hill, Nixon, Porceddu)

- Interdisciplinary computerised screening of swallowing, nutrition, and distress in patients with head and neck cancer & their carers
- Patient reported outcomes assist in triaging interdisciplinary referrals and management
- Screening items and tools -
  1. Side effects – Rating 17 items related to treatment + impact on intake
  2. Swallowing – Functional Oral Intake Scale
  3. Nutrition – Weight, PGSGA (abridged)
  4. Patient distress – NCCN Distress Thermometer
  5. Carer distress – NCCN Distress Thermometer with modified list for mealtime-related issues
  6. Request to attend next scheduled SLP and ND appointment
  7. Request for referral to support distress or any other concerns
# Patient Report

**SWALLOTHING/NUTRITION**

1. List of symptoms (7-point rating):
   - No change or mild changes
   - Nausea
   - Poor ability to taste or smell

2. ePOS Score
   - Yes

3. Weight
   - Yes

4. POMS Total Score
   - No

5. Want to go to EPT session
   - Yes

**DISTRESS/ANXIETY**

1. Past emotional history rating
   - 5

2. List of causes of distress
   - Dealing with children
   - Depression
   - Eating changes
   - Mouth sores
   - Nausea

3. Want referral for concerns
   - No

4. Mood anxiety
   - Yes
Patient Clinical Management Pathway

(Wall et al, 2016)
VALIDATION
100 patients over 12 months

- Clinically acceptable agreement between ScreenIT and clinician FTF Ax
- In areas of discordance, ScreenIT demonstrated a higher sensitivity to patient-perceived concerns, particularly regarding distress.
- ScreenIT initiated clinically appropriate referrals for high & medium-risk patients for swallowing/nutrition & distress
ScreenIT: Implementation
Cartmill, Wall, Ward et al, in prep

- **1029 occasions of ScreenIT completion in 2016** (667 ScreenIT/ 362 ScreenIT Carer) – 85% completion rate
  - Swallowing/nutrition:
    - Risk breakdown: High n= 317 (47.5%), Moderate n= 83 (12.5%), Low n= 267 (40%)
  - Distress:
    - 37 referrals for urgent Social Work intervention, 127 referrals for distress monitoring
- All patients rated moderate/high risk seen within 4 clinical days as per published safety algorithms
  - Reduced time spent on information gathering
  - Increased patient autonomy/self efficacy
- **23% Speech Pathology/Dietetics appointments safely cancelled** – redistributing patient + clinician time to areas of most clinical need
CONSORT PATIENT FLOW DIAGRAM

NAMBOUR
Referrals N=46

HERVEY BAY
Referrals N=9

ROCKHAMPTON
Referrals N=36

ALLOCATION

Standard Model of Care N=45

Telepractice Model of Care N=46

DISCONTINUED
Consent withdrawn =1
Management incomplete due to FTA = 2
Deceased during management = 1

DISCONTINUED
Consent withdrawn =2
Management incomplete due to FTA = 2
Deceased during management = 1

Analysis N=39

Analysis N=43

Nambour = 21
Hervey Bay = 5
Rockhampton = 19

Nambour = 25
Hervey Bay = 4
Rockhampton = 17

Nambour = 3
Hervey Bay = 1
Rockhampton = 1

Nambour = 19
Hervey Bay = 5
Rockhampton = 17

Nambour = 22
Hervey Bay = 3
Rockhampton = 16
SUMMARY OF RESULTS

Telepractice model more efficient than standard model of care –
• TMOC significantly less number (p=.004) & duration (p=.024) of events than SMOC
• NO referrals in TMOC required appointments at RBWH for SP management

Telepractice model more cost efficient than standard model of care –
• Saving - $100 per referral; 12% cost saving for QHealth
• Equivalent gain of 0.04 in utility for both models of care

Increased referrals to other professionals using telepractice than standard model of care –
• TMOC identified more issues requiring referral (p=<.001) and patients less likely to travel for treatment (p=<.029)

Higher consumer satisfaction with telepractice model
• Resolved issue more efficiently (p=.043) & recommended TMOC service higher (p=.012)

Higher clinician satisfaction with telepractice model
• Resolved clinical issue more effectively (<.001) and efficiently (<.001).
Home-based telehealth service for swallowing and nutritional management following head and neck cancer treatment

Annette Collins¹, Clare L Burns¹,²,³, Elizabeth C Ward²,³,⁴, Tracy Comans¹,⁵, Claire Blake¹, Lizbeth Kenny¹,⁶,⁷, Phil Greenup⁸ and Daniel Best⁸

Home-based service: outpatient reviews with SP and N&D for acute symptom monitoring, nutritional management, and swallowing and communication rehabilitation.

