

# Health & Care Information Model:

**nl.zorg.DAS-v1.1**

Status: Final

Release status: Prepublished

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# 1. nl.zorg.DAS-v1.1

DCM::CoderList	*
DCM::ContactInformation.Address	*
DCM::ContactInformation.Name	*
DCM::ContactInformation.Telecom	*
DCM::ContentAuthorList	*
DCM::CreationDate	26-03-2020
DCM::DeprecatedDate	
DCM::DescriptionLanguage	nl
DCM::EndorsingAuthority.Address	
DCM::EndorsingAuthority.Name	*
DCM::EndorsingAuthority.Telecom	
DCM::Id	2.16.840.1.113883.2.4.3.11.60.40.3.12.18
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DCM::ModelerList	Linda Mook
DCM::Name	nl.zorg.DAS
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DCM::RevisionDate	28-07-2021
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DCM::Version	1.1
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## 1.1 Revision History

Publicatieversie 1.0 (01-09-2020)

Publicatieversie 1.1 (01-12-2021)

Bevat: ZIB-1248, ZIB-1404, ZIB-1508, ZIB-1567.

## 1.2 Concept

The Disease Activity Score (DAS) is a combined index developed in Nijmegen around 1990 to measure disease activity in patients with rheumatoid arthritis (RA). It concerns a formula with 28 or 44 painful and swollen joints, a blood value for inflammation (BSE or CRP) and the overall experience of disease activity by the patient. The DAS results in a number between 0 and 10, which indicates how active rheumatoid arthritis is at present. The score has been validated for use in clinical trials in combination with the EULAR response criteria.

## 1.3 Mindmap

## 1.4 Purpose

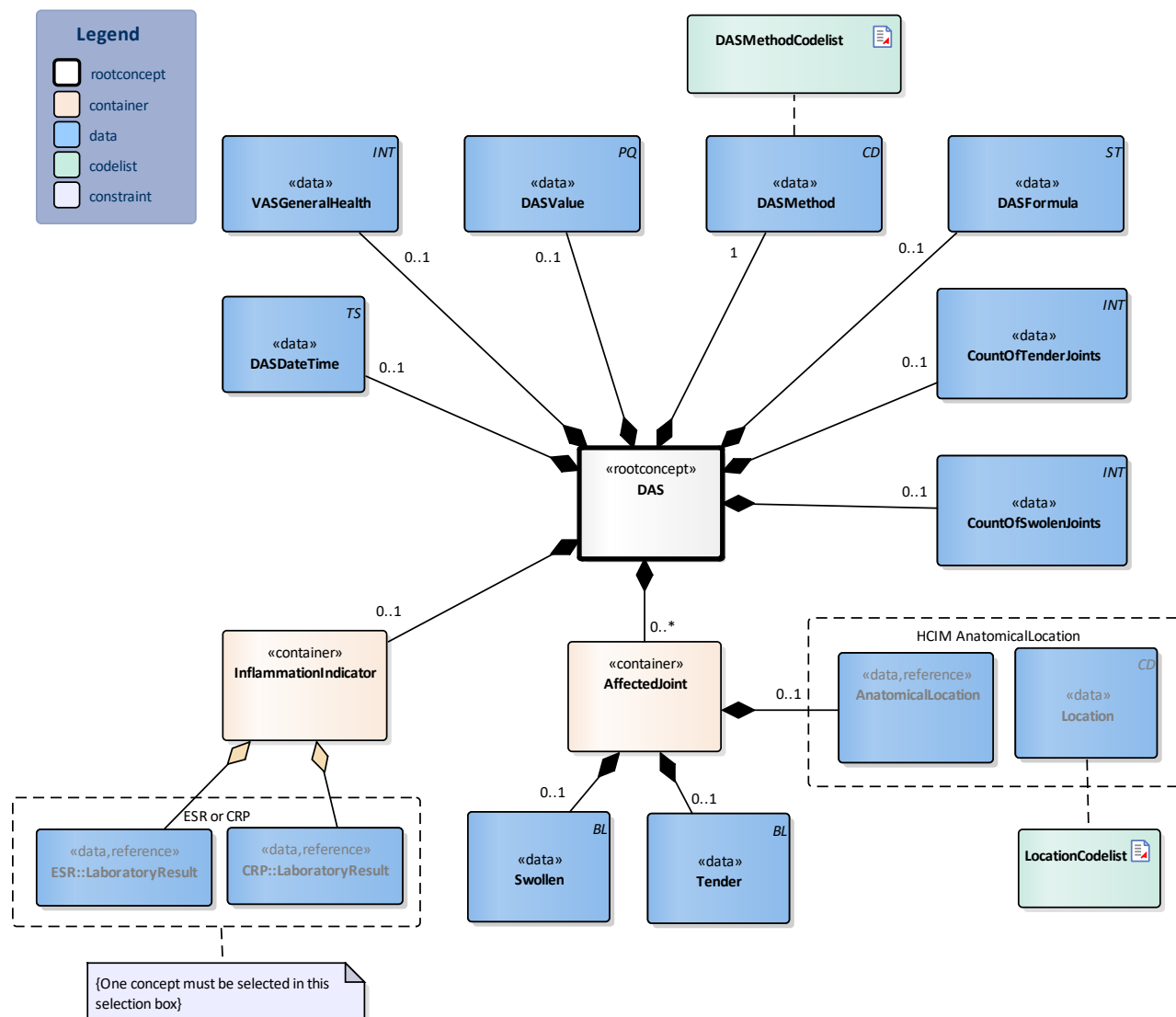
In addition to frequent use in trials, the DAS is used to measure the disease activity of RA patients in daily clinical practice, supporting the "treat-to-target" strategy recommended in guidelines. The DAS is also used as an outcome measure for the care of RA patients in a national quality registration.

