



## STEP 5.1: Calculate the core PHDS quality measures specific to certain aspects of care

### ➔ What is the purpose of this step?

The purpose of this step is to construct child-level quality measures based on the PHDS responses. The scores can then be analyzed for specific groups.

#### In this step you will:

- Learn about the core PHDS quality measures.
- Recode item-level survey responses for each child.
- Calculate child-level, composite PHDS quality measures.
- Specify and assign "threshold level of quality" cut-points to each measure and calculate child-level versions of these quality measures.



### Guidelines and Issues to Consider

- Learn about the core PHDS quality measures.

There are 12 core PHDS quality measures.

Each measure summarizes information from between one and 18 individual PHDS items and assesses individual components of recommended preventive and developmental care.<sup>1</sup> The PHDS quality measures are scored on a 0–100 scale, where 0 indicates that recommended care is not received and 100 indicates that all aspects of care were received.

It is important to remember that the ProPHDS is a reduced-item version of the PHDS, therefore not all of the quality measures are in this shortened tool.

---

<sup>1</sup> More information about the reliability and validity quality measures based on the PHDS items can be found in the *Pediatrics* articles and Commonwealth Fund report listed in Step 1.

**The 13 core PHDS quality measures are:**

1. Anticipatory guidance and parental education provided by doctors or other health care providers.
2. Assessment of parent concerns about their child's learning, development, and behavior.
3. Provision of specific information to address parental concerns.
4. Follow-up for children at risk for developmental, behavioral, or social delays.
5. Administration of a standardized, parent-completed developmental and behavioral screening tool.
6. Assessment of psychosocial issues in the family.
7. Assessment of smoking, substance abuse, and safety in the family.
8. Provision of family-centered care that respects, listens to, and partners with parents.
9. Coordination of care for children requiring multiple types of health care services or seeing more than one health care provider (items included in the PHDS only).
10. Helpfulness of care provided to parents (items included in the PHDS only).
11. Effect of care provided on parental confidence (items included in the PHDS only).
12. Provision of written or other types of health information to parents on caring for their child, preventing injuries, and ensuring optimal development (items included in the PHDS only).
13. Provision of information about resources in the community for parents.

**Table 5.1** provides a detailed description of the individual items that go into each of the 12 quality measures.

**Table 5.1: PHDS Items Included in Each Quality Measurement Topic**

Quality Measure	Topics Included in Quality Measure	PHDS/ ProPHDS- Survey Items	Number of Individual Items
<p><b>1. Anticipatory Guidance and Parental Education from Doctor or Other Health Care Providers (AGPE)<sup>2</sup></b></p>	<p>Assesses whether a core subset of recommended anticipatory guidance topics were discussed with child's health provider and if not, whether the parent wished topics had been discussed <u>or</u> if he/she already had information about the topics and did not need to discuss them.</p> <p><i>Age-Specific Topics:</i></p> <p><b><u>3–9 Months:</u></b> What parents can do to help their child grow and learn, behaviors to expect, breastfeeding, food and feeding, sleeping positions and sleep areas, night waking and fussing, how child communicates, what child understands, how child responds to others, burn avoidance, car seats, house safety, importance of picture books/reading, TV watching, and childcare.</p> <p><b><u>10–18 Months:</u></b> What parent can do to help child grow and learn, behaviors to expect, vitamins and food, bedtime routines, words and phrases child uses and understands, preventing bottle mouth, child's independence, guidance and discipline techniques, parental education about toilet training, car seats, house safety, what to do if child swallows certain kinds of poisons, reading to child, TV watching, childcare.</p> <p><b><u>19–48 Months:</u></b> What parent can do to help child grow and learn, behaviors to expect, nutrition and eating habits, bedtime routines, toilet training, words and phrases child uses and understands, how child gets along with others, guidance and discipline techniques, ways to teach child about dangerous situations, car seats, house safety, what to do if child swallows certain kinds of poisons, reading to child, TV watching, childcare.</p>	<p><b>Q7, Q8/ Q1, Q2</b></p> <p><b>Q9, Q10/ Q1, Q2</b></p> <p><b>Q11, Q12/ Q1, Q2</b></p>	<p>16</p> <p>17</p> <p>15</p>

<sup>2</sup> The items related to anticipatory guidance and parental education are different depending on the age of the child and as described in Step 2.4.