AIM: to determine the feasibility of a home-based telehealth model for delivering SP & ND reviews, to provide patients with more convenient access to appointments.
<table>
<thead>
<tr>
<th>Parameters</th>
<th>No. of patients (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SMOC</td>
</tr>
<tr>
<td></td>
<td><em>n</em> = 15</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>10 (67)</td>
</tr>
<tr>
<td>Female</td>
<td>5 (33)</td>
</tr>
<tr>
<td>T Classification</td>
<td></td>
</tr>
<tr>
<td>T0</td>
<td>0</td>
</tr>
<tr>
<td>T1</td>
<td>2 (13)</td>
</tr>
<tr>
<td>T2</td>
<td>5 (33)</td>
</tr>
<tr>
<td>T3</td>
<td>5 (33)</td>
</tr>
<tr>
<td>T4</td>
<td>3 (20)</td>
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<tr>
<td>N Classification</td>
<td></td>
</tr>
<tr>
<td>N0</td>
<td>5 (33)</td>
</tr>
<tr>
<td>N1</td>
<td>9 (60)</td>
</tr>
<tr>
<td>N3</td>
<td>1 (7)</td>
</tr>
<tr>
<td>Tumour location</td>
<td></td>
</tr>
<tr>
<td>Oral +/- floor of mouth</td>
<td>6 (40)</td>
</tr>
<tr>
<td>Oropharyngeal</td>
<td>5 (33)</td>
</tr>
<tr>
<td>Hypopharyngeal</td>
<td>3 (20)</td>
</tr>
<tr>
<td>Other</td>
<td>1 (7)</td>
</tr>
<tr>
<td>Treatment modality</td>
<td></td>
</tr>
<tr>
<td>Surgery C/Rt</td>
<td>6 (40)</td>
</tr>
<tr>
<td>C/Rt</td>
<td>9 (60)</td>
</tr>
<tr>
<td>Enteral nutrition</td>
<td></td>
</tr>
<tr>
<td>Prophylactic enteral feeding</td>
<td>6 (40)</td>
</tr>
<tr>
<td>Reactive enteral feeding</td>
<td>2 (13)</td>
</tr>
</tbody>
</table>

Note: SMOC = Standard model of care; TMOOC = Telehealth model of care; C/Rt = (chemo)radiotherapy.
Telepractice model more efficient than standard model of care –

- TMOC significantly less number (p=.003) & duration (p=.002) of events than SMOC
- 1 x additional 30 min session per clinic

Telepractice model more cost efficient than standard model of care –

- Average saving – $222 per patient and $58 per patient for health service

High clinician satisfaction with telepractice model

Higher consumer satisfaction with telepractice model

“Nice to stay at home rather than travelling to the hospital all the time
I can relax between the appointments I have to attend”
Queensland Aphasia Rehabilitation Centre

- A dedicated aphasia rehabilitation and research centre to be **co-designed with people with aphasia, their family & clinicians**
- Support development and delivery of comprehensive high dose aphasia treatments – CHAT & Tele-CHAT (NHMRC Partnership Grant application)
- Aphasia tech and social support hub
- Support and resources for clinicians throughout QLD and beyond
- Supporting advocacy and the Australian Aphasia Association

..for more info or to register as an affiliate:
Email: qarc@uq.edu.au
Phone: (07) 3365 7595.
eSALT: enabling Speech and Language Therapy that is effective, electronic and everywhere
Asynchronous telerehabilitation for communication disorders: a program of research

eSALT: enabling Speech and Language Therapy that is effective, electronic and everywhere

Needs analysis

Qualitative study
n = 10 SLPs


Usability studies & end-user co-design

1. Usability study
n = 5 PWA
2. Usability study
n = 3 SLPs


Feasibility study

Effectiveness Trial
N = 11 PWA
N = 4 SLPs

Clinical outcomes
Usage Data
Satisfaction

Other research involving eSALT

- eSALT used for cued-naming therapy in trial in WA
  Dr Angela Cream and Dr Deborah West, Osborne Park Hospital

- eSALT used to design swallowing rehabilitation – ReSwallow
  Dr Clare Burns

- eSALT used to design voice therapy - Clear Voice
  Dr Anna Rumbach
Group Aphasia Intervention and Networking program - Tele-GAIN


- 12 week program: 1.5 hrs/week
- Each session had set topic – e.g., Travel, Living with Aphasia, Hobbies and Interests
- Goals of therapy were to create communication opportunities, share personal life history, provide support

Results:
- Statistically significant improvement across all five domains on Assessment for Living with Aphasia
- Statistically significant reduction in aphasia severity on Comprehensive Aphasia Test overall modality score
- High satisfaction for:
  - delivery of online group therapy
  - improvements in communication gaining of new skills
  - likelihood of recommending the group to others
Tele-Intensive Comprehensive Aphasia Program

Translation of ICAP to Tele-CHAT
Contacts and Resources

• Speech Pathology Australia - https://www.speechpathologyaustralia.org.au/

• Telehealth CRE
  https://cretelehealthcentre.uq.edu.au/

• Aphasia CRE
  https://www.latrobe.edu.au/research/centres/health/aphasia/about

• Queensland Aphasia Rehabilitation Centre
  Email: qarc@uq.edu.au
  Phone: (07) 3365 7595.
Thank you

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