## 1.5 Patient Population

Adult patients with rheumatoid arthritis (RA).

## 1.6 Evidence Base

## 1.7 Information Model



«rootconcept»	DAS	
<b>Definitie</b>	Root concept of the information model. This root concept contains all data elements of the information model DAS.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.18.1	
<b>DCM::DefinitionCode</b>	SNOMED CT: 443349002	Disease activity score in rheumatoid arthritis
<b>Opties</b>		

«data»	DASValue	
<b>Definitie</b>	The result (value).	
<b>Datatype</b>	PQ	
<b>DCM::ConceptId</b>	NL-CM:12.18.15	
<b>DCM::DefinitionCode</b>	SNOMED CT: 763259004	Disease Activity Score (observable entity)
<b>DCM::ExampleValue</b>	5,27	

<b>Opties</b>	
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<b>«data»</b>	<b>DASMethod</b>	
<b>Definitie</b>	The specification of the DAS method used. There are different DAS scores. Each type has a different formula. DAS-28 or DAS-44 stands for 28 or 44 painful and swollen joints. One blood value for inflammation (a ESR or a CRP laboratory result) and the overall experience of disease activity by the patient via a Visual Analog Scale (VAS).	
<b>Datatype</b>	CD	
<b>DCM::ConceptId</b>	NL-CM:12.18.14	
<b>DCM::DefinitionCode</b>	SNOMED CT: 443349002 Disease activity score in rheumatoid arthritis	
<b>DCM::ExampleValue</b>	DAS-28 CRP	
<b>DCM::ValueSet</b>	DASMethodCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.18.2
<b>Opties</b>		

<b>«data»</b>	<b>DASFormula</b>	
<b>Definitie</b>	The specification of the type of DAS. There are different DAS scores. Each type has a different formula.	
<b>Datatype</b>	ST	
<b>DCM::ConceptId</b>	NL-CM:12.18.21	
<b>Opties</b>		

