

Changing the Lens – A Neuro-sequential Model Approach to understanding trauma in Forensic Intellectual Disability Services.

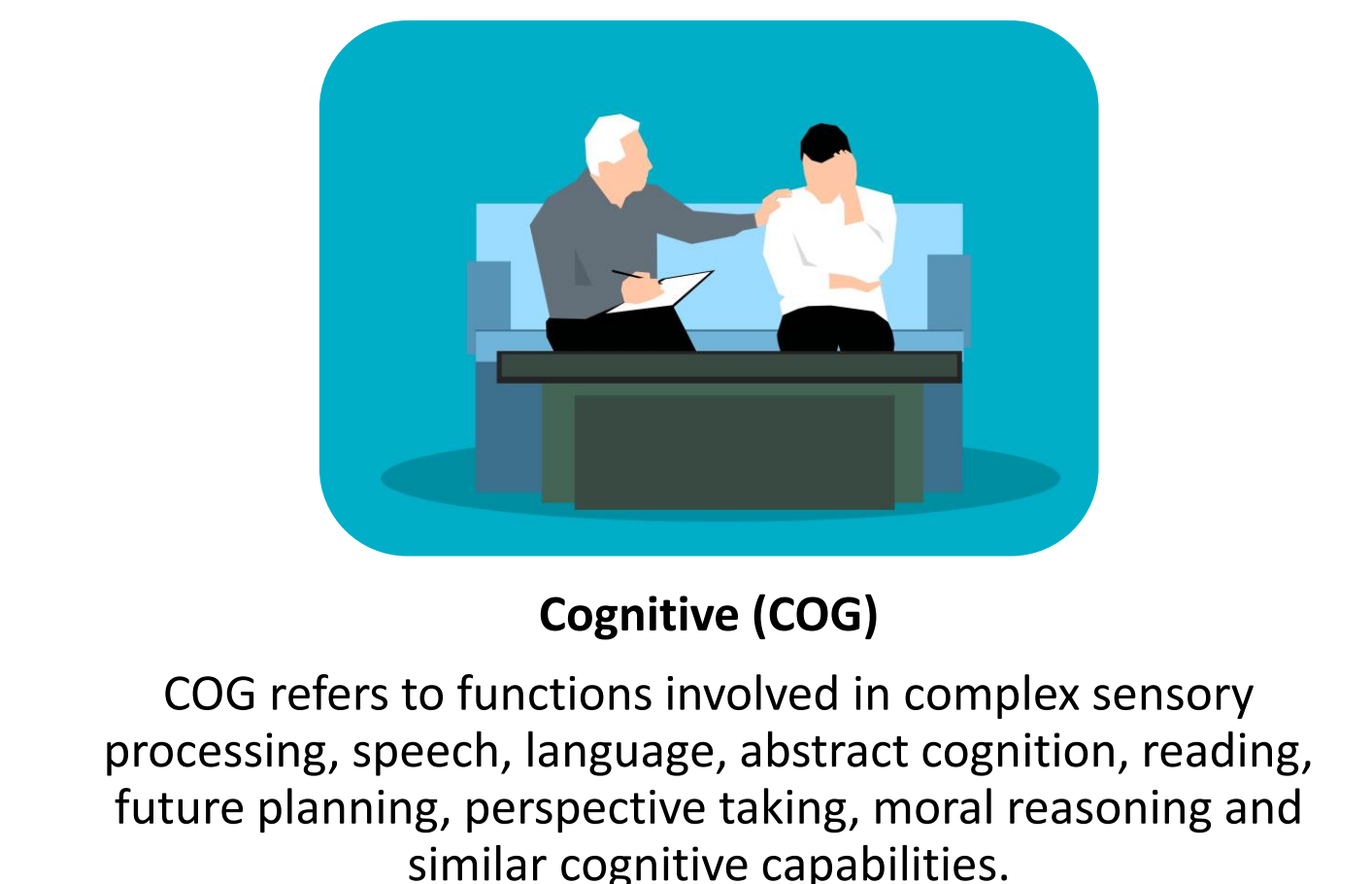
