

### Appendix 3.

Study: Factors influencing allied health professionals' implementation of upper limb sensory rehabilitation for stroke survivors: A qualitative study to inform knowledge translation

#### Normalisation Process Theory (NPT) Codebook

| Construct 1: COHERENCE "Making sense of it"  |   |  |   |
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| Coherence is the sense-making work that people do individually & collectively when faced with the problem of operationalizing some set of practices.<br><i>What knowledge, skills, behaviours, actors and actions are required to implement SENSE?</i> |   |  |   |
| Component  | Definition  | Guidance   | Sample quotes   |
| <b>Differentiation</b><br><br><u>Understanding the uniqueness of it</u><br><i>Does the therapist recognize the SENSE approach as different from their existing ways of working?</i>  | How a set of practices and their objects are different from each other      | <u>Appropriate coding</u> to this construct component: <ul style="list-style-type: none"> <li>Understanding the differences between informal and standardised sensory Axs</li> <li>Understanding the differences between other and past sensory rehabilitation approaches and SENSE therapy</li> </ul> <u>Inappropriate coding:</u> views on effectiveness of SENSE (code to communal specification) | <i>"I do assess sensation and I do treat sensation but I don't actually use any of those <b>formalised things</b>" (Site 3_P5)</i><br><br><i>"it's all about <b>compensating</b> for something and educating a patient or their family rather than actually taking the time to retrain" (Site 1_P7)</i>   |
| <b>Individual specification</b><br><br><u>Individually interpreting it:</u><br><i>Does the therapist identify their personal role and responsibilities with using SENSE?</i>   | Understanding specific tasks and responsibilities around a set of practices | <u>Appropriate coding</u> to this construct component: <ul style="list-style-type: none"> <li>Individual tasks a therapist needs to do to understand and start using SENSE Assess and SENSE therapy</li> </ul>   | <i>"it's helpful having that structure as well of the study...there's some ownership you have to take, the responsibility you have to take to <b>actually use the assessments</b>" (Site 7_P10)</i><br><br><i>"I think the hard thing for me is because I did go to a SENSE workshop, I know that there is so much more that could be done and with us not having the equipment, <b>it's a matter perhaps making do with the principles</b> but you...but like just knowing that's there's so much more that could be done" (Site 4_P2)</i> |
| <b>Communal specification</b><br><br><u>Collectively interpreting</u>  | Building a shared understanding   | <u>Appropriate coding</u> to this construct component: <ul style="list-style-type: none"> <li>The development of a group or department</li> </ul>  | <i>"I suppose, you know, if it (SENSE therapy) <b>needs a lot of kind of one-on-one focus</b>, that might be a problem."</i> (Site 4_P1)<br><br><i>"It feels more old-fashioned not to empower them to go away</i>  |

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| <p><i>it:</i><br/>Does the therapist recognise the steps needed to assist in the integration of SENSE?</p>   | <p>of aims, objectives, and expected benefits of a set of practices.</p>      | <p>understanding of SENSE Assess and SENSE therapy</p> <ul style="list-style-type: none"> <li>A group trying to identify and anticipate how SENSE Assess and SENSE therapy will fit with current practice</li> </ul> | <p>and train the carer to do the program with a client, we don't do a lot of stuff to people..." (Site 3_P1)</p> <p>"also with the intensity with which we provide therapy, I feel like we, it's so much less than what is in the SENSE study and even though I am aware of it, and I just can't imagine how I can give that intensity to a client" (Site 7_P8)</p>   |
| <p><b>Internalization</b></p> <p><u>Coming to a conclusion:</u><br/>Does the therapist identify any benefit in adopting the SENSE approach?</p>  | <p>Understanding the value, benefits and importance of a set of practices</p> | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>Understanding the value, benefits and importance of SENSE Assess and SENSE therapy</li> </ul>                          | <p>"I guess the impression is that the <b>treatment approach works</b> so that is what I'm basing my enthusiasm on that it is actually going to improve people's sensation and translate into their function" (Site 2_P3)</p> <p>"well we also have a lot of people here...there's a sense that (laughs) well, there's a sense the SENSE is valuable" (Site 7_P8)</p> <p>"because the loss of sensation does have such huge impact on people's function and I think to be able to implement something that is going to make a huge difference for patients is really exciting, regardless of how that is actually put in place" (Site 4_P2)</p> <p>"but also at the back of my mind going, how long do all of these assessments take and ....<b>would they actually assess everything that I need to know for my patients.</b>" (Site 7_P7)</p> |
| <p><b>Construct 2: COGNITIVE PARTICIPATION</b> 'Enrolment and <b>engagement</b> of individuals and groups' "Working out participation"</p>   |   |  |   |
| <p><b>Cognitive Participation</b> is the <b>relational work</b> that people do to build and sustain a community of practice around a new technology or complex intervention. <b>Do participants view the intervention as something worthwhile and appropriate to commit their individual time and effort [signing up] to bring about the intended outcome?</b></p> |   |  |   |
| <p>Component</p>   | <p>Definition</p>   | <p>Guidance</p>  | <p>Sample quotes</p>  |
| <p><b>Initiation</b></p> <p><u>Having the skills to engage</u><br/>To what extent does the therapist appear to be a supporter of the</p>   | <p>Whether or not users are working to drive an intervention forward</p>      | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>The work done to setup systems and procedures to allow the use of SENSE Assess and SENSE therapy</li> </ul>            | <p>"we're getting training...we're getting kits.. we're getting the assessment tools and..we all would know about it I think helps me to feel more able to do something a lot more formally and a lot more structured way" (Site 7_P7)</p> <p>"And...if we did need to see our client more than what our usual</p>  |

