V3_DCModels_R1_I1_2010Sep-Body_Weight_v1.08

Detailed Clinical Models (DCM)

Health Level 7 Release 1

(Universal Realm)

Reconciled version from 1st Informative Ballot

DCM example Body Weight_v1.08

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org.hl7.BodyWeight-v1.08

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DCM::ContentAuthorList	Anneke Goossen, Ybrande Koster
DCM::DescriptionLanguage	en (English)
DCM::Id	R4CDCM1
DCM::KeywordList	Body Weight D001835 (MeSH Heading)
DCM::LifecycleStatus	Draft
DCM::ModelerList	Michael van der Zel, Abel Enthoven
DCM::Name	org.hl7.BodyWeight
DCM::PublicationDate	2012-march 27
DCM::ReviewerList	Parelsnoer Project, HL7 ballot community, Stichting Health Base
DCM::Version	1.08

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 0.97 is adjusted in cooperation with the project Parelsnoer Initiative. The scope was the development of the information model.

Version 0.98 is the English translation of version 0.97.

Version 0.99 is the adjustment to the new template for a DCM and the preparation for the HL7 ballot.
Versions 1.00 - 1.02 are in between after the HL7 ballot where only some changes where applied
Version 1.03 is the full changes carried out according to the Sept 2010 HL7 ballot reconciliation of August 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 1.08 is the one implemented in OLVG nursing care record and Stichting Health Base Pharmabase.

doc Views

«DCM»
org.hl7.BodyWeight-v 1.08

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DCM::CoderList = Anneke Goossen, Michael van der Zel, Abel Enthoven
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DCM::Name = org.hl7.BodyWeight
DCM::PublicationDate = 2010-jul-09
DCM::ReviewerList =
DCM::Version = 1.08

Concept

This DCM Body weight concerns the observation of the weight of a persons' body.

Mindmap

None available

Purpose

The purpose is to determine the total body weight of a person. Measuring body weight is important to calculate correctly the appropriate dose of some medicines, for example anesthesia. Also the weight can be an indication of one's health. Measuring weight over time can also be useful to assess or prevent malnutrition.

Patient population

Every person can have their body weight measured. The measuring devices that are used to determine the body weight can be different for the different target groups.
This DCM is not intended for the different variants of fetal weight.

Evidence Base

The relation between the amount of energy that the body consumes and the amount the body needs is reflected in the body weight. A healthy body weight will not increase the risk of diseases like cardiovascular diseases, certain types of cancer and diabetes (www.voedingscentrum.nl, 2008). Body Weight measurement is an important factor to determine the quality of the state of nutrition of a person. (Transferpunt VaardigheidsOnderwijs, 2004). Body weight is also a part of the physical examination of a physician. (NHG standaarden, 2008). In that case the body weight could be, for example, a starting value for the effect of a treatment. (NHG standaard Hartfalen, 2008).
The body weight is important in (Transferpunt VaardigheidsOnderwijs, 2004):
Nutrition: the relation between the amount of consumed nutrition value and the needs of the patient;
The calculation of the amount of anesthetic, pain medication or other medication;
The effect of the disease;
- Normal or abnormal increase or decrease of body weight;
- Problems in maintaining a healthy body weight;
- Eating disorders.

Body weight measurement can take place in any healthcare setting and is carried out by, among others, physicians, nurses, physicians assistant, dietician etc. The frequency of the measuring of body weight depends on the importance for the health and treatment of the patient. Patients who need to be regularly measured are, for instance patients that:
Are severely weakened or emaciated as a result of their illness or have a fortifying diet;
Have a health risk caused by their high body weight or have a slimming diet;
Have undergone or will undergo major surgery;
Have fluid accumulation or are at risk for fluid accumulation (Arets, Vaessen & Gijselaers, 1988).
In measuring body weight, the following items are of importance:
- The scale that is used to measure body weight;
- The clothes worn by the patient;
- Whether someone wears shoes or not;
- Whether someone did or did not go to the bathroom;
- The time of day the weighing is done;
- The unit in which the weight is expressed;
- Whether someone has gained weight or lost weight.