**Table 5.1: PHDS Items Included in Each Quality Measurement Topic (Continued)**

Quality Measure	Topics Included in Quality Measure	PHDS/ ProPHDS- Survey Items	Number of Individual Items
2. <b>Ask About Concerns</b>	Assesses whether providers ask parents whether he/she has concerns about child's learning, development, and behavior.	Q21/Q5	1
3. <b>Address Parental Concerns</b>	Assesses whether parents with concerns about their child's learning, development, and behavior received specific information addressing their concerns. (Note: Items derived from the PEDS© used to identify concerned parents [PHDS Q18-Q20, ProPHDS Q4])	Q22/Q6	1
4. <b>Follow-Up for Children at Risk for Delays</b>	Assesses whether children who are determined to be at significant risk for developmental, social, or behavioral delays (Note: Items derived from the PEDS© used to identify children at sig. risk [PHDS Q18–Q20, ProPHDS Q4])* had appropriate follow-up health care. Follow-up items include testing of child's learning development and behavior, referral to another doctor or speech/language testing, and/or whether a doctor or other health provider noted a concern that should be watched carefully.	Q23/Q7	4
5. <b>Administration of a Standardized Developmental and Behavioral Screening (SDBS) Tool</b>	Whether the child's health care provider administered a parent-completed standardized developmental and behavioral screening tool.	Q26, Q26a, Q26b/ Q9, Q9a, Q9b	1 stem, 2 follow-up
6. <b>Assessment of Psychosocial Issues in the Family</b>	Assesses whether health care providers asked the parent about their own psychosocial well-being, including depression, emotional support, changes or stressors in the home, and how parenting is working. (Note: This can be through the use of a parent-completed questionnaire)	Q27 c,d; Q28 c,d/ Q10 b-d	4/3
7. <b>Assessment of Smoking, Substance Abuse, and Safety in the Family</b>	Assesses whether health care providers asked the parent about smoking, substance abuse, safety, and firearms in the home. (Note: This can be through the use of a parent-completed questionnaire)	Q27 a,b; Q28 a,b/ Q10 a,e	4/2
8. <b>Family-Centered</b>	Parent reports that child's health care provider delivers care in a family-centered manner, e.g., understands		

<b>Care</b>	specific needs of child and concerns of parent, builds confidence in the parent, explains things in way the parent can understand, and shows respect for a family's values, customs, and how they prefer to raise their child.	<b>Q13, Q14/ Q3</b>	10/5
<b>9. Care Coordination</b>	Assesses whether children requiring more than one type of health care service received needed help coordinating care.	<b>Q5a/NA</b>	1
<b>10. Helpfulness of Care Provided</b>	Parent report of how helpful information from child's health care providers was in specific areas of parenting such as understanding child's behavior, protecting child from injuries, and helping the parent learn to meet their own needs.	<b>Q15/NA</b>	4
<b>11. Effect of Care on Parental Confidence</b>	Parent report on the effect of care on their confidence in: doing things for child to help him/her grow and learn, protecting child from injuries, addressing special concerns, and managing parenting responsibilities.	<b>Q16/NA</b>	4
<b>12. Health Information</b>	Assesses whether information was provided outside/inside the health care provider's office (mail, clinic pamphlets, videos, etc.) on the following: safety, health care utilization, developmental information.	<b>Q17/NA</b>	3
<b>13. Provision of information about resources in the community for parents</b>	Assesses whether information was provided by the child's doctor or other health providers about resources in the community for the parent.	<b>Q8i/Q2i Q10i/Q2i Q12i/Q2i</b>	1

\*See Table 5.4 for information on determining if a child is at high or moderate risk for developmental, behavioral, or social delays.

For each child, recode item-level survey responses.