<b>«container»</b>	<b>AffectedJoint</b>	
<b>Definitie</b>	Container of the AffectedJoint concept.This container contains all data elements of the AffectedJoint concept.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.18.2	
<b>DCM::DefinitionCode</b>	SNOMED CT: 118952005 Joint finding	
<b>DCM::ExampleValue</b>	Wrist	
<b>Opties</b>		

<b>«data»</b>	<b>AnatomicalLocation</b>	
<b>Definitie</b>	Joints that are tender and/or swollen.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.18.16	
<b>DCM::ExampleValue</b>	Links	
<b>DCM::ReferencedConceptId</b>	NL-CM:20.7.1	This is a reference to the rootconcept of information model AnatomicLocation.
<b>Opties</b>		

<b>«data»</b>	<b>Location</b>	
<b>Definitie</b>	The location and laterality of joints in the body.	
<b>Datatype</b>	CD	
<b>DCM::ConceptId</b>	NL-CM:20.7.4	
<b>DCM::DefinitionCode</b>	SNOMED CT: 363698007 Finding site	
<b>DCM::ValueSet</b>	LocationCodelist	OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.18.1
<b>Opties</b>		

<b>«data»</b>	<b>Swollen</b>	
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<b>Definitie</b>	Swolen joint indicator.	
<b>Datatype</b>	BL	
<b>DCM::ConceptId</b>	NL-CM:12.18.4	
<b>DCM::DefinitionCode</b>	SNOMED CT: 271771009	
	Joint swelling	
<b>DCM::ExampleValue</b>	False	
<b>Opties</b>		

<b>«data»</b>	<b>Tender</b>	
<b>Definitie</b>	Tender joint indicator.	
<b>Datatype</b>	BL	
<b>DCM::ConceptId</b>	NL-CM:12.18.3	
<b>DCM::DefinitionCode</b>	SNOMED CT: 110288007	
	Tenderness of joint	
<b>DCM::ExampleValue</b>	True	
<b>Opties</b>		

<b>«data»</b>	<b>CountOfTenderJoints</b>	
<b>Definitie</b>	Count of tender joints as reported by the patient.	
<b>Datatype</b>	INT	
<b>DCM::ConceptId</b>	NL-CM:12.18.11	
<b>DCM::DefinitionCode</b>	SNOMED CT: 442521001	
	Tender joint count for rheumatoid arthritis assessment	
<b>DCM::ExampleValue</b>	10	
<b>Opties</b>		

<b>«data»</b>	<b>CountOfSwolenJoints</b>	
<b>Definitie</b>	Count of swollen joints.	
<b>Datatype</b>	INT	
<b>DCM::ConceptId</b>	NL-CM:12.18.12	
<b>DCM::DefinitionCode</b>	SNOMED CT: 442194005	
	Swollen joint count for rheumatoid arthritis assessment	
<b>DCM::ExampleValue</b>	20	
<b>Opties</b>		

<b>«container»</b>	<b>InflammationIndicator</b>	
<b>Definitie</b>	Container of the InflammationIndicator concept.This container contains all data elements of the InflammationIndicator concept.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.18.22	
<b>Opties</b>		

<b>«data»</b>	<b>ESR::LaboratoryResult</b>	
<b>Definitie</b>	The C-reactive protein (CRP) is a laboratory measurement valuable for determining the presence of inflammation or to monitor the effect of a medical treatment on the inflammation. The erythrocyte sedimentation rate (ESR or sed rate) is the rate at which red blood cells in anticoagulated whole blood descend in a standardized tube over a period of one hour. Both test results can be used to calculate the DAS.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.18.20	

<b>DCM::DefinitionCode</b>	LOINC: 4539-3 Erythrocyte sedimentation rate Zeta by Zetafuge	
<b>DCM::DefinitionCode</b>	LOINC: 4537-7 Erythrocyte sedimentation rate by Westergren method	
<b>DCM::ExampleValue</b>	20 (mm/hr)	
<b>DCM::ReferencedConceptId</b>	NL-CM:13.1.1	This is a reference to the rootconcept of information model LaboratoryTestResult.
<b>Opties</b>		

