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1. Project Title and Purpose

**Title of Catalyst Grant:** Communication Competence is the Goal. Context is the key. Implementing contextualized assessment and intervention approaches for the inpatient rehabilitation of adults with cognitive-communication impairments post-TBI.

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<table>
<thead>
<tr>
<th>ONF Clinical Practice Guideline Recommendation: K 2.6</th>
<th>Project Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>K 2. Cognitive Communication Rehabilitation</td>
<td>To implement contextualized assessment and intervention approaches for the inpatient rehabilitation of adults with cognitive-communication impairments post-TBI, while simultaneously avoiding over-reliance on standardized tests.</td>
</tr>
</tbody>
</table>

A cognitive communication rehabilitation program for individuals with traumatic brain injury, should provide the opportunity to rehearse communication skills in situations appropriate to the context, in which the person will live, work, study, and socialize.

Level of Evidence: A

2. Project Description

A. Methods

**Pre-Implementation**
- Compared CPG recommendation K 2.6 to other key documents which guide SLP practice in Ontario to identify commonalities/alignment. Documents included:
  - College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO) Practice Standards and Guidelines for the Acquired Cognitive Communication Disorders *Oct 2015*
- Attended interdisciplinary team rounds to assess degree of contextualization across disciplines to inform existing support, culture, infrastructure for implementation of K 2.6.
- Conducted pre-implementation chart audit (see SLP Health Records Chart Audit) in May-June 2017 to serve as a baseline measuring tool. Chart audit was repeated in July 2018.
- Summarized and reviewed findings from key journal articles that informed K 2.6 to better understand recommended practices.
  - HSN – Summary of Key Readings with Evidence for K 2.6

Implementation

1. Educational Materials both existing and locally developed were shared with SLPs during implementation project meetings as well via email to 1) raise SLP/management awareness of evidence-best practice recommendations/practices related to aim of this project and 2) provide how-to examples of contextualized interventions.
   - F-K 2.6 Contextualized Assessment & Treatment Resources & Tools July 2019
   - BIAUSA Webinar with Dr. Jennifer Bogner: Rehabilitation Interventions for TBI: What Works Best for Whom?
   - HSN – References for Implementation K 2.6
   - Ontario Association of Speech-Language Pathologists & Audiologists (OSLA) Cognitive Communication Toolkit

2. Educational outreach/ academic detailing, summaries of evidence:
   - One-to-one consultation between SLPs and NEO ABI Resource Clinician
   - Peer-to-peer consultation among SLPs and interdisciplinary team members
   - NEO ABI Resource Clinician attended some inpatient SLPs’ sessions with patients
   - Shared additional evidence and tools published since release of CPG (i.e. TBI Comparative Effectiveness of Rehabilitation by Jennifer Bogner, Comparative Effectiveness of TBI Inpatient Rehabilitation by PCORI)
   - Created a summary of evidence regarding the need for caution in relying solely on standardized testing of cognitive-communication to assist SLPs

3. Clinical Audit and Feedback
   - Project lead collected data regarding the SLP’s practice using the SLP Health Records Chart Audit. Data was compared to the pre-implementation baseline audit done in July 2017. See findings section for results.

4. Revised the SLP Integrated Summary Intervention Report Template to support context-sensitive cognitive-communication assessment and treatment. Sections to prompt SLPs to document the following were added:
   - Patient/family concerns & goals
   - Consideration of contextual factors impacting communication
   - Qualitative/Non-Standardized Measures Used
   - Impact of cognitive-communication difficulties at activity-level.
B. Data Collection Tools

Tools to measure clinical process
1. SLP Health Records Chart Audit re: Adherence to Recommendations K1.1 and K2.6 of the CPG for the Rehab of Adults with Mod. To Sev. TBI (ONF-INESS 2016) – locally developed

Tools to measure implementation process
1. Contextualized Communication Project Feasibility Survey$^{12}$ – developed by ONF

Tools to measure clinical and implementation outcomes
1. Measurement of Practice Change – Goal Attainment Scale (Clinician Version)$^{13}$ – locally developed
2. Measurement of Practice Change – Goal Attainment Scale (Project Lead Version)$^{14}$ – locally developed
3. Patient Experience Survey$^{12}$ – locally developed

C. Findings (Process and Outcome)

Process: SLP Health Records Chart Audit (Baseline/ Pre and Repeat/ Post Implementation)

