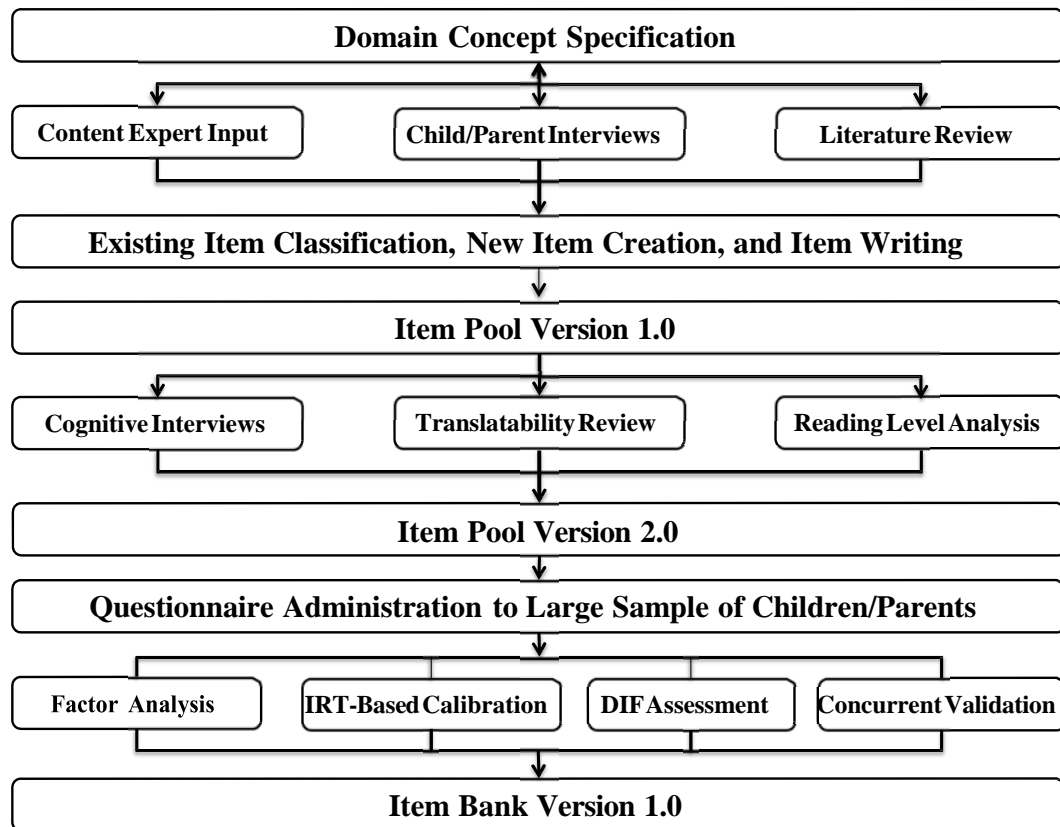


## Technical Specifications – Pediatric Global Health (PGH-7) Measure

The PGH-7 development process followed a mixed-methods approach, which has been published (Forrest, Bevans, Tucker, et al., 2012).



**Figure 1.** Methodological Approach for Developing the PGH-7

The goal of PGH-7 development was to create an item bank that was conceptually equivalent to the adult global health measure (Hays, Bjorner, Revicki, et al., 2009) and would represent a child's overall health. We started with 18 items, five of which are identical to those administered in the PROMIS Adult Global Health Measure. The five items selected from the adult PROMIS global health scale were considered to be understandable and appropriate for youth aged 8-17 years. The remaining 13 items were derived from one of two validated instruments: the Healthy Pathways Child Report Scales (HP-CRS; Bevans, Riley, Forrest, 2010) or the Children's Health and Illness Profile – Adolescent Edition (CHIP-AE; Starfield, Riley, Green, et al., 1995). Items were pruned based on qualitative (cognitive interviews with children) and quantitative (factor analysis and IRT modeling) assessments. The final seven items are shown in Table 1.