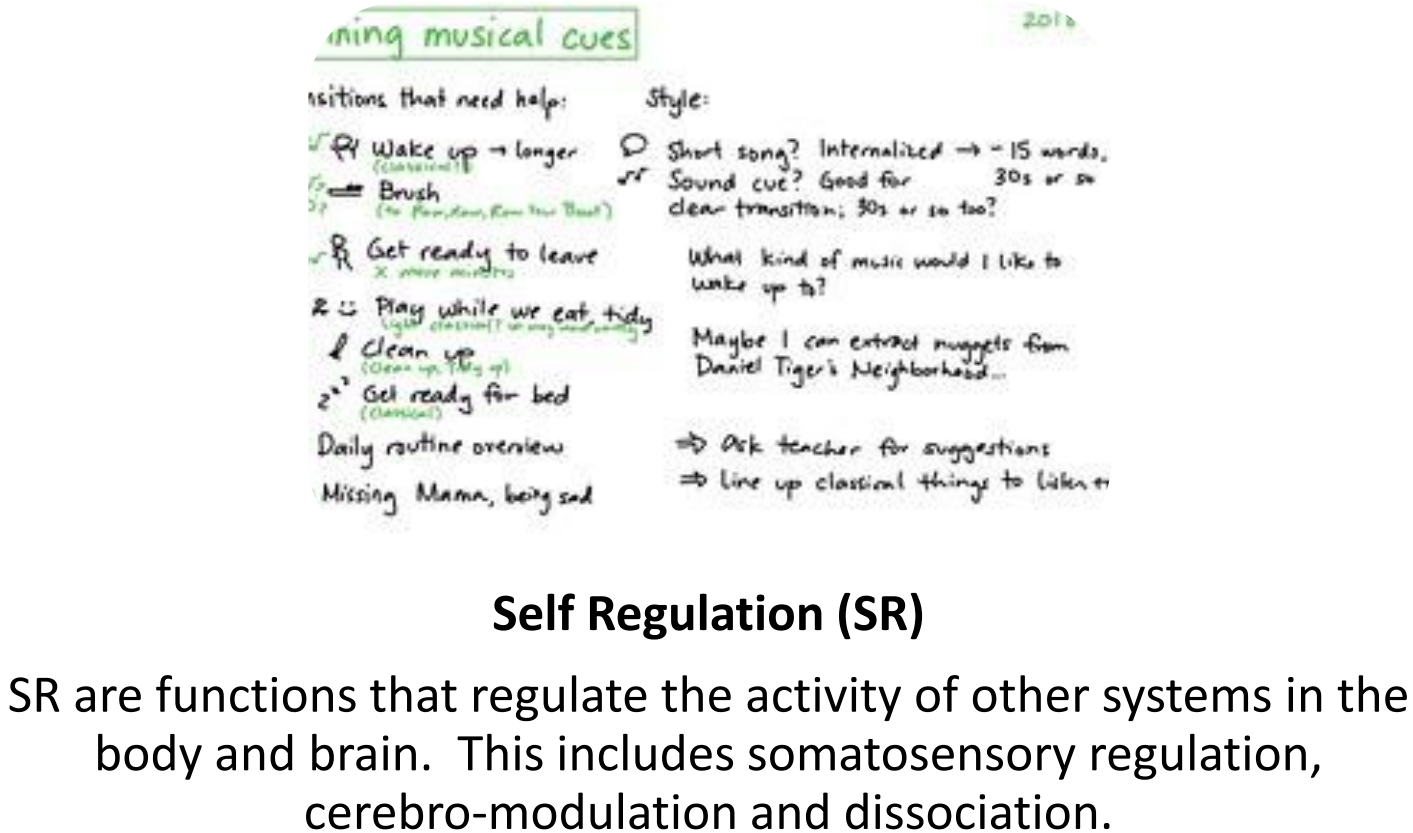
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Introduction to the Neuro-sequential Model (NMT)