The quality measures are scored for each child whose parent completed the survey. The first step in creating the quality measure is to recode each item that goes into the quality measure into a 0–100 value indicating whether quality of care is received.

### Tip from the Field

**CAHMI recommends** that you recode each individual item into a 0–100 value rather than transform the composite quality measure to a 0–100 value. We recommend this approach because many users will examine item-level findings in addition to the quality measure findings (e.g., the number of children whose parents were asked if they were experiencing symptoms of depression).

The following is the recommended process for recoding the individual survey items:

#### **Recoding Step 1:** Map Items to Quality Measures

Map the items to each of the corresponding quality measures, as shown in **Table 5.2** on the following page. Remember: If you added questions and re-numbered the survey, the question numbers in your survey may differ.

#### **Recoding Step 2:** Create New Items and Recode Response Options Used to Score Quality Measures

Assign a quantitative value to each survey item response options (e.g., "yes" vs. "no"). Recode the response options for each survey item used in a quality measure so that the values fall between 0 and 100, where zero indicates quality health care was not received and 100 indicates quality health care was received. Be sure not to recode the original items in the data set. Instead, you should create new items in case you make a mistake. Use Table 5.2 as a guide to rescore each of the items. Missing responses are NOT given a valid score and are NOT included in the calculation of the quality measure.

**Important Note:** There are two versions shown for how to score the anticipatory guidance and parental education (AGPE) quality measure presented in **Table 5.2**.

- Version A is the average proportion of recommended topics discussed by the child's health care provider. This measure answers the question of how many recommended AGPE topics on average are discussed and whether parent questions were answered.
- Version B is the average proportion of topics for which the parents had their informational needs met. This measure assesses the number of topics for which the parent reported "Yes, the topic was discussed," or "No, the topic was not discussed, but I wished it had been discussed." This measure answers the question of whether parents are having their informational needs met on recommended anticipatory guidance and parental education topics.

The version you decide to use should be based on your research questions and goals for the study.

**CAHMI recommends** that you create both versions, as each is valid and valuable and each one answers different questions about the level of care provided.

**Table 5.2: Item-Level Recodes for Core PHDS Quality Measures**

Quality Measure	PHDS/ ProPHDS	Original Response Options	Value Assigned to Response		
<p><b>1. Anticipatory Guidance and Parental Education from Doctor or Other Health Care Providers</b></p> <p><i>Version A: Average proportion of topics parents report were <u>discussed</u>.</i></p>	<p><b>Q7, Q8, Q9, Q10, Q11, Q12/</b></p> <p><b>Q1, Q2</b></p>	<p>1=Yes, the topic was discussed</p> <p>2=Yes, the topic was discussed but my questions were not answered completely</p>	<p><b>100</b></p>		
		<p>3=No, but I wish we had talked about that</p> <p>4=No, but I already had information about the topic and did not need to talk about it any more</p>	<p><b>0</b></p>		
		<p><i>Version B: Average proportion of topics parents had their <u>informational needs met</u>.</i></p>	<p>Same as above</p>	<p>1=Yes, the topic was discussed</p> <p>4=No, but I already had information about the topic and did not need to talk about it any more</p>	<p><b>100</b></p>
				<p>2= Yes, the topic was discussed but my questions were not answered completely</p> <p>3= No, but I wish we had talked about that</p>	<p><b>0</b></p>
<p><b>2. Ask About Parental Concerns About Their Child's Learning, Development, and Behavior</b></p>	<p><b>Q21/</b></p> <p><b>Q5</b></p>			<p>1 = Yes</p>	<p><b>100</b></p>
		<p>2 = No</p>	<p><b>0</b></p>		