<b>«data»</b>	<b>CRP::LaboratoryResult</b>	
<b>Definitie</b>	The C-reactive protein (CRP) is a laboratory measurement valuable for determining the presence of inflammation or to monitor the effect of a medical treatment on the inflammation. The erythrocyte sedimentation rate (ESR or sed rate) is the rate at which red blood cells in anticoagulated whole blood descend in a standardized tube over a period of one hour. Both test results can be used to calculate the DAS.	
<b>Datatype</b>		
<b>DCM::ConceptId</b>	NL-CM:12.18.19	
<b>DCM::DefinitionCode</b>	LOINC: 30522-7 C reactive protein [Mass/volume] in Serum or Plasma by High sensitivity method	
<b>DCM::DefinitionCode</b>	LOINC: 1988-5 C reactive protein [Mass/volume] in Serum or Plasma	
<b>DCM::ExampleValue</b>	4 (mg/l)	
<b>DCM::ReferencedConceptId</b>	NL-CM:13.1.1	This is a reference to the rootconcept of information model LaboratoryTestResult.
<b>Opties</b>		

<b>«data»</b>	<b>DASDateTime</b>	
<b>Definitie</b>	The date and possibly time when the DAS score measurement was carried out.	
<b>Datatype</b>	TS	
<b>DCM::ConceptId</b>	NL-CM:12.18.17	
<b>DCM::DefinitionCode</b>	SNOMED CT: 439771001	Date of event
<b>Opties</b>		

<b>«data»</b>	<b>VASGeneralHealth</b>	
<b>Definitie</b>	The VAS score for general health as experienced by the patient on a scale of 1 to 100	
<b>Datatype</b>	INT	
<b>DCM::ConceptId</b>	NL-CM:12.18.8	
<b>DCM::DefinitionCode</b>	SNOMED CT: 446661009	Visual analog scale score
<b>DCM::ExampleValue</b>	68	
<b>Opties</b>		

<b>«document»</b>	<b>DASMethodCodelist</b>	
<b>Definitie</b>		
<b>Datatype</b>		
<b>DCM::ValueSetBinding</b>	Extensible	

<b>DCM::ValueSetId</b>	2.16.840.1.113883.2.4.3.11.6 0.40.2.12.18.2			
<b>HCIM::ValueSetLanguage</b>	--			
<b>Opties</b>				
<b>DASMethodeCodelijst</b>		<b>OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.18.2</b>		
<b>Concept Name</b>	<b>Concept Code</b>	<b>Coding Syst. Name</b>	<b>Coding System OID</b>	<b>Description</b>
DAS28 - CRP	117651000146103	SNOMED CT	2.16.840.1.113883.6.96	DAS 28-CRP
DAS28 - ESR	117661000146100	SNOMED CT	2.16.840.1.113883.6.96	DAS28-BSE
DAS44 - CRP	117681000146108	SNOMED CT	2.16.840.1.113883.6.96	DAS44-CRP
DAS44 - ESR	117691000146105	SNOMED CT	2.16.840.1.113883.6.96	DAS44-BSE