All these variables are further specified.
When interested in the effect of an intervention, multiple measurements must take place over time. These measurements can be placed into a curve, so changes in body weight will become visible. Of interest is determining whether the patient has a healthy body weight or an unhealthy body weight. In that case, the height also has to be measured.
Body weight percentile is a very common associated observation (esp for young children).

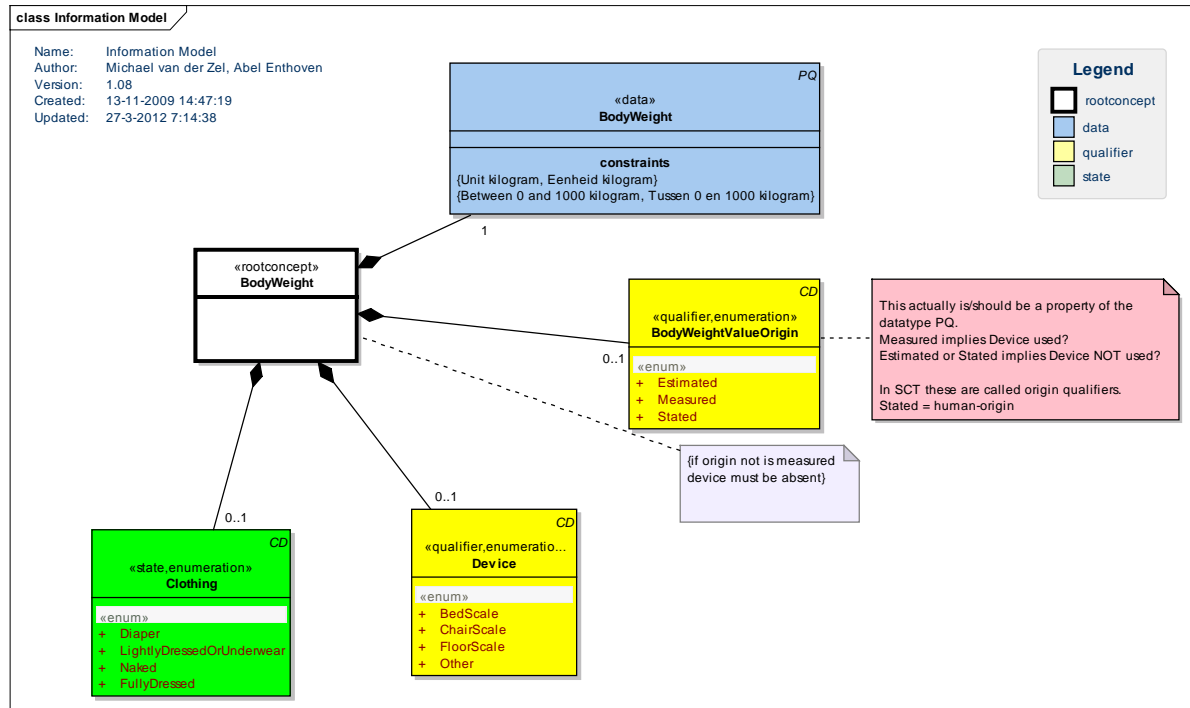# Information Model

BodyWeight **has** Device
Device **is a** *coded description*
Clothing **is a** *coded description*
BodyWeight **has** Clothing
BodyWeight **is a** *physical quantity*
BodyWeight **has** BodyWeight

Concept	Definitie
BodyWeight *SCT: 363808001 body weight measure*	The outcome of the measurement of the body weight of an individual by means of a patient scale.