**Table 5.2: Item-Level Recodes for Core PHDS Quality Measures (Continued)**

3. Address Parental Concerns	Q22/  Q6	Only recode the item for children whose parents responded "yes" or "a little" to one or more of the PEDS© items. See Table 5.1 for more detail.
		1 = Yes <b>100</b>
		2 = No <b>0</b>
4. Follow-Up for Children at Risk for Developmental Delays	Q23/  Q7	Only recode the items for children identified as at high or moderate risk for delays based on the PEDS© items. See text following Table 5.2 for additional specifications.
		1 = Yes <b>100</b>
		2 = No <b>0</b>
5. Administration of a Standardized Developmental and Behavioral Screening (SDBS) Tool	Q26, Q26a, Q26b/  Q9, Q9a, Q9b	1 = Yes <b>100</b>
		2 = No <b>0</b>
6. Assessment of Psychosocial Issues in the Family	Q27 c,d; Q28 c,d/  Q10 b-d	1 = Yes <b>100</b>
		2 = No <b>0</b>
7. Assessment of Smoking, Substance Abuse, and Safety in the Family	Q27 a,b; Q28 a,b/  Q10 a,e	1 = Yes <b>100</b>
		2 = No <b>0</b>
8. Family-Centered Care	Q13, Q14/  Q3	1 = Never <b>0</b>
		2 = Sometimes <b>0</b>
		3 = Usually <b>100</b>
		4 = Always <b>100</b>
9. Care Coordination	Q5a/  NA	1 = Yes <b>100</b>
		2 = No <b>0</b>
		3 = Child did not get care from different providers or use more than one service <i>Missing</i>
10. Helpfulness of Care Provided	Q15/  NA	1 = Very helpful <b>100</b>
		2 = Helpful <b>100</b>
		3 = Somewhat helpful <b>0</b>
		4 = Not at all helpful <b>0</b>

		5 = We did not discuss	<i>Missing</i>
<b>11. Effect of Care Provided on Parental Confidence</b>	<b>Q16/</b>	1= I feel a lot more confident	<b>100</b>
	<i>NA</i>	2= I feel a little more confident	<b>100</b>
		3= I do not feel more or less confident	<b>0</b>
		4= I feel less confident	<b>0</b>
<b>12. Health Information</b>	<b>Q17/</b>	1 = Yes	<b>100</b>
	<i>NA</i>	2 = No	<b>0</b>
<b>13. Provision of information about resources in the community for parents</b> <i>Version A: Resources Provided</i>	<b>Q8i/Q2i</b>	1=Yes, the topic was discussed	<b>100</b>
	<b>Q10i/Q2i</b>	2=Yes, the topic was discussed but my questions were not answered completely	
	<b>Q12i/ Q2i</b>	3=No, but I wish we had talked about that	
		4=No, but I already had information about the topic and did not need to talk about it any more	<b>0</b>
<i>Version B: Parents had their informational needs about resources in the community met.</i>	Same as above	1=Yes, the topic was discussed	
		4=No, but I already had information about the topic and did not need to talk about it any more	<b>100</b>
		2= Yes, the topic was discussed but my questions were not answered completely	<b>0</b>
		3= No, but I wish we had talked about that	

#### **Additional Specifications for Item-Level Recodes for Measure #4:**

##### *Follow-Up for Children at Risk for Developmental, Behavioral or Social Delays*

As noted in Table 5.2, this measure (and the individual item-level recodes) is scored only for children identified as at significant risk (high or moderate) for developmental, behavioral, or social delays. Children are identified as "at risk" based on parents' responses to the Parents' Evaluation of Developmental Status© items included in the PHDS/ProPHDS. The PHDS

includes nine items from the PEDS tool; the ProPHDS includes six items from the PEDS tool.

The scoring algorithm presented below is adapted from the Parents' Evaluation of Developmental Status© specifications and approved by Frances Glascoe, Ph.D., for identifying a denominator of children for whom follow-up care should have been received.

Overview of the scoring algorithm for the adapted PEDS© items in the PHDS:

- ⇒ Specific concerns parents have about their children at specific ages can be an indication of a child's risk for developmental, behavior or social delays.
- ⇒ Children whose parents have one or more "indicator" concerns (parent said "yes" or "a little") are identified as being at significant risk. Children whose parents have noted concerns for only one indicator item are at moderate risk for delays. Children whose parents note two or more concerns about indicator items are at high risk for delays.