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| <p><i>process to integrate SENSE?</i></p>   |   | <ul style="list-style-type: none"> <li>▪ The engagement with others to introduce SENSE</li> </ul>  | <p><i>is, which is once a week, then that would be agreed, if we could justify it" (Site 3_P3)</i></p>  |
| <p><b>Enrolment</b><br/><u>Organising people</u><br/><i>Has the therapist made any adaptations or assisted in the reorganisation process leading to implementation?</i></p>   | <p>The work users do to organise themselves and their co-workers to participate in the new practice.</p>                      | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>▪ Therapists 'buy-in' towards SENSE</li> <li>▪ The building of communal engagement towards SENSE</li> </ul>  | <p><i>"I would like us to be known as a centre of excellence and to be able to provide it (SENSe)" (Site 5_P1)</i></p> <p><i>"Maybe we can co-treat together" (Site 7_P8)</i></p>   |
| <p><b>Legitimation</b><br/><u>Believing practice is valid</u><br/><i>Does the therapist believe that it is appropriate for them to be involved in integrating SENSE?</i></p>  | <p>Users' belief that the practice is right for them in their context, and that they can make a valid contribution to it.</p> | <p><u>Appropriate coding</u> to this construct component:</p> <ul style="list-style-type: none"> <li>▪ The role of OT/PT in sensory rehabilitation</li> <li>▪ The contribution therapists feel they can make</li> </ul> <p><u>Inappropriate coding</u> to this domain:</p> <ul style="list-style-type: none"> <li>▪ Who does the work (code to Skill set workability)</li> </ul> | <p><i>"For me it's more about the scale of prioritisation... is it [SENSe] what they should be doing out amongst all of all their other priorities?" (Site 7_P2)</i></p> <p><i>"in terms of the other disciplines, they look to us (OT) as an expert in this area, and there's a very uncomfortable feeling" (Site 8_P7)</i></p>                                    |
| <p><b>Activation</b><br/><u>Defining actions</u><br/><i>Has the therapist taken steps to sustain the use of SENSE?</i></p>  | <p>Collectively defining the actions and procedures needed to sustain a practice and to stay involved.</p>                    | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>▪ The sustainability of SENSE</li> <li>▪ The visibility of SENSE in the organisation</li> <li>▪ The ongoing connection between SENSE and those who should use it</li> </ul>  | <p><i>"I just feel a bit unsure how it's going to be carried out, and if it's... sustainable across the service." (Site 7_P3)</i></p> <p><i>"Handing that over to the AHA might not meet the criteria of the study, so I think.... once we have done the study, we might be able to think about using our AHAs a bit more effectively for that" (Site 7_P8)</i></p> |
| <p><b>Construct 3: COLLECTIVE ACTION 'Work done to enable the intervention to happen'</b></p>   |   |  |   |
| <p><b>Collective Action</b> is the <b>operational work</b> that people do to enact a set of practices, whether these represent a new technology or complex healthcare intervention. <i>How far will existing work practices and the division of labour have to be changed or adapted to implement SENSE? Is SENSE consistent with the existing norms and goals of the groups, the workplace and overall organization?</i></p> <p><b>** Coding to this construct needs to involve a therapist talking about 'doing' or intended 'doing' related to using SENSE</b></p> |   |  |   |

