

## LOCCATE SUMMARY FORM

### Levels of Consciousness Calibration of Assessment Tools Evaluations

A Tool to identify the diagnostic spectrum profile of the Motor and Communicative responses for the Individual with Prolonged Disorder of Consciousness derived from Standardised PDOC Assessment

Name	
Unit	
Hospital Number	
Date of Admission	
Date of Discharge	
<p><b>LOCCATE</b></p> <p>LOCCATE is a calibration tool which provides categorised criterion describing key behaviours seen in the individual in PDOC, from Coma, VS, MCS-, MCS+ to MCS+ Emergence, for both motor and communicative responses derived from Standardised neurobehavioural assessment tools (SNBATs). <b>Table 1</b> illustrates that there are 8 LOCCATE Criterion, ranging from Criterion 1 (No Response for Coma) to Criterion 8 (MCS Emergence).</p> <p>LOCCATE identifies both the individuals' highest criterion and reproducibility of responses from a range of 3 options:</p> <p>A - Seldom but reproducible; Occurs 2-4 sessions only</p> <p>B - Often: Occurs in 5 sessions or more but not consecutively</p> <p>C- Always - Occurs in at least 5 sessions consecutively</p> <p>LOCCATE has a 27-point calibration LOCCATE score, as illustrated on <b>Table 2</b>, for both Motor and Communication responses. These can be derived from a series of administrations of any of the selected (SNBAT) in a given time frame and can also be used to position the individual in the lower, mid or upper spectrum for each diagnostic category. The diagnosis is referred to as "LOCCATE Criterion and Inferred diagnosis" on the assumption that it will be reviewed alongside other evidence by the expert PDOC physician, to reach the final diagnosis.</p> <p>LOCCATE enables the assessors to communicate the meaning and frequency of the individual's responses rather than providing a broad ranging diagnostic label, to the multidisciplinary team (MDT), family and other stakeholders. This individualised specific information supports both clinical and best interest's decision making and facilitates a greater understanding of clinical research outcomes from different assessment tool.</p> <p>The assessor and team can complete the LOCCATE summary form to summarise the findings and may also elect to use the LOCCATE trajectory chart and/or the LOCCATE graph to provide a visual overview of the results.</p>	

LOCCATE criterion	Inferred diagnosis	Criteria	Motor function/functional motor	Functional communication
8	MCS Emergent	Meets the RCP guidelines for emergence from MCS by demonstrating the required number of correct responses with one or more of the following: choice-making/matched pairs/functional use of an object or answering biographical or situational questions on two consecutive occasions.	<p><b>Motor function</b></p> <p>Choice-making/matches and meets the RCP criteria for emergence.</p> <p><b>Functional Motor</b></p> <p>Uses functional objects, for example, a pen, meeting the RCP criteria.</p>	<p>Uses gesture or other methods of output (see output options) to make needs known.</p> <p>Makes choices or indicates “Yes/No” (see output options). Answers questions to situational and/or autobiographical questions, meeting the RCP criteria.</p>
7	MCS+ Upper	<p>Demonstrates one of the following: choice-making/matched pairs/functional use of an object.</p> <p>Demonstrates “Yes/No” but does not meet the RCP criteria. (Asking the client to ...)</p>	<p><b>Motor function</b></p> <p>Choice-making/matches but does not meet RCP criteria for emergence.</p> <p><b>Functional Motor</b></p> <p>Use of object, for example, a pen, but does not meet the RCP criteria.</p>	<p>Uses gestures or other methods of output (see output options) to make needs known.</p> <p>Makes choices or indicates “Yes/No” (see output options). Answers questions to situational and/or autobiographical questions but does not meet the RCP criteria.</p>
6	MCS+ Mid	Follows visual, verbal instruction, tactile cues or discriminates. (Telling the client to ...)	Follows instruction/cue or discriminates.	Demonstrates “Yes” and/or “No” but cannot functionally answer questions when asked.
5	MCS+ Lower	Responds appropriately directly to the type of stimulus, interacting with stimuli, not to verbal, written instruction or cues.	<p><b>Motor function</b></p> <p>Cause-and-effect, copying.</p> <p>Presses the auditory feedback switch/iPad but does not follow direct instruction.</p> <p><b>Functional motor</b></p> <p>Completes simple functional tasks without instruction, for example, removes sock, adjusts hat, removes glasses but not to instruction.</p>	Copies facial expression, gestures, words <b>OR</b> uses automatic speech to finish phrase <b>OR</b> verbally responds appropriately to stimuli, for example, “Go away” in response to having an injection.
4	MCS–	<p>Localises to stimuli or meaningful spontaneous responses.</p> <p><b>OR</b></p> <p>Communicative responses to specific stimuli but not to instruction/cue/prompt.</p>	<p><b>Motor function</b></p> <ul style="list-style-type: none"> <li>➤ Localises, visual fixation, pursuit;</li> <li>➤ Body part towards stimulus;</li> <li>➤ For example, meaningfully and spontaneously brushes hair out of eyes (often repetitive).</li> </ul> <p><b>Functional motor</b></p> <ul style="list-style-type: none"> <li>➤ Active movement within guided activity felt with facilitation;</li> <li>➤ Unable to complete any aspect of task;</li> <li>➤ Unable to initiate task;</li> <li>➤ Manipulates form.</li> </ul>	<p>Communicative facial expression or meaningful vocalisation in context or to specific technique or stimuli.</p> <p>Intelligible verbalisation. Lacks meaning or not in context.</p>
3	Coma or VS	Reflexive withdrawal responses to stimuli.	Withdrawal.	Reflexive non-meaningful facial expression, non-meaningful vocalisation to stimuli, and so on.
2		Reflexive.	Reflexive.	Reflexive non-meaningful facial expression.
1		No response.	No response.	No response.