**Table 5.3** below describes the age-specific "indicator" concerns for the PEDS© items in the PHDS and ProPHDS:

**Table 5.3: Risk Category based on the PEDS© Items in the PHDS/ProPHDS**

Age of Child*	High Risk	Moderate Risk	Low Risk	No Risk
3–17.99 mos.	Parent responded "yes" or "a little" to <b>two or more</b> of the following: <ul style="list-style-type: none"> <li>➤ 18a, 18b (PHDS)</li> <li>➤ 4a, 4b (ProPHDS)</li> </ul>	Parent responded "yes" or "a little" to <b>one</b> of the following: <ul style="list-style-type: none"> <li>➤ 18a-b, 20a with any other concerns for any other PEDS item (PHDS)</li> <li>➤ 4a, 4b, and 4f with any other concern for any other PEDS item (ProPHDS)</li> </ul>	Parent responded "yes" or "a little" to <b>one</b> of the following: <ul style="list-style-type: none"> <li>➤ 18c, 19a-c, 20b-c, 20a only (PHDS)</li> <li>➤ Q4c, 4d, 4f only (ProPHDS)</li> </ul>	Parent responded "not at all" to all PEDS© items
18–35.99 mos.	Parent responded "yes" or "a little" to <b>two or more</b> of the following: <ul style="list-style-type: none"> <li>➤ 18a-c (PHDS)</li> <li>➤ 4a, 4b, 4c (ProPHDS)</li> </ul>	Parent responded "yes" or "a little" to <b>one</b> of the following: <ul style="list-style-type: none"> <li>➤ 18a-c (PHDS)</li> <li>➤ 4a, 4b, 4c (ProPHDS)</li> </ul>	Parent responded "yes" or "a little" concern to <b>one</b> of the following: <ul style="list-style-type: none"> <li>➤ 19 a-c, 20 a-c</li> <li>➤ 4d, 4e, 4f (ProPHDS)</li> </ul>	Parent responded "not at all" to all PEDS© items
36–48 mos.	Parent responded "yes" or "a little" to <b>two or more</b> of the following: <ul style="list-style-type: none"> <li>➤ 18a-c, 19b (PHDS)</li> <li>➤ 4a, 4b, 4c, 4d (ProPHDS)</li> </ul>	Parent responded "yes" or "a little" to <b>one</b> of the following: <ul style="list-style-type: none"> <li>➤ 18a-c, 19b (PHDS)</li> <li>➤ 4a, 4b, 4c, 4d (ProPHDS)</li> </ul>	Parent responded "yes" or "a little" to <b>one</b> of the following: <ul style="list-style-type: none"> <li>➤ 19a, 19c, 20a-c (PHDS)</li> <li>➤ 4e, 4f (ProPHDS)</li> </ul>	Parent responded "not at all" to all PEDS© items

### Important Note

This four category age breakout is different than the age breakout for the age-specific versions of the survey (3–9.99 months, 10–18.99 months, 19–45.99 months). Therefore, you need to be sure to use the child's age, in months, that was collected at the time of sampling and described in Step 2.3.

- Calculate child-level, composite PHDS quality measures.

Once you have finished recoding the individual items, you are ready to use these variables to calculate a composite score for each quality measure summarizing the item-level scores for each child included in the study.

The scoring methods used for each of the quality measures are described in Table 5.3 and followed by examples so you can see exactly how the measure is calculated.

**CAHMI recommends** that you only score a quality measure for those children whose parents answered at least **half** of the items that are included in the quality measure.

If a child's parent answered less than half of the items in that measure, their score is considered missing.

If a measure has an odd number of items, round up.