<table>
<thead>
<tr>
<th></th>
<th>Baseline (July 2017)</th>
<th>Repeat (July 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive-Communication Assessment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of appropriate standardized tests</td>
<td>25%</td>
<td>94%</td>
</tr>
<tr>
<td>Use of non-standardized assessments &amp; protocols</td>
<td>31%</td>
<td>47%</td>
</tr>
<tr>
<td>Assessment of communication partners’ needs &amp; abilities</td>
<td>13%</td>
<td>19%</td>
</tr>
<tr>
<td>Cognitive-Communication Intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention in a variety of personally relevant settings</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Intervention addressed a variety of communication needs/demands</td>
<td>38%</td>
<td>93%</td>
</tr>
<tr>
<td>Use of objective individual measures (incl. at activity level)</td>
<td>0%</td>
<td>14%</td>
</tr>
<tr>
<td>Communication partner training to staff</td>
<td>0%</td>
<td>14%</td>
</tr>
<tr>
<td>Communication partner training to everyday communication partners</td>
<td>0%</td>
<td>50%</td>
</tr>
</tbody>
</table>
Outcome: Results from Clinician Measurement of Practice Change Using Goal Attainment Scaling

Contextualized vs. Quasi-contextualized vs. Decontextualized Cheat Sheet

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contextualized</td>
<td>Tx incorporates real-life activities that will be done in the home or community (or at work, in social situations) after discharge from inpatient or during or after discharge from outpatient. *could include real-life activities that are relevant to the rehab setting (e.g. independently following therapy schedule, using call bell, managing meds, navigating unfamiliar surroundings, etc…).</td>
</tr>
<tr>
<td>Quasi-contextualized</td>
<td>A functional task that is performed outside of the real environment or without the actual materials (or communication partners) that will be used in the (future) real-life activity. Tx focuses on compensatory strategies that can be used in the future real-life activity.</td>
</tr>
<tr>
<td>Decontextualized</td>
<td>Tx aims to strengthen component skills that underlie real life tasks. The therapy activities themselves are not typically done in real life environments, and tend to be reserved for use in clinic.</td>
</tr>
</tbody>
</table>

Table 3 - Degree of Practice Change re: Contextualized Assessment using Goal Attainment Scaling

<table>
<thead>
<tr>
<th>% in each GAS level</th>
<th>SLP A Pre-Impl</th>
<th>SLP A Post-Impl</th>
<th>SLP B Pre-Impl</th>
<th>SLP B Post-Impl</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>120%</td>
</tr>
<tr>
<td>80%</td>
<td>50%</td>
<td>60%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>60%</td>
<td>30%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td>20%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0%</td>
<td>0%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Change in degree of contextualization across all patients at individual clinician level
### Outcome: Results from Patient Experience Survey

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree – 50%</th>
<th>Agree – 38%</th>
<th>Strongly Disagree – 13%</th>
</tr>
</thead>
<tbody>
<tr>
<td>My Speech Therapist understood and focused on what mattered most to me for my rehab and my life? (e.g. my rehab and life goals, what I most wanted help with in order to get back to my life....)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My Speech Therapist asked about my typical daily communication demands/needs when they looked at my communication abilities? (e.g. in the hospital, at home/with family, at work/volunteering, at school, in the community)</td>
<td>Strongly Agree - 63%</td>
<td>Agree – 25%</td>
<td>Don’t know or N/A – 13%</td>
</tr>
<tr>
<td>My Speech Therapist observed me in situations, tasks, activities that are relevant to my life to help understand my communication strengths and challenges.</td>
<td>Strongly Agree – 38%</td>
<td>Agree – 13%</td>
<td>Disagree – 38%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Don’t know or N/A – 13%</td>
</tr>
<tr>
<td>I feel that I had the opportunity to try out different strategies with my Speech Therapist to help figure out what helped make communication easier for me in a variety of real-life activities and situations even though I was in the hospital.</td>
<td>Strongly Agree – 38%</td>
<td>Agree – 13%</td>
<td>Disagree – 13%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Don’t know or N/A – 25%</td>
</tr>
</tbody>
</table>

### Implementation Process: Results from Contextualized Communication Project Feasibility Survey

Table 8 - Results of Feasibility Survey

<table>
<thead>
<tr>
<th>Category</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptability</td>
<td>2.5</td>
</tr>
<tr>
<td>Demand</td>
<td>2.3</td>
</tr>
<tr>
<td>Implementation</td>
<td>1.9</td>
</tr>
<tr>
<td>Practicality</td>
<td>2</td>
</tr>
<tr>
<td>Integration</td>
<td>2</td>
</tr>
<tr>
<td>Limited Efficacy</td>
<td>2</td>
</tr>
</tbody>
</table>

