

UKRDC Quality Assurance when using calculated data

Example

1	Your name, job title, work address and email address	Dr James McName, Renal unit, Big Hospital, AB1 2CD james.mcname@nhs.net
2	Name of the derived result	Body Mass Index
3	Abbreviation	BMI
4	Purpose and likely uses	assessing obesity
5	Units of measurement for the result	kg/m ²
6	Data required	patient body weight in kg patient height in m
7	The calculation described in normal mathematical notation and if necessary in words.	body weight (kg) / height (m) ²
8	Number of decimal places to be displayed (eg 2 or same as the longest raw data)	1
9	Should normal arithmetic rounding rules be applied (Y or explain what you need)	Y
10	Reference range	18.5-24.9
11	A range of implausible results (that suggests an error eg negative body weight)	<5 >640 These are clearly ridiculous but are based on Guinness book of records.
12	Any constrains on its use (eg age, sex, renal function, only applies to, does not apply to ...). If the same function is served using different equations in different circumstances, seek help from an expert in that area and submit a request that will useful to as wide a range of patients as possible. Remember in particular the requirements of paediatrics.	Imperial units are not supported body weight must be in kg height must be in m Note to programmer – weight may be reported in cm body weight should ideally be at optimal hydration. for HD patients use post HD weight calculate and display only for patients >= 18 years of age

	<p>If using other time related data, how far back or forwards can we look for a usable data? eg mean art BP needs Syst&DiasBP at the same time (or wave form analysis) while it might be OK to calculate a BMI using a current weight and a previously recorded height.</p> <p>If you request a running summary eg a time averaged result, specify all the rules.</p>	Need help from Heather here re paed
13	<p>Validation rules other than simply out of range. ie an explanation of how the UKRDC validation software could spot and report unusual or unlikely result.</p> <p>You don't need to suggest validation for the raw data being use unless they are also being added to the UKRDC for the first time.</p>	For patients with oedema or dehydration or following amputations, the calculations can still be done but the results must be interpreted with caution.
14	<p>Action if some of the data required are missing? eg leave blank</p>	<p>Only calculate in relation to a recorded body weight. In HD patients use post HD weight qv PD patients will record their weight when drained out If a patient's height is not recorded on the same day as their weight, the nearest height available ≤ 720 days before or after the date of the weight can be used provided that results are not used for an adult calculation for a time when the patient was < 18 years of age.</p> <p>Note that if the patient had not reached their adult height by the age of 18, this rule could result in an apparent change in the BMI if an calculation which relied on a height recorded some time ago is refreshed when an up to date height is recorded.</p> <p>Note, this is not intended to be a real rule, it is just an example of how carefully such rules need to be considered before use. If possible, keep it simple. Complex rules can be added for research purposes if required.</p>
15	A reference to a publication that documents	History from NDT

	the calculation with URL	<p>History http://ndt.oxfordjournals.org/content/23/1/47</p> <p>Some maths Scaling of human body mass with height: the body mass index revisited. MacKay, N ,Journal of Biomechanics 2010 :43:4 :764 -766 http://dx.doi.org/10.1016/j.jbiomech.2009.10.038</p> <p>LOINC http://s.details.loinc.org/LOINC/39156-5.html?sections=Comprehensive</p> <p>SNOMED CT http://browser.ihtsdotools.org/?perspective=full&conceptId1=60621009&edition=uk-edition&release=v20160401&server=https://browser-aws-1.ihtsdotools.org/api/snomed&langRefset=900000000000508004</p> <p>WiKi – all the usual health warnings but it is quite a good account. https://en.wikipedia.org/wiki/Body_mass_index</p>
16	A URL address for a web page about this topic that will be useful to a clinician	<p>NICE guideline CG43 Nov 2014 https://www.nice.org.uk/guidance/cg189/evidence/obesity-update-full-guideline-193342429</p>
17	A URL address for a web page about this topic that will be useful to a patient	<p>NHS http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx</p>
18	If not you, suggest a UK expert who could advise us on any changes required in the future eg new versions of the formula.	<p>Prof Sums big.sums@nhs.net</p>
19	Supply worked examples to illustrate the calculation and any important constraints you have set	<p>77 kg 190 cm = 1.9 m BMI 21.3 kg/m²</p>

20	Add any other important information particularly notes for the IT expert who will write the code. Mention for example if there are any obvious traps, where rounding of numbers is not permitted (eg drug dose)	patient height may be in cm post HD weight may not be labelled
	The UKRTC will fill in the details in the next 4 rows	
21	LOINC Long Name	Body mass index (BMI) [Ratio] BMI
22	LOINC Code	39156-5
23	SNOMED CT Fully Specified Name	Body mass index (observable entity)
24	SNOMED CT Concept id	60621009

File UKRDC_request_new_calculated_data_example.doc
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