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HL7 Version 3 Detailed Clinical Models, Release 1

DCM example Body Height v 1.09

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HL7 Informative Document

Sponsored by:
Patient Care Work Group

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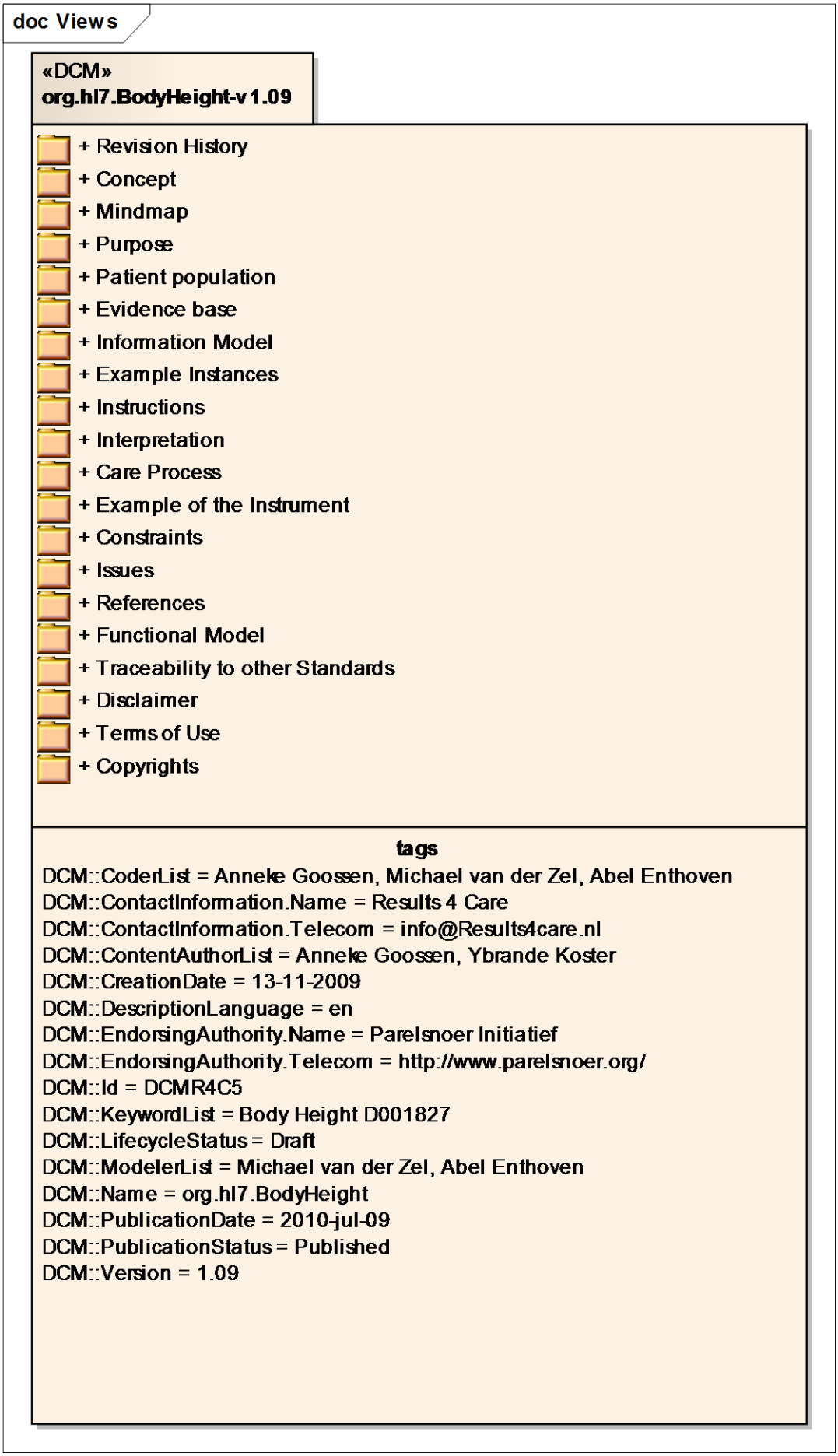


Revision History

- Version 0.1 till version 0.91 is development, review and adjustments of the DCM. Version 0.91 is developed in Enterprise Architect.
- Version 0.92 till version 0.98 is adjusted in cooperation with the project Parelsnoer Initiative. The scope was the development of the information model.
- Version 0.99 is the english translation of version 0.98.
- Version 0.99a is the adjustment to the new template for a DCM and the preperation for the HL7 ballot.
- Version 0.101 adjusted using HL7 ballot reconciliations sept-2010.
- Version 0.103 complete changes carried out conform HL reconciliation aug 2011.
- Subsequent versions have been created to satisfy the needs of the Onze Lieve Vrouwe Gasthuis (OLVG), additional HL7 ballot comments, and Stichting Health Base.
- Version 1.09 is the one implemented in OLVG nursing care record and Stichting Health Base Pharmabase.