<b>«document»</b>	<b>LocationCodelist</b>			
<b>Definitie</b>				
<b>Datatype</b>				
<b>DCM::ValueSetBinding</b>	Extensible			
<b>DCM::ValueSetId</b>	2.16.840.1.113883.2.4.3.11.6 0.40.2.12.18.1			
<b>HCIM::ValueSetLanguage</b>	--			
<b>Opties</b>				
<b>LocatieCodelijst</b>		<b>OID: 2.16.840.1.113883.2.4.3.11.60.40.2.12.18.1</b>		
<b>Concept Name</b>	<b>Concept Code</b>	<b>Codesystem</b>	<b>Codesystem OID</b>	<b>Description</b>
Temporomandibular joint structure	53620006	SNOMED CT	2.16.840.1.113883.6.96	Kaakgewricht
Sternoclavicular joint structure	7844006	SNOMED CT	2.16.840.1.113883.6.96	Sternoclaviculair gewricht
Acromioclavicular joint structure	85856004	SNOMED CT	2.16.840.1.113883.6.96	Acromioclaviculair gewricht
Glenohumeral joint structure	85537004	SNOMED CT	2.16.840.1.113883.6.96	Schoudergewricht
Elbow joint structure	16953009	SNOMED CT	2.16.840.1.113883.6.96	Ellebooggewricht
Wrist joint structure	74670003	SNOMED CT	2.16.840.1.113883.6.96	Polsgewricht
Carpometacarpal joint structure of thumb	30099006	SNOMED CT	2.16.840.1.113883.6.96	Carpometacarpaal gewricht van duim
Metacarpophalangeal joint structure of thumb	56310002	SNOMED CT	2.16.840.1.113883.6.96	Metacarpofalangeaal gewricht van duim
Metacarpophalangeal joint structure of index finger	289002	SNOMED CT	2.16.840.1.113883.6.96	Metacarpofalangeaal gewricht van wijsvinger
Metacarpophalangeal joint structure of middle finger	6059006	SNOMED CT	2.16.840.1.113883.6.96	Metacarpofalangeaal gewricht van middelvinger
Metacarpophalangeal joint structure of ring finger	13822002	SNOMED CT	2.16.840.1.113883.6.96	Metacarpofalangeaal gewricht van ringvinger
Metacarpophalangeal joint structure of	5493005	SNOMED CT	2.16.840.1.113883.6.96	Metacarpofalangeaal gewricht van pink



little finger				
Structure of interphalangeal joint of thumb	115955008	SNOMED CT	2.16.840.1.113883.6.96	Interfalangeaal gewricht van duim
Structure of proximal interphalangeal joint of index finger	371270005	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van wijsvinger
Structure of proximal interphalangeal joint of middle finger	371263005	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van middelvinger
Structure of proximal interphalangeal joint of ring finger	371267006	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van ringvinger
Structure of proximal interphalangeal joint of little finger	371233001	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van pink
Structure of distal interphalangeal joint of index finger	371210002	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van wijsvinger
Structure of distal interphalangeal joint of middle finger	371218009	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van middelvinger
Structure of distal interphalangeal joint of ring finger	371204002	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van ringvinger
Structure of distal interphalangeal joint of little finger	371202003	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van pink
Sacroiliac joint structure	39723000	SNOMED CT	2.16.840.1.113883.6.96	Sacroiliacaal gewricht
Hip joint structure	24136001	SNOMED CT	2.16.840.1.113883.6.96	Heupgewricht
Knee joint structure	49076000	SNOMED CT	2.16.840.1.113883.6.96	Kniegewricht
Ankle joint structure	70258002	SNOMED CT	2.16.840.1.113883.6.96	Enkelgewricht
Intertarsal joint structure	27949001	SNOMED CT	2.16.840.1.113883.6.96	structuur van articulatio intertarsalis
First metatarsophalangeal joint structure	27824001	SNOMED CT	2.16.840.1.113883.6.96	Metatarsofalangeaal gewricht van grote teen
Metatarsophalangeal joint structure of second toe	71721008	SNOMED CT	2.16.840.1.113883.6.96	Metatarsofalangeaal gewricht van tweede teen
Metatarsophalangeal joint structure of third toe	81247008	SNOMED CT	2.16.840.1.113883.6.96	Metatarsofalangeaal gewricht van derde teen
Metatarsophalangeal joint structure of fourth toe	45230000	SNOMED CT	2.16.840.1.113883.6.96	Metatarsofalangeaal gewricht van vierde teen
Metatarsophalangeal joint structure of fifth toe	50133002	SNOMED CT	2.16.840.1.113883.6.96	Metatarsofalangeaal gewricht van kleine teen

