

Health & Care Information Model:

nl.zorg.GlasgowComaScale-v3.1

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Content

1. nl.zorg.GlasgowComaScale-v3.1	3
1.1 Revision History	3
1.2 Concept	3
1.3 Mindmap	4
1.4 Purpose	4
1.5 Patient Population	4
1.6 Evidence Base	4
1.7 Information Model	4
1.8 Example Instances	9
1.9 Instructions	10
1.10 Interpretation	10
1.11 Care Process	10
1.12 Example of the Instrument	10
1.13 Constraints	10
1.14 Issues	10
1.15 References	10
1.16 Functional Model	10
1.17 Traceability to other Standards	10
1.18 Disclaimer	10
1.19 Terms of Use	11
1.20 Copyrights	11

1. nl.zorg.GlasgowComaScale-v3.1

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1.1 Revision History

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1.2 Concept

Fifteen-point scale for expressing a person's level of consciousness, from fully awake to deep unconsciousness, in a number: the so-called EMV score.

The Glasgow Coma Scale score or EMV (Eye-Motor-Verbal) score is a scale to measure the extent of consciousness, based on eye, verbal and motor responses to specific prescribed sound and pain stimuli.

1.3 Mindmap

1.4 Purpose

The GCS score provides the opportunity to document a clinical observation of a patient's conscious state with a validated instrument which makes use of a patient's responses to stimuli.

1.5 Patient Population

1.6 Evidence Base

The Glasgow Coma Scale is used to evaluate a patient's consciousness by means of three elements:

1. opening eyes (eye response);
2. answering questions (verbal response);
3. motor response.

The three response values are looked at individually and as a whole. The total is referred to as the EMV score. The minimum total score is 3 and the maximum is 15. A slightly altered scale is used for infants (age 0-2) and toddlers (age 2-5).

The EMV score can be expressed as a combination of each of the three individual scores, such as: E3M2V4 (opens eyes when spoken to, arms stretch in response to pain and patient produces incomprehensible sounds).

If one of the EMV elements cannot be evaluated - such as might be the case if a patient is intubated and incapable of verbally responding, or is paralyzed/weak and incapable of fulfilling the motor request, then the individual score is included (score 1), but with an extra comment.

V1T is used for an intubated patient, in which t = 'tube'.

Clinical decisions must be based on each of the specific data of the eyes, motor and verbal responses and, if evaluation is not possible, an explicit explanation.

Standard values for the total score, depending on age:

0-6 months : 9 and up

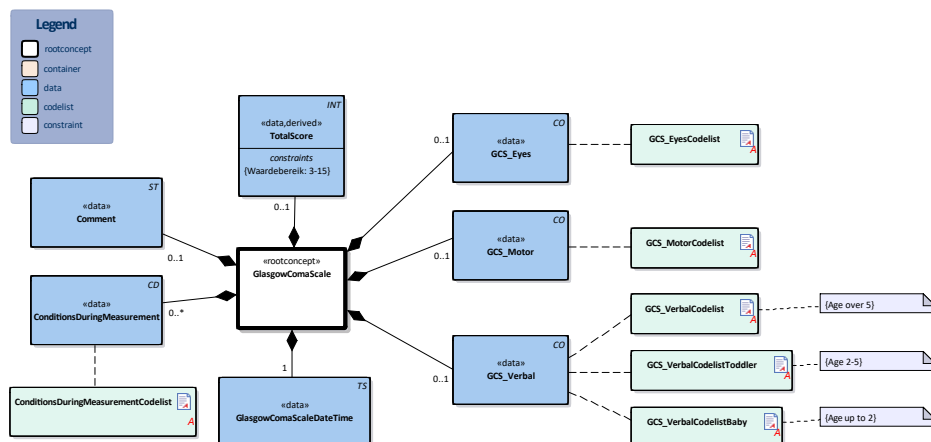
6-12 months : 11 and up

1-2 : 12 and up

2-5 : 13 and up

> 5 : 14 and up

1.7 Information Model



«rootconcept»	GlasgowComaScale	
Definitie	Root concept of the GlasgowComaScale information model. This root concept contains all data elements of the GlasgowComaScale information model.	
Datatype		
DCM::ConceptId	NL-CM:12.8.1	
DCM::DefinitionCode	LOINC: 35088-4 Glasgow coma scale	
Opties		