Table 2 LOCCATE Calibration Score			
LOCATE Inferred Diagnosis	Inferred Diagnostic Spectrum	LOCCATE Criterion and Reproducibility	LOCCATE Calibration Score LCS
MCS Emergent		8	27
MCS	MCS + Upper	7C	26
		7B	25
		7A	24
	MCS + Mid	6C	23
		6B	22
		6A	21
	MCS + Lower	5C	20
		5B	19
		5A	18
	MCS-	4C	17
4B		16	
4A		15	
VS	VS Upper	3C	14
		3B	13
		3A	12
	VS Mid	2C	11
		2B	10
		2A	9
VS Lower	1 VS	8	
COMA	COMA Upper	3C	7
		3B	6
		3A	5
	COMA Mid	2C	4
		2B	3
		2A	2
	COMA Lower	1 COMA	1

**LOCCATE Summary Form No:**

Standardised neurobehavioural assessment tools (SNBATs) results								LOCCATE			
No:	Assessment Tool	No of Assessments	Assessor Name/ Profession /Unit	Standardised neurobehavioural assessment tools (SNBATs) Date Range	SNBAT Score and Diagnosis (where applicable)	Motor/ FC	Highest Responses/ Frequency Description	LOCCATE Criterion, Reproducibility and Inferred Diagnosis	LOCCATE Calibration Score and Value LCS Per M and FC	Highest LCS	Overall Highest Criterion and reproducibility
									:		
									:		
									:		
									:		
									:		
									:		
									:		



Figure 1 LOCCATE Trajectory																										
Assessment Series No			1	2	3	4	5	6	7	8	LOCCATE Calibration Score LCS															
PDOC Assessment																										
Assessment Dates																										
No of Sessions																										
LOCCATE Inferred Diagnosis	LOCCATE Inferred Diagnosis Spectrum	LOCCATE Criterion	M	FC	M	FC	M	FC	M	FC	M	FC	M	FC	M	FC	M	FC								
<b>MCS Emergent</b>		<b>8</b>																	<b>27</b>							
<b>MCS</b>	<b>MCS+ Upper</b>	7 Upper C																	26							
		7 Upper FI																	25							
		7 Upper Hi																	24							
	<b>MCS+ Mid</b>	6 Mid C																		23						
		6 Mid FI																		22						
		6 Mid HI																		21						
	<b>MCS+ Lower</b>	5 Lower C																		20						
		5 Lower FI																		19						
		5 Lower HI																		18						
	<b>MCS-</b>	4C																		17						
		4FI																		16						
		4HI																		15						
<b>VS</b>	<b>VS Upper</b>	3C																	14							
		3FI																	13							
		3HI																	12							
	<b>VS Mid</b>	2C																		11						
		2FI																		10						
		2HI																		9						
<b>VS Lower</b>	1																	8								
<b>COMA</b>	<b>COMA Upper</b>	3C																	7							
		3FI																	6							
		3HI																	5							
	<b>Mid</b>	2C																		4						
		2FI																		3						
		2HI																		2						
	<b>Lower</b>	1																	1							