Concept

This DCM Body Height concerns the measuring of the height of a persons' body.

Mindmap

none

Purpose

The purpose of the observation is the measurement of the length of the body. This is most commonly referred to as body height.
Sometimes the word length is also used, but length is also used for the length of the body supine.

The measuring of the body height is used to monitor growth. The body height is also used with the body weight to calculate the Body Mass Index (BMI). The measuring of the body height can also be important for the choice of a bed size.

Patient population

The body height can be measured in any person. The measuring device used could differ per target group: babies will be measured with a device different from that used for adults.

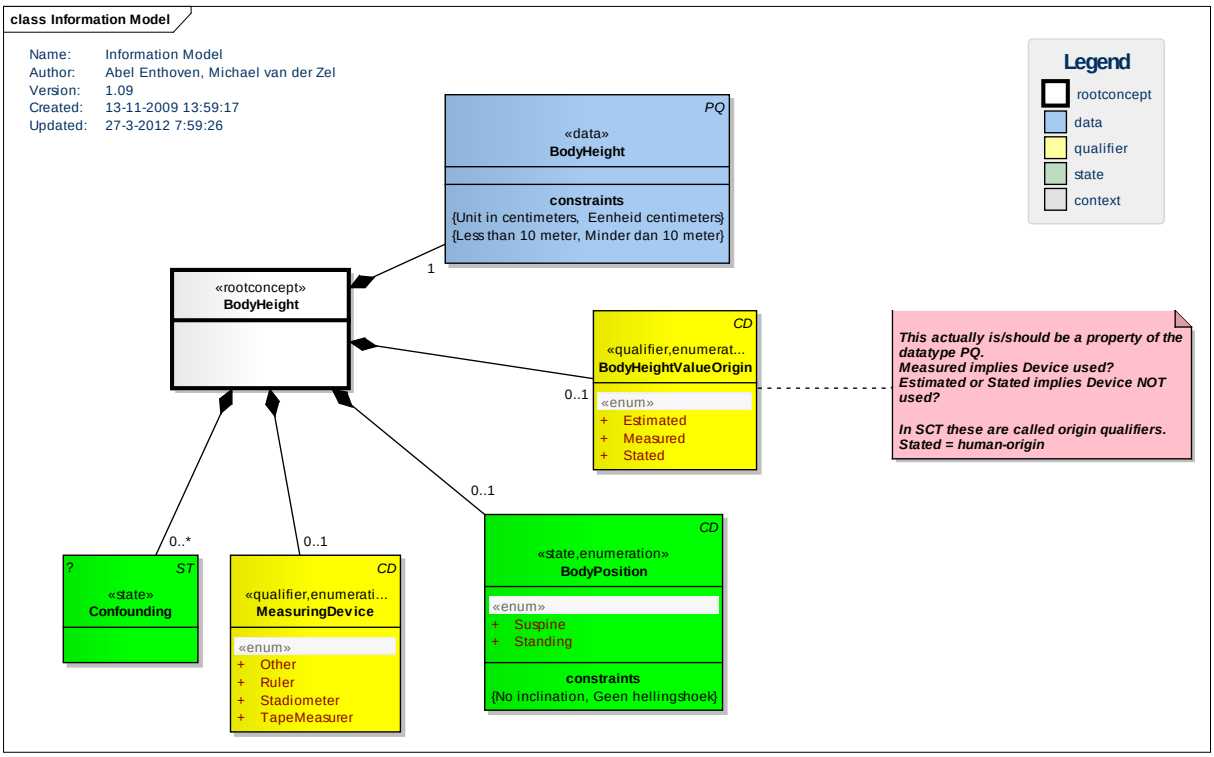
Evidence base

Length is a physically objective measure of the human body. It is used for many related assessments with medical importance such as measuring growth, for calculating the body surface area to calculate the survival probability in the case of skin injuries, to calculate the right amount of medication, or for determining in combination with the weight the Body Mass Index (BMI) for right medication, for the classification of adolescence, for the definition of facility requirements (bed size), etc. Body height percentile is a very common associated observation (esp for young children).
Body height is part of both the physical examination performed by performed by doctors and nurses.
When interested in the effect of an intervention multiple measurements must take place over

time.