«data»	GlasgowComaScaleDateTime	
Definitie	Time at which the EMV score was determined.	
Datatype	TS	
DCM::ConceptId	NL-CM:12.8.8	
Opties		

«data»	GCS_Eyes	
Definitie	Best eye response to a stimulus. The element is mandatory, but does not require a numerical value. If no value is given, the reason for this is to be provided in the ConditionsDuringMeasurement concept.	
Datatype	CO	
DCM::ConceptId	NL-CM:12.8.2	
DCM::DefinitionCode	SNOMED CT: 281395000 Glasgow coma score eye opening subscore (observable entity)	
DCM::ExampleValue	3	
DCM::ValueSet	GCS_EyesCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.1
Opties		

«data»	GCS_Motor	
Definitie	Best motor response to a stimulus. The element is mandatory, but does not require a numerical value. If no value is given, the reason for this is to be provided in the ConditionsDuringMeasurement concept.	
Datatype	CO	
DCM::ConceptId	NL-CM:12.8.4	
DCM::DefinitionCode	SNOMED CT: 281396004 Glasgow Coma Score motor response subscore	
DCM::ExampleValue	4	

DCM::ValueSet	GCS_MotorCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.2
Opties		

«data»	GCS_Verbal	
Definitie	Best verbal response to a stimulus. The element is mandatory, but does not require a numerical value. If no value is given, the reason for this is to be provided in the ConditionsDuringMeasurement concept.	
Datatype	CO	
DCM::ConceptId	NL-CM:12.8.6	
DCM::DefinitionCode	SNOMED CT: 281397008 Glasgow coma score verbal response subscore (observable entity)	
DCM::ExampleValue	3	
DCM::ValueSet	GCS_VerbalCodelistBaby	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.5
DCM::ValueSet	GCS_VerbalCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.3
DCM::ValueSet	GCS_VerbalCodelistToddler	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.4
Opties		

«data»	TotalScore	
Definitie	The sum of the EMV scores, expressed as a number on a scale from 3-15. The value does not have to be recorded, as it can always be calculated based on the individual scores, and as recording the total is not common for a difficult to determine individual score.	
Datatype	INT	
DCM::ConceptId	NL-CM:12.8.10	
DCM::ExampleValue	10	
Opties		

Constraint	Waardebereik: 3-15	
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«data»	ConditionsDuringMeasurement	
Definitie	Conditions during the measurement that prevent one or more of the subscores from being determined (non testable), such as,e.g. intubation during testing of GCS_Verbal.	
Datatype	CD	
DCM::ConceptId	NL-CM:12.8.11	
DCM::ValueSet	ConditionsDuringMeasurementCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.6
Opties		

«data»	Comment	
Definitie	Comment on (the context of) the EMV score measurement, such as any problems or factors that may influence interpretation.	
Datatype	ST	
DCM::ConceptId	NL-CM:12.8.9	
DCM::DefinitionCode	LOINC: 48767-8 Annotation comment	

DCM::ExampleValue	Patient was direct voor intubatie volkomen helder; reageert nu minder maar is ook onderkoeld (temperatuur rectaal 35°C).	
Opties		

«document»	ConditionsDuringMeasurementCodelist	
Definitie		
Datatype		
DCM::ValueSetBinding	Extensible	
DCM::ValueSetId	2.16.840.1.113883.2.4.3.11.60.40.2.12.8.6	
Opties		