Overall Feasibility Score is 1.8

Average Rating
D. Summary

- Pre and post-implementation chart audit data demonstrated that inpatient SLPs made important practice changes to evolve to a more contextualized approach to assessment of cognitive communication and the rehabilitation of adults with cognitive communication disorders post-TBI.
- Most notably, following implementation SLPs did not over-rely on standardized testing to determine the presence, nature, and severity of cognitive-communication impairment. This was demonstrated by increased use of non-standardized measures to complement standardized testing and more careful selection of standardized tests with a focus on function and ecological validity.
- The goal of moving to a more contextualized assessment was a necessary precursor to establishing contextualized cognitive-communication treatment plans that provided patients the opportunity to rehearse their communication skills in situations appropriate to the context in which the patient with TBI lives, works, studies, or socializes.
- Significant change was noted in the degree of contextualization in the SLPs’ treatment approaches. Specifically, treatment focused on addressing a variety of personally relevant communication needs and demands (activity-level goals) versus the previous practice of primarily focusing on impairment level goals. This improved from 38% to 93%.
- Despite expected variation from patient to patient as well as from clinician to clinician, degree of contextualization increased for all patients assessed and treated during the implementation project.
- The feasibility survey demonstrated ratings ranging from moderately agree to strongly agree for acceptability, demand, implementation, integration, and limited efficacy. Raters only mildly agreed with the practicality of the implementation process.

E. Lessons Learned

1. It is important not to under-estimate individual clinician resistance to changing clinical practice and the difficult time clinicians can have with “unlearning” outdated/low/no-value/non-evidence-based practices. Project leads/implementation teams should be prepared to address the following:
   - Clinician cognitive biases
   - Change that requires an addition is generally perceived as much easier than a change that requires the cessation of a current practice.
   - Consider developing a clear plan and methods to support de-implementation/ unlearning
2. It is necessary to foster a professional and organizational culture that understands the constantly changing nature of clinical practices and innovations, while also holding staff accountable for being able to evolve clinical practice in support of improved clinical outcomes.
3. This work would not have been possible without the NEO ABI Resource Clinician. This is a dedicated role at HSN whose key function is to provide advanced clinical practice guidance and consultation for the care, management, and rehabilitation of adult patients with ABI across the Continuum of Care (CoC) at HSN and across the region.
4. Given the disequilibrium that occurs with clinical practice change and the snowball effect of one change leading to multiple other necessary changes, a variety of strategies and methods are required to meet the aims of the project.
3. Recommendations for Next Steps to Support Full Sustainable Implementation

1. **Prioritize changes to avoid change saturation.**
2. **Integrate changes into organization, departmental memory, and knowledge reservoirs.**
   Consider developing standard work documents, policies and procedures, new staff orientation resources, documentation systems/ templates etc.
3. **Clinical practice change should be the norm.**
4. **Build accountability for implementation of best practices across levels** (i.e. performance reviews) and tie recognition and reward to implementation of best practices.

4. What Can be Done to Ensure Sustainability

1. Revise documentation to prompt/support contextualized approach to cognitive-communication assessment and treatment.
2. Ongoing consultation, mentoring, and training available to new and current SLPs from NEO ABI Resource Clinician regarding practices and techniques to support context-sensitive intervention across disciplines.
3. Promote implementation of contextualized assessment and treatment approach across disciplines on the inpatient ABI team to foster joint accountability.
4. Repeat chart audits
5. Continue to update inventory of resources & tools.
6. Consider creating a Standard of Work for inpatient SLP

5. Summary of Resources

1. College of Audiologists and Speech-Language Pathologists of Ontario (CASLPO) Practice Standards and Guidelines for the Acquired Cognitive Communication Disorders *Oct 2015*
2. HSN – Summary of Key Readings with Evidence for K 2.6
3. F-K 2.6 Contextualized Assessment & Treatment Resources & Tools July 2019
5. References for Implementation K 2.6
7. The TBI Comparative Effectiveness of Rehabilitation Study by Jennifer Bogner
8. Comparative Effectiveness of TBI Inpatient Rehabilitation by PCORI
10. SLP Health Records Chart Audit re: Adherence to Recommendations K1.1 and K2.6 of the CPG for the Rehab of Adults with Mod-to-Sev. TBI (ONF-INESS 2016)
11 SLP Integrated Summary Intervention Report Template

12 Contextualized Communication Project Feasibility Survey

13 Measurement of Practice Change – Goal Attainment Scale (Clinical Version)

14 Measurement of Practice Change – Goal Attainment Scale (Project Lead Version)

12 Patient Experience Survey