**Table 5.4: Scoring Algorithm for Core PHDS Quality Measures**

Quality Measure	Type of Measure	What the Measure Tells You	How Quality Measure Is Calculated <i>(Note: For all measures, the denominator only includes those who answered at least half of the items in the scale)</i>
<p><b>1. Anticipatory Guidance and Parental Education (AGPE)</b></p> <p><i>Version A: Average proportion of topics parents report were <u>discussed</u>.</i></p>	<p><b>Mean</b></p>	<p>Avg. proportion of rec. topics discussed.</p>	<p><b>Numerator:</b> Number of "yes, item was discussed" responses.</p> <p><b>Denominator:</b> Number of items parent answered.</p>
<p><i>Version B: Average proportion of topics on which parents had their <u>informational needs met</u>.</i></p>	<p><b>Mean</b></p>	<p>Avg. proportion of rec. topics on which parents had their informational needs met.</p>	<p><b>Numerator:</b> Number of "yes, item discussed" or "no, but had info and did not want to discuss it" responses.</p> <p><b>Denominator:</b> Number of items parent answered.</p>
<p><b>2. Ask About Parental Concerns About Their Child's Learning, Development, and Behavior</b></p>	<p><b>Proportion</b></p>	<p>Proportion of children whose parents were asked about their concerns.</p>	<p><b>Numerator:</b> A "yes" response.</p> <p><b>Denominator:</b> Number of items parent answered.</p>
<p><b>3. Address Parental Concerns</b></p>	<p><b>Proportion</b></p>	<p>Proportion of children whose concerned parent received info.</p>	<p><b>Numerator:</b> A "yes" response.</p> <p><b>Denominator:</b> Number of items parent answered.</p>

**Table 5.4: Scoring Algorithm for Core PHDS Quality Measures (Continued)**

<p><b>4. Follow-Up for Children at Risk for Developmental, Behavioral or Social Delays</b></p>	<p><b>Proportion</b></p>	<p>Proportion of children at risk who received follow-up care.</p>	<p><b>Numerator:</b> Risk-specific scoring. Moderate Risk: Parent said "yes" at least once to any of follow-up questions (a-d). High Risk: Parent said "yes" to a, b, or d. <b>Denominator:</b> Parent who responded to 2/4 of the items and whose child is at high/moderate risk.</p>
<p><b>5. Administration of a Standardized Developmental and Behavioral Screening (SDBS) Tool</b></p>	<p><b>Mean</b></p>	<p>Proportion of children whose parents completed an SDBS.</p>	<p><b>Numerator:</b> Whether parent said yes to all three items. <b>Denominator:</b> Parent responded to all three items.</p>
<p><b>6. Assessment of Psychosocial Well-Being of Parent(s) in the Family</b></p>	<p><b>Mean</b></p>	<p>Avg. proportion of rec. topics assessed.</p>	<p><b>Numerator:</b> Number of "yes, item was discussed" responses. <b>Denominator:</b> Number of items parent answered.</p>
<p><b>7. Assessment of Smoking and Substance Use in the Family</b></p>	<p><b>Mean</b></p>	<p>Avg. proportion of rec. topics assessed.</p>	<p><b>Numerator:</b> Number of "yes, item was discussed" responses. <b>Denominator:</b> Number of items parent answered.</p>
<p><b>8. Family-Centered Care (FCC)</b></p>	<p><b>Mean</b></p>	<p>Avg. proportion of rec. aspects of FCC regularly received.</p>	<p><b>Numerator:</b> Number of "usually or always" responses. <b>Denominator:</b> Number of items parent answered.</p>
<p><b>9. Care Coordination (CC)</b></p>	<p><b>Proportion</b></p>	<p>Proportion of children whose parents received CC.</p>	<p><b>Numerator:</b> A "yes" response. <b>Denominator:</b> Number of items parent answered.</p>