ConditieTijdensMetingCodelijst			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.6	
Concept Name	Concept Code	Coding Syst. Name	Coding System OID	Description
sedated	17971005	SNOMED CT	2.16.840.1.113883.6.96	gesedeerd
Paralysis caused by muscle relaxant	40241000146103	SNOMED CT	2.16.840.1.113883.6.96	spierverslappers
aphasia	87486003	SNOMED CT	2.16.840.1.113883.6.96	afasie
endotracheal tube present	419991009	SNOMED CT	2.16.840.1.113883.6.96	tube aanwezig
tracheostomy present	302108003	SNOMED CT	2.16.840.1.113883.6.96	tracheostoma aanwezig
other	OTH	NullFlavor	2.16.840.1.113883.5.1008	anders

«document»		GCS_EyesCodelist			
Definitie					
Datatype					
DCM::ValueSetBinding		Extensible			
DCM::ValueSetId		2.16.840.1.113883.2.4.3.11.60.40.2.12.8.1			
Opties					
GCS_EyesCodelijst			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.1		
Concept Name	Value	Concept Code	Coding Syst. Name	Coding System OID	Description
Spontaneous	4	E4	GCS_Eyes	2.16.840.1.113883.2.4.3.11.60.40.4.2.1	Spontaan [De ogen worden spontaan geopend]
To verbal stimuli, command, speech	3	E3	GCS_Eyes	2.16.840.1.113883.2.4.3.11.60.40.4.2.1	Bij aanspreken of aanroepen [De ogen worden pas geopend op aanspreken van de patiënt]
To pain only	2	E2	GCS_Eyes	2.16.840.1.113883.2.4.3.11.60.40.4.2.1	Bij pijn [De ogen worden pas geopend bij een pijnprikkel]
No response	1	E1	GCS_Eyes	2.16.840.1.113883.2.4.3.11.60.40.4.2.1	Geen reactie [De ogen blijven gesloten]

«document»	GCS_MotorCodelist
Definitie	

Datatype		
DCM::ValueSetBinding	Extensible	
DCM::ValueSetId	2.16.840.1.113883.2.4.3.11.60.40.2.12.8.2	
Opties		

GCS_MotorCodelijst			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.2		
Concept Name	Value	Concept Code	Coding Syst. Name	Coding System OID	Description
Obeys	6	M6	GCS_Motor	2.16.840.1.113883.2.4.3.11.60.40.4.2.2	Voert opdracht uit [Een eenvoudig bevel wordt uitgevoerd]
Localises pain	5	M5	GCS_Motor	2.16.840.1.113883.2.4.3.11.60.40.4.2.2	Lokaliseren [In staat zijn de pijn duidelijk te lokaliseren]
Withdrawal response	4	M4	GCS_Motor	2.16.840.1.113883.2.4.3.11.60.40.4.2.2	Terugtrekken [In staat om een afwerende of wegtrekkende beweging te maken op een pijnprikkel]
Flexor response	3	M3	GCS_Motor	2.16.840.1.113883.2.4.3.11.60.40.4.2.2	Buigreactie [Armen en handen op krampachtige manier geplooid. Meestal benen gestrekt.]
Extensor response	2	M2	GCS_Motor	2.16.840.1.113883.2.4.3.11.60.40.4.2.2	Strekreactie [Armen en handen op krampachtige manier geplooid met naar buitengedraaide hand. Mogelijk alle spieren van het lichaam gespannen]
No response	1	M1	GCS_Motor	2.16.840.1.113883.2.4.3.11.60.40.4.2.2	Geen reactie op pijnprikkel [Geen enkele lichamelijke reactie op een pijnprikkel]

«document»	GCS_VerbalCodelist	
Definitie		
Datatype		
DCM::ValueSetBinding	Extensible	
DCM::ValueSetId	2.16.840.1.113883.2.4.3.11.60.40.2.12.8.3	
Opties		