Interphalangeal joint structure of great toe	363670009	SNOMED CT	2.16.840.1.113883.6.96	Interfalangeaal gewricht van grote teen
Proximal interphalangeal joint structure of second toe	371292009	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van tweede teen
Proximal interphalangeal joint structure of third toe	371255009	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van derde teen
Proximal interphalangeal joint structure of fourth toe	371288002	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van vierde teen
Proximal interphalangeal joint structure of fifth toe	371284000	SNOMED CT	2.16.840.1.113883.6.96	Proximaal interfalangeaal gewricht van kleine (vijfde) teen
Distal interphalangeal joint structure of second toe	371216008	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van tweede teen
Distal interphalangeal joint structure of third toe	371219001	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van derde teen
Distal interphalangeal joint structure of fourth toe	371205001	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van vierde teen
Distal interphalangeal joint structure of fifth toe	371203008	SNOMED CT	2.16.840.1.113883.6.96	Distaal interfalangeaal gewricht van kleine (vijfde) teen

Legend	
<b>Definitie</b>	
<b>Datatype</b>	
<b>Opties</b>	

Constraint	
<b>Definitie</b>	One concept must be selected in this selection box
<b>Datatype</b>	
<b>Opties</b>	

## 1.8 Example Instances

DAS						
DatumTijd	Methode	Waarde	Aantal gewrichten		OntstekingsIndicator	
			Pijnlijk	Gezwellen	BSE (mm/hr)	CRP (mg/l)
01/08/2020	DAS 28-CRP	5,34	8	2	20	
01/08/2020	DAS28-BSE	4,78	8	2		4

Aangedaan Gewricht				
	Pijnlijk		Gezwellen	
	L	R	L	R
Schoudergewricht				
Ellebooggewricht				
Polsgewricht				
Metacarpofalangeaal gewricht van:				
duim				
wijsvinger				
middelvinger				
ringvinger				
pink		x		
duim		x		
wijsvinger	x	x		x
middelvinger		x		
ringvinger	x	x		x
pink		x		
Kniegewricht				
<b>Aantal pijnlijk</b>	8			
<b>Aantal gezwollen</b>			2	

## 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

Informatie over het DAS instrument [Online] Beschikbaar op: <https://www.das-score.nl/das28/en/>  
[Geraadpleegd: 8 oktober 2019]

## 1.16 Functional Model

## 1.17 Traceability to other Standards

## 1.18 Disclaimer

The Health and Care Information Models (a.k.a Clinical Building Block) has been made in collaboration with several different parties in healthcare. These parties asked Nictiz to manage good maintenance and development of the information models. Hereafter, these parties and Nictiz are referred to as the collaborating parties. The collaborating parties paid utmost attention to the reliability and topicality of the data in these Health and Care Information Models. Omissions and inaccuracies may however occur. The collaborating parties are not liable for any damages resulting from omissions or inaccuracies in the information provided, nor are they liable for damages resulting from problems caused by or inherent to distributing information on the internet, such as malfunctions, interruptions, errors or delays in information or services provide by the parties to you or by you to the parties via a website or via e-mail, or any other digital means. The collaborating parties will also not accept liability for any damages resulting from the use of data, advice or ideas provided by or on behalf of the parties by means of the Health and Care Information Models. The parties will not accept any liability for the content of information in this Health and Care Information Model to which or from which a hyperlink is referred. In the event of contradictions in mentioned Health and Care Information Model documents and files, the most recent and highest version of the listed order in the revisions will indicate the priority of the documents in question. If information included in the digital version of a Health and Care Information Model is also distributed in writing, the written version will be leading in case of textual differences. This will apply if both have the same version number and date. A definitive version has priority over a draft version. A revised version has priority over previous versions.

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