**Table 5.4: Scoring Algorithm for Core PHDS Quality Measures (Continued)**

<p><b>10. Helpfulness of Care Provided</b></p>	<p><b>Mean</b></p>	<p>Avg. proportion of topics for which parent reported care was helpful or very helpful.</p>	<p><b>Numerator:</b> Number of "very helpful–helpful" responses. <b>Denominator:</b> Number of items parent answered.</p>
<p><b>11. Effect of Care Provided on Parental Confidence</b></p>	<p><b>Mean</b></p>	<p>Avg. proportion of topics parent reported positive influence on confidence.</p>	<p><b>Numerator:</b> Number of "I feel a lot more confident–I feel a little more confident" responses. <b>Denominator:</b> Number of items parent answered.</p>
<p><b>12. Health information</b></p>	<p><b>Mean</b></p>	<p>Avg. proportion of topics health info. received.</p>	<p><b>Numerator:</b> Number of "yes, item was discussed" responses. <b>Denominator:</b> Number of items parent answered.</p>
<p><b>13. Provision of information about resources in the community for parents</b></p>	<p><b>Proportion</b></p>	<p>Proportion of children whose provide discussed resources in the community (version A) OR Proportion of children whose parents had their information needs met on resources in the community (version B).</p>	<p><b>Version A:</b> <b>Numerator:</b> Number of "yes, item was discussed" responses. <b>Denominator:</b> Number of items parent answered <b>Version B:</b> <b>Numerator:</b> Number of "yes, item discussed" or "no, but had info and did not want to discuss it" responses. <b>Denominator:</b> Number of items parent answered.</p>

### Example 5.1: Health Information Quality Measure

Here is the scoring for Joel, Anne, and Steve for "Health Information." This quality measure includes items 17 a–c.

Their responses were as follows:

Joel:	17a. Yes	17b. No	17c. Yes
Anne:	17a. Yes	17b. Yes	17c. Yes
Steve:	17a. Yes	17b. Missing	17c. Missing

Their responses are given the following values:

Joel:	17a. 100	17b. 0	17c. 100
Anne:	17a. 100	17b. 100	17c. 100
Steve:	17a. 100	17b. No value	17c. No value

Therefore, their scores on the Quality Measure are:

$$\text{Joel: } \frac{\text{Numerator}}{\text{Denominator}} = \frac{100 + 0 + 100}{3} = \frac{200}{3} = \underline{\underline{66.7}}$$

$$\text{Anne: } \frac{\text{Numerator}}{\text{Denominator}} = \frac{100 + 100 + 100}{3} = \frac{300}{3} = \underline{\underline{100}}$$

Steve: No score since he did not answer at least two of the three items included in the quality measure.

### Example 5.2: Helpfulness of Care Provided

Here is the scoring for Ted's answers to the items for "Helpfulness of Care Provided." This measure includes items 15a-d.

Responses and corresponding values:

15a. Somewhat helpful	100
15b. Very helpful	100
15c. Not at all helpful	0
15d. Helpful	100

Ted's score for the quality measure is:

$$\frac{\text{Numerator}}{\text{Denominator}} = \frac{(100 + 100 + 0 + 100)}{4} = 75$$

**Example 5.3: For Follow-Up Children  
at Risk of Developmental, Behavioral, or Social Delays**

Here is the scoring for Jack, Janet, and Chris for "Follow-Up for Children at Risk of Developmental Delay." This measure is comprised of items 24a–d in the PHDS (7 a–d in the ProPHDS) and is scored only for those children who have been identified as being at risk for a developmental delay.

Jack and Janet are both at high risk for developmental delay. Chris and Larry are both at moderate risk for developmental delay.

Their responses were as follows:

Jack (high risk):	24a. Yes	24b. No	24c. Yes	24d. No
Janet (high risk):	24a. No	24b. No	24c. Yes	24d. No
Chris (mod. risk):	24a. No	24b. No	24c. No	24d. No
Larry (mod. risk):	24a. Yes	24b. No	24c. Yes	24d. Missing

Therefore, their scores on the quality measure are:

Jack: **100** (answered "yes" to at least one of the necessary items)

Janet: **100** (answered "yes" to both 24c and 24e)

Chris: **0** (did not answer "yes" to any of the items)

Larry: **100** (answered "yes" to at least one item, even though one item was missing)

- Specify and assign 'threshold level of quality' cut-points to each measure and calculate child-level versions of these quality measures.

Once you have calculated the core PHDS quality measures, it is helpful to identify those children who received a threshold level of care.