| Component   | Definition  | Guidance   | Sample quotes  |
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| <p><b>Interactional workability</b></p> <p><i>Performing the actions</i><br/>What work does the therapist do with others to operationalise the use of the SENSE approach?</p>                                 | <p>Interactional work people do to operationalize the practice in everyday settings</p>   | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>Interaction between therapists in the use of SENSE and SENSE equipment to put them into use</li> </ul> <p><u>Inappropriate coding</u> to this domain:</p> <ul style="list-style-type: none"> <li>Division of labour related to use of SENSE (code to Skill set Workability)</li> </ul> | <p><i>“that might be the benefit of this study that it...encourages co-assessments and co-treatments so that we’re both (OT &amp; PT) learning together really, which I think gives us benefit.” (Site 6_P3)</i></p> <p><i>“so I guess looking at across OT and physio how you can work together to try and implement the amount that you would need to, to change” (Site 3_P3)</i></p>  |
| <p><b>Relational integration</b></p> <p><i>Working with and trusting the work of others (and SENSE as an intervention)</i><br/>To what extent does the integration of SENSE help or impede people’s work?</p> | <p>Knowledge work people do to build accountability and maintain confidence in a set of practices and in each other as they use them.</p> | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>The confidence therapists have in SENSE and its ability to detect and treat sensory loss in stroke survivors</li> </ul>  | <p><i>“we would actually articulate and educate your patients well to try and do the [SENSe] principles, I hope then then yes, and the outcomes will be better” (Site 7_P9)</i></p>  |
| <p><b>Contextual integration</b></p> <p><i>Allocating resources</i><br/>Does the integration of SENSE fit with the objectives of the organisation/ individual?</p>  | <p>Managing a set of practices through allocation of resources, execution of protocols, policies and procedures.</p>                      | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>The management of the health service (staff, resources) to allow for delivery of SENSE</li> </ul>  | <p><i>“you’re not going to spend a lot of time assessing someone if you can’t actually treat them...that would probably lead to someone thinking I’ll let that go for home-based therapy or outpatient therapy” (Site 3_P2)</i></p> <p><i>“we have grade one rotations and OTs who rotate every 6 months...obviously someone else who is going on maternity leave...if we have new people coming in that means we have to train them as well so that they can use the equipment so I guess can be a bit difficult” (Site 8_P6)</i></p> |
| <p><b>Skill set workability</b></p>   | <p>The allocation work that underpins the</p>   | <p>Appropriate coding to this construct</p>  | <p><i>“if it’s an assessment [SENSe] that both can do...if the physio is</i></p>   |

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| <p><u>Appropriate division of tasks</u><br/>Who does the therapist view as being best placed to make use of the SENSE approach?</p> <p>How compatible is the SENSE approach with their current tasks?</p>  | <p>division of labour that is built up around a set of practices</p>   | <p>component:</p> <ul style="list-style-type: none"> <li>Who does the work related to the use of SENSE?</li> </ul> <p>*Related to Legitimation – see point on difference above</p>  | <p>too busy the OT can help out or vice versa. We can all help with the time management side of things” (Site 4_P1)</p> <p>“I’ll communicate with the OT and I would probably have a list of other priorities this big and I’ll go “Great! The OT can do this, one less thing for me to worry about!” (Site 4_P1)</p>                 |
| <p><b>REFLEXIVE MONITORING</b> ‘formal and informal appraisal of benefits and costs of the intervention’</p>   |  |   |   |
| <p><b>Reflexive Monitoring</b> is the <b>appraisal work</b> that people do to assess and understand the ways that a new set of practices affect them and others around them. <i>What is the informal and formal appraisal of SENSE and its benefits for participants?</i></p> <p><b>** Coding to this construct needs to involve a therapist reflecting on the ‘doing’/ use of SENSE</b></p> |  |   |   |
| <p>Component</p>   | <p>Definition</p>  | <p>Guidance</p>   | <p>Sample quotes</p>  |
| <p><b>Systematization</b></p> <p><u>Collecting feedback information</u><br/>Has the therapist taken practical steps to measure the influence of adopting the new techniques?</p>   | <p>Collecting information to determine the effectiveness and utility of an intervention</p>                              | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>Formal (e.g. RCT) or informal (anecdotal) sources of information on how effective &amp; useful SENSE is</li> </ul> <p>From discussion with AM: e.g. audit</p> | <p>“in my limited experience and treatment that I’ve used some of the SENSE practices with, <b>I’ve had really significant outcomes</b> so I’m keen to apply it more broadly I guess across the board rather than just the ones that are really severe...sensory issues and see what sort of outcomes we might have.” (Site 3_P2)</p> |
| <p><b>Communal appraisal</b></p> <p><u>Collectively evaluating it</u><br/>Are there any joint efforts to appraise the impact of implementation?</p>  | <p>Participants working together to evaluate the worth of a set of practices.</p>  | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>Therapists asking each other ‘Is SENSE working?’</li> <li>Communal appraisal of SENSE</li> </ul>  | <p>* Likely to be more relevant at end of implementation</p>  |
| <p><b>Individual appraisal</b></p> <p><u>Individually evaluating it</u></p>  | <p>Participants working experientially as individuals to appraise the practice’s effects on them and the contexts in</p> | <p>Appropriate coding to this construct component:</p> <ul style="list-style-type: none"> <li>Therapists individual appraisal of</li> </ul>   | <p>* Likely to be more relevant at end of implementation</p>  |

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| Does the therapist reflect personally on the impact of the SENSE approach on his/her routine?   | which they are set.   | the worth of SENSE and the impact on other work tasks  |   |
| <b>Reconfiguration</b><br>Changing the way things are done<br>Has the therapist made attempts to modify the way the SENSE approach is used as a result of experience? | Appraisal work done by users to redefine procedures or modify practices | Appropriate coding to this construct component:<br>▪ Changes to the delivery of SENSE therapists make to allow it to fit with practice | * Likely to be more relevant at end of implementation |

Structure and definitions in codebook guided by:

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