GCS_VerbalCodelijst			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.3		
Concept Name	Value	Concept Code	Coding Syst. Name	Coding System OID	Description
Oriented	5	V5	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Georiënteerd [Helder en duidelijk bewust van de situatie]
Confused	4	V4	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Verward [Verwarde conversatie maar wel in staat om te antwoorden op de vragen]
Inappropriate speech	3	V3	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Inadequaaf [Woorden zijn te verstaan maar vormen geen zinnen]
Incomprehensible sounds	2	V2	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Onverstaanbaar [De spraak is niet te verstaan]
No response	1	V1	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Geen reactie [Geen enkel verbale response]

«document»		GCS_VerbalCodelistToddler			
Definitie					
Datatype					
DCM::ValueSetBinding		Extensible			
DCM::ValueSetId		2.16.840.1.113883.2.4.3.11.60.40.2.12.8.4			
Opties					
GCS_VerbalCodelijstKleuter			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.4		
Concept Name	Value	Concept Code	Coding Syst. Name	Coding System OID	Description
Oriented	5	V5	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Adequate woorden en zinnen [Woorden of kleine zinnen in context van de situatie]
Confused	4	V4	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Onjuiste woorden [Verwarde woorden]
Inappropriate speech	3	V3	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Huilen [Aanhoudend huilen of krijsen]
Incomprehensible sounds	2	V2	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Kreunen [Alleen kreunen]
No response	1	V1	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Geen reactie [Geen enkel verbale response]

«document»		GCS_VerbalCodelistBaby			
Definitie					
Datatype					
DCM::ValueSetBinding		Extensible			
DCM::ValueSetId		2.16.840.1.113883.2.4.3.11.60.40.2.12.8.5			
Opties					
GCS_VerbalCodelijstBaby			OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.8.5		
Concept Name	Value	Concept Code	Coding Syst. Name	Coding System OID	Description
Oriented	5	V5	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Lachen en huilen [Lacht of huilt zachtjes]
Confused	4	V4	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Huilen [Huilt en is onpasselijk]
Inappropriate speech	3	V3	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Niet adequaat huilen [Aanhoudend huilen of krijsen]
Incomprehensible sounds	2	V2	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Kreunen [Kreunen en onrustig/rusteloos]
No response	1	V1	GCS_Verbal	2.16.840.1.113883.2.4.3.11.60.40.4.2.3	Geen reactie [Geen enkel verbale response]

Legend	
Definitie	
Datatype	
Opties	

1.8 Example Instances

GlasgowComa ScaleDatumTijd	GCS_ Eyes	GCS_ Motor	GCS_ Verbal	TotaalScore	Toelichting
08-02-2013 6:43	2	4	5	11	Beste score voor intubatie, kleding stond in brand
GlasgowComa ScaleDatumTijd	GCS_ Eyes	GCS_ Motor	GCS_ Verbal	TotaalScore	Toelichting
07-02-2013 11:34	4	4	1		Lijkt adequaat
GlasgowComa ScaleDatumTijd	GCS_ Eyes	GCS_ Motor	GCS_ Verbal	TotaalScore	Toelichting
07-02-2013 8:00	1	1	1	3	Zonder spierverslappers na 2 uur reanimatie

1.9 Instructions

1.10 Interpretation

1.11 Care Process

1.12 Example of the Instrument

1.13 Constraints

1.14 Issues

1.15 References

1. openEHR-EHR-OBSERVATION.glasgow_coma.v1[Online] Beschikbaar op: <http://www.openehr.org/knowledge/> [Geraadpleegd: 23 februari 2015].
2. Glasgow Coma Schaal [Online] Beschikbaar op: <http://www.tabellenboekje.nl/menselijk-lichaam-tabel-glasgow-coma-schaal.php#glasgow-coma-schaal-volwassen> [Geraadpleegd: 23 februari 2015].

1.16 Functional Model

1.17 Traceability to other Standards

1.18 Disclaimer

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