The Neuro-sequential Model of Therapeutics (NMT, Perry, 2009) posits that the brain is use dependent and develops sequentially from the bottom up. It places greater emphasis as a result on the specific neurological impact associated with genetic, epigenetic and developmental timing of Adverse Childhood Experiences (ACE) rather than occurrence alone. This is balanced with evaluation of relational health as a measure of resilience and can be combined to understand the developmental risk of an individual across critical periods. What is particularly helpful with NMT is its ability to simplify the brain using heuristics and metrics that directly map onto which part of the brain will most likely have been impacted as a result of when a trauma occurred. Once this has been identified therapeutic interventions can be targeted across four main areas (diagram 1) that approximate onto key parts of the brain; Sensory integration which links to brain stem development, Self regulation linked to cerebellum, Relational linked to the limbic and Cognitive to the cortex. NMT suggests that many of the ongoing difficulties experienced and presented by individuals with developmental trauma such as behaviours of distress can be remedied by identifying and working with someone at their developmental not chronological age. The model specifies a sequence of engagement to support interactions and bases this on the concept that functioning is state dependent. As such the priority is to regulate first (only after the carer has regulated themselves), relate and connect and only then look at reasoning, and learning new ways.

Diagram 1: Four domains of functioning



Relevance to High Secure Forensic ID services

Individuals with an Intellectual Disability (ID) are more likely to experience traumatic and negative life events than those without. As a group they are vulnerable to systemic abuse and enduring neglect; this is particularly prevalent in children with ID. Recent literature has placed greater emphasis on the timing of trauma with specific focus on intrauterine and perinatal periods. This is based on the idea that experiencing trauma at a point when the brain is most rapidly developing may impede or permanently alter brain development. This has implications for adulthood across a range of domains including attachment, affect regulation, physiology, behavioural control and cognition. Prevalence studies within the High Secure ID service have identified a high level of adverse experiences (figure 1) amongst the population.

Figure 1: Trauma prevalence National High Secure Men's ID

	2010	2020
Physical Trauma	75%	82%
Sexual Trauma	50%	80%
Emotional/psychological trauma		86%
Multiple trauma	43%	98%
Overall Prevalence	95%	98%

What is less clear is the timing of these and in turn neurodevelopmental impact. Identifying this is critical in understanding individuals with ID and how they can be supported within forensic settings more effectively. Underpinning this is a need to work towards a neuro-developmental trauma informed care approach.

Implementing the Neurosequential Model

Although there is clear utility in the model for ID populations it requires a cultural shift. Implementing such shifts within organisations is a well researched field, which has identified that ownership (Scott, Mannion, Davies and Marshal 2003), perceived value of change based on experienced benefit's (Marsac, et al 2016) and agency (May, 2013) improve lasting change. It has been suggested that change within healthcare settings requires multiple approaches at multiple points for successful alignment and implementation of new paradigms (Bokhour, et al 2018). With this in mind a multi tiered, four staged approach has been developed to scaffold the implementation of the NMT approach within the NHS LDS (diagram 2).