**Table 1. The 7 Items in the Pediatric Global Health Measure**

<b>ITEM ID</b>	<b>CHILD REPORT ITEM</b>	<b>RESPONSE CATEGORIES</b>	<b>SOURCE</b>
Global01	In general, would you say your health is:	Excellent - Very good – Good – Fair - Poor	PROMIS – Adult Global Health
Global02	In general, would you say your quality of life is:	Excellent - Very good – Good – Fair - Poor	PROMIS – Adult Global Health
Global03	In general, how would you rate your physical health?	Excellent - Very good – Good – Fair - Poor	PROMIS – Adult Global Health
Global04	In general, how would you rate your mental health, including your mood and your ability to think?	Excellent - Very good – Good – Fair - Poor	PROMIS – Adult Global Health
PedGlobal2	How often do you feel really sad?	Never – Rarely – Sometimes – Often - Always	Healthy Pathways, Child Report Form
PedGlobal5	How often do you have fun with friends?	Never – Rarely – Sometimes – Often - Always	Healthy Pathways, Child Report Form
PedGlobal6	How often do your parents listen to your ideas?	Never – Rarely – Sometimes – Often - Always	Healthy Pathways, Child Report Form

Details of the cognitive interviews and quantitative assessments are presented in the validity section of the PGH-7 report.

**Instructions for Raw Score/Scale Score Look-up Tables**

Each question has between two and five response options ranging in value from one to five. To find the total raw score for a form with all questions answered, sum the values of the response to each question. All questions must be answered in order to produce the most valid summed score.

A score can be approximated if a participant skips a question. If items are missing, first check how many items were answered. Confirm that 50 percent of items were answered. After confirming that enough responses were provided, sum the response scores from the items that were answered (not including any screening questions). Multiply this sum by the total number of items in the form. Finally, divide by the number of items that were answered. For example, if a respondent answered 7 of 14 questions and answered all items with the second lowest response option (2), you would sum all responses (14), multiply by the number of items in the form (14) and divide by the number of items that were answered (7). Here  $(14 \times 14) / 7 = 28$ . If the result is a fraction, round up to the nearest whole number. This is a pro-rated raw score.

Again, the formula is:

$$\frac{(\text{Raw sum} \times \text{number of items})}{\text{Number of items that were actually answered}}$$

Locate the applicable score conversion table and use this table to translate the total raw score or pro-rated score into a T-score for each participant. The T-score rescales the raw score into a standardized score with a mean of 50 and a standard deviation (SD) of 10. Therefore a person with a T-score of 40 is one SD below the mean.

For pro-rated scores, this calculation assumes that responses are missing at random. This isn't always true. Therefore, use caution when interpreting the final pro-rated T-score.

**Important:** A higher PROMIS T-score represents more of the concept being measured. For negatively-worded concepts like "pain," a T-score of 60 is one SD worse than average. By comparison, a pain T-score of 40 is one SD better than average.

The sum-score to T-score conversion table is shown in Table 2 on the next page.

**Table 2. Scoring Table: Sum Score Conversion to T-scores**

Full Bank Sum Score to T-Score Conversion Table		
Raw	Scale	SE
7	16.0	3.4
8	17.1	3.6
9	18.3	3.7
10	19.7	3.8
11	21.2	3.8
12	22.8	3.7
13	24.4	3.6
14	26.1	3.6
15	27.6	3.5
16	29.2	3.5
17	30.8	3.5
18	32.4	3.6
19	34.0	3.6
20	35.6	3.6
21	37.2	3.6
22	38.8	3.6
23	40.4	3.6
24	42.1	3.7
25	43.9	3.7
26	45.7	3.6
27	47.5	3.6
28	49.2	3.6
29	51.1	3.7
30	53.3	3.9
31	55.7	4.2
32	58.3	4.5
33	61.1	4.9
34	64.2	5.4
35	67.5	6.1

## References

Bevans KB, Riley AW, Forrest CB. Development of the healthy pathways child - report scales. *Qual Life Res* 2010; 19(8):1195-214.

Forrest CB, Bevans KB, Tucker C, et al. Commentary: The patient reported outcome measurement information system (PROMIS(R)) for children and youth: Application to pediatric psychology. *J Pediatr Psychol* 2012; 37(6):614-21.

Hays RD, Bjorner JB, Revicki DA, et al. Development of physical and mental health summary scores for the patient-reported outcomes measurement information system (PROMIS) global items. *Qual Life Res* 2009; 18(7):873-80.

Starfield B, Riley AW, Green BF, et al. The adolescent child health and illness profile. A population-based measure of health. *Med Care* 1995; 33(5):553-66.