Concept		Definitie	
BodyWeight *SCT: 27113001 body weight,* *SHB: GEWICHT*		The body weight of the patient.	
Constraint	Unit kilogram		inv:unit='kg'
Constraint	Between 0 and 1000 kilogram		inv:value>=0 and value<1000

Concept	Definitie
BodyWeightValueOrigin *SCT:255395001 origins*	Description for recording whether the weight value is measured, stated, or estimated.
	Estimated *SnomedCT: 414135002* *Estimated*
	Measured *SnomedCT: 258104002* *Measured*
	Stated *SCT:278412004 human-origin*

Concept	Definitie	
Clothing *SCT: 248159006 state of clothing*	Description of the amount of clothing worn at the time of the observation of the weight.	
	Diaper *R4C: R4CDCM1-5*	Person only wears a diaper during the weighing.
	LightlyDressedOrUnderwear *R4C: R4CDCM1-4*	Person has taken of the upper layer of clothing on behalf of the weighing.
	Naked *SNOMED-CT: 248160001* *undressed*	Person wears no clothing during the weighing.
	FullyDressed *Snomed CT: 301306007* *Dressed - appearance*	Person has not taken of his clothing on behalf of the weighing.

Concept	Definitie
Device *SCT: 5042005 patient scale*	Description of scale type. Especially in repeated measuring of the body weight it is of importance to use the same scale.

	BedScale *R4C: R4CDCM1-3*	The person is immobile and is measured with his bed.
	ChairScale *R4C: R4CDCM1-2*	A person is limmited in his mobility and can only sit on a scale with an integrated scale.
	FloorScale *R4C: R4CDCM1-1*	A person is mobile and can stand on a scale himself. The scale can be analogue or digital.
	Other *NullFlavor: OTH different form the other options*	An other type of scale than the types already metioned has been used.

Example Instances

None Available.

Instructions

The body weight is determined with a scale; either digital or analogue. In weighing several points of interest are to be accounted for (Transferpunt VaardigheidsOnderwijs, 2008):

- The rate of mobility of a person. The choice of scale depends on the mobility of a person.
- Whether someone has used the bathroom. Otherwise make sure they do use the bathroom.
- Use the same scale for every measurement and make sure it is adjusted correctly;
- Every time you weigh a person make sure he wears the same, light, clothes. When weight is a critical factor, weigh only wearing underwear;
- Weigh a person on approximately the same time every day.

The weight is noted in the health record as observation.

Interpretation

A first interpretation of body weight is done after notation in the health record. This interpretation is based upon the weight curve related to the aim of the treatment. (Transferpunt VaardigheidsOnderwijs, 2008).
Beside that, a judgement on the quality of the state of nutrition of a person does not only depend on body weight but also on height (Transferpunt VaardigheidsOnderwijs, 2008, www.voedingscentrum.nl, 2008).

Care Process

The determination of body weight of a person is part of the physical examination and can be done once or repeatedly depending on the heath condition of a person. Also body weight is a part of the medical history. Based on body weight, as well as on other observations, a physician can make a decision on treatment.

Example of the Instrument

None Available.

Constraints

None Available.

Issues

General issue in the information model:
There are concepts with a BL datatype. Depending on the answer the code for <data> concept shall be changed.
E.g. SNOMED-CT: 424927000 body weight with shoes (observable entity). If the <state> Wears shoes (BL) is true the code of <data> Body weight<PQ> shall be changed.
It is desirable that there is a Snomed CT code for "Wears Shoes".
Missing code for stated in the class TypeValue.

References

Projects:
eDiabetes, Nictiz
Parelsnoer Initiative
Stichting Health Base, DCM exploration project Spring 2012

Litarature:

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Zorginformatiemodel Doc_Obs_Lichaamsgewicht_V1.1.doc. Verkregen op 12 augustus 2008, van http://www.zorginformatiemodel.nl.

Vocabulary:

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

Functional Model

Link to EHR S FM not available at this time

Traceability to other Standards

None identified at this moment.

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You can suggest additions and changes at: DCMHelpdesk@results4care.nl

Revision suggestions will be looked at and may lead to:

- revised DCM and results if accepted
- variations of the DCM adapted on a local situation.

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