Information Model

Confounding **is a** *text string*
BodyHeight **has** Confounding
BodyHeight **has** BodyPosition
BodyPosition **has** Position
BodyHeight **has** MeasuringDevice
BodyHeight **has** BodyHeight
BodyHeight **is a** *physical quantity*
BodyHeightMeasuringPosition **is a** Position
MeasuringDevice **is a** *coded description*



Concept	Definitie	
BodyHeight *SCT: 248334005 length of body, SHB: LENGTE*	The body height of a patient.	
Constraint	Unit in centimeters	inv:unit='cm'
Constraint	Less than 10 meter	inv:value<1000

Concept	Definitie
BodyHeight *LOINC: 8302-2*	The length (or height) of the patient's body as measured from the soles of the feet to the top of the head, measured

	the patient is standing if possible. In general, length measurements are recommended for children under 2 years of age and individuals who cannot stand. Is also used to determine BMI. The BMI itself is not included, every system can make its own calculations based on body height and body weight. Lenght will often be expressed as a percentile. That is also not included in this DCM.

Concept	Definitie
BodyHeightValueOrigin *SCT:255395001 origins*	**Estimated** *SnomedCT: 414135002* *Estimated* **Measured** *SnomedCT: 258104002* *Measured* **Stated** *SCT:278412004 human-origin*

Concept	Definitie	
BodyPosition *SNOMED-CT: 397155001* *body position*	The position of the body during the measurement.	
	Suspine *SNOMED-CT: 102538003* *lying position*	The position of the body lying on the back
	Standing *SNOMED-CT: 10904000* *standing position*	The position of the body standing upright
Constraint	No inclination,	inv:self.Hellingshoek->size()=0

Concept	Definitie
Confounding	A factor of confusion wich is of influence of the body height. E.g. amputation.

Concept	Definitie
MeasuringDevice *SNOMED-CT: 363699004*	Device used to measure body height.

direct device, LOINC: 41910-1	--DCM::Language=nl Instrument gebruikt om lichaamslengte te meten	
	Other *NullFlavor: OTH anders dan de gegeven opties*	An other device to measure body height has been used than a ruler or a tape measurer.
	Ruler *SNOMED-CT: 102304005 measuring ruler*	A ruler used to measure body height.
	Stadiometer	
	TapeMeasurer *SNOMED-CT: 51791000 measuring tape*	A tape used to measure body height.

Example Instances

None

Instructions

The most frequently used, valid and reliable method is measuring by means of a measuring rod attached to the wall. The patient has to stand straight against the wall, with weight distributed evenly, heels to the wall, wile facing straight forward. The shoes will have to be taken off.
In case it is not possible to measure body height this way there can be an estimation; this can be done in several ways. One way is to estimate based on the arm span. In that case the distance between the top of the longest finger from one hand and the top of the longest finger from the other hand is measured when both arms are completely stretched. This length is usually about the same as the height of the body.
Another way to estimate length is by the height of the knee. The following formula is used:

- Male: Body height (cm) = 64,19-(0,04 x age in years) + (2.02 x height of the knee (cm))
- Female: Body height (cm) = 84,88- (o,24 x age in years) + (1,83 x height of the knee (cm))

A third method, for example in bed bound patients, is the use of a measuring tape, but this method is not a 100% accurate. Please remind the body position of the patient; this should be flat, on the back in a fully extended, supine position with the pelvis flat. Further the legs should be extended and the feet flexed.

Interpretation

The body height of children and adolescents is usually measured with reference to a growth chart. There are different charts for boy and girls, male and female and geographic oriented charts. For the purpose of this document it is irrelevant to further examine this.

Care Process

The determination of the body height of a person is part of the physical examination and can

be preformed once or repeatedly depending on the growth expectations of that person. Body height is also a part of the medical history. The relation between length and weight gives an impression of the state of nutrition. These outcomes are important to determine the right amount of medication and anaesthetics.
Based on body height as well as body weight a doctor can make decisions on the treatment.

Example of the Instrument

None

Constraints

None

Issues

- The DCM Body Position to be developed
- Code for Confounding?
- Missing code for stadiometer as a device. Not in Snomed CT and in LOINC.
- Missing code for stated in the class TypeValue.

References

Projects:
eDiabetes, Nicitz
Parelsnoer Initiative

Literature:
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Vocabulary:
Name code system: Snomed CT (SCT)
OID code system: 2.16.840.1.113883.6.96

Functional Model

Not expressed yet.

Traceability to other Standards

Not expressed yet.

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