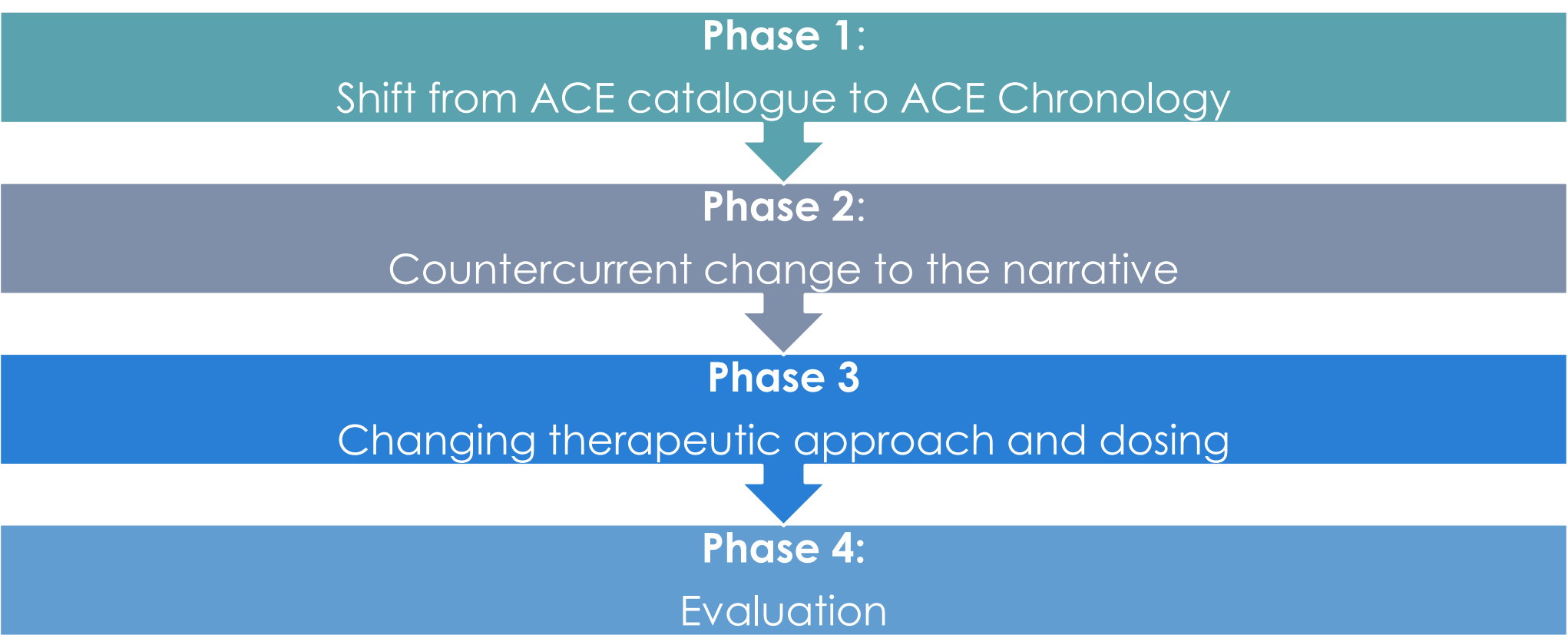
Phase 1: This phase will begin to look at adapting the current psychological assessment process to evolve from ACE catalogue to ACE chronology for each service user. This will support the development of the NMT metrics and allow formulations to understand the impact of trauma on neuro development. This will also involve assessing current levels of cognitive, adaptive and relational health.

Phase 2: This phase extends phase one and focuses on building a sense of ownership, value and agency in the current workforce. This is through forms of psychoeducation in the NMT model for multidisciplinary teams, identifying NMT informed ward champions from the Nursing team and reflective practices on the practical applications of the model. This will be underpinned by a countercurrent approach to changing narrative with formal and informal introduction of NMT principles/concepts to emulate and model the approach of therapeutic dosing and sequence of engagement.

Phase 3: Once phase one and two are near completion direct therapeutic change will be implemented in phase three. This will involve shifting focus from intermittent, individualized cortex focussed therapeutic sessions to more somatosensory, regulation and relational based. This will include higher frequency of therapeutic interaction to promote the "regulation" and "relation" aspects of the NMT framework. Operationally, this is underpinned by increased understanding of therapeutic dosing and a shift in focus to increased somatosensory work involving rhythmic based regulation techniques. Once improvements are seen within NMT metrics individuals are theorized to be more able to use upper cortical skills to attend to more adapted manualized therapies.

Phase 4: Once embedded the process will be evaluated at intervals to assess the immediate and long-term impact on restrictive practices, quality of life, cognitive improvement, length of stay and re-referrals at 6 month, 12, and 48 months post implementation. This will take the form of reassessment of NMT metrics, trauma symptomology, cognitive, adaptive and relational health and risk related behaviour.

Diagram 2: Four stages approach to NMT implementation



Clinical implications and Future Directions

The NMT framework provides a useful and measurable approach to neurodevelopmental trauma informed care. There remains limited research into its application within forensic Neurodiverse populations, despite its recommendation as a trauma informed and person-centered approach. From clinical experience it has face validity and warrants exploration through a piloted approach. It is only in the initial phases of implementation however it is hoped that it can help to develop a structured approach for cultural and therapeutic shift in working in a highly traumatised complex population. Expected outcomes would be improvement in quality of life, reduction in restrictive practice, increased compassionate understanding and more effective use of limited care resources.

References :
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