The threshold scoring method creates a discrete, binomial measure for each aspect of care and assesses how **many children** received a certain level of an aspect of care.

The quality measures that are proportions are already scored in a way that indicates children who did or did not receive the aspect of care (Measures 2, 3, 4, 5, and 9). The threshold scoring method **recodes the mean quality measures** into a binomial variable, where 100 equals children who received a sufficient level of quality of care and 0 is children who received less than the threshold level of care specified.

**Table 5.4** provides a description of threshold measures that can be created for each of the mean, core PHDS quality measures. These thresholds are based on the following: 1) validity analyses of the cut points for these measures as related to other indicators of health care quality in the PHDS, 2) consensus obtained in interviews with frontline health care providers, system leaders, and advisors to CAHMI. Additional information about

these interviews and the threshold can be found at [www.cahmi.org](http://www.cahmi.org). Lastly, a thorough description of threshold measures based on PHDS items can be found in the Bethell et al. article, "Measuring the quality of preventive and developmental services for young children: national estimates and patterns of clinicians' performance" (*Pediatrics*. 2004 Jun;113(6 Suppl):1973–83).

### **Tip from the Field**

**CAHMI recommends** that you determine the "threshold" level of care based on your own project goals. We recommend that you conduct key stakeholder interviews about the scoring approach you plan to use for each quality measure.

**Table 5.5: Scoring Algorithm for "Threshold Version" of Measures**

Quality Measure	Threshold Score for Quality Measure	Level of Quality Care Threshold Scoring Represents
<p><b>1. Anticipatory Guidance and Parental Education (AGPE)</b></p> <p><i>Version A: Average proportion of topics parents report were <u>discussed</u>.</i></p>	<p>Mean <math>\geq</math> 80</p>	<p>Children whose parents responded that the topic was discussed 80% or more of the AGPE items.</p>
<p><i>Version B: Average proportion of topics on which parents had their informational needs met.</i></p>	<p>Mean=100</p>	<p>Children whose parents had their informational needs met on all AGPE items.</p>
<p><b>2. Ask About Parental Concerns About Their Child's Learning, Development, &amp; Behavior</b></p>	<p>Already a proportion measure</p>	<p>Children whose parents were asked about their concerns.</p>
<p><b>3. Address Parental Concerns</b></p>	<p>Already a proportion measure</p>	<p>Children with concerned parents who got information.</p>
<p><b>4. Follow-Up for Children at Risk for Developmental, Behavioral, or Social Delays</b></p>	<p>Already a proportion measure</p>	<p>Children at risk for developmental, behavioral, or social delays who received follow-up care.</p>
<p><b>5. Administration of a Standardized Developmental and Behavioral Screening (SDBS) Tool</b></p>	<p>Already a proportion measure</p>	<p>Children whose parents completed an SDBS.</p>
<p><b>6. Assessment of Psychosocial Well-Being of Parent(s) in the Family</b></p>	<p>Mean <math>&gt;</math> 0</p>	<p>Children whose parents were assessed for 1 or more topics related to psychosocial well-being.</p>
<p><b>7. Assessment of Smoking and Substance Use in the Family</b></p>	<p>Mean <math>&gt;</math> 0</p>	<p>Children whose parents were assessed for one or more topics related to smoking, substance abuse or safety.</p>
<p><b>8. Family-Centered Care (FCC)</b></p>	<p>Mean = 100.</p>	<p>Children whose parents routinely receive all aspects of family-centered care.</p>

**Table 5.5: Scoring Algorithm for "Threshold Version" of Measure (Continued)**

<b>9. Care Coordination (CC)</b>	Already a proportion measure	Children whose parents received CC.
<b>10. Helpfulness of Care Provided</b>	Mean = 100	Children whose parents reported care provided as helpful or very helpful.
<b>11. Effect of Care Provided on Parental Confidence</b>	Mean = 100	Children whose parents reported care had a positive influence on their confidence.
<b>12. Health information</b>	Mean = 100	Children whose parents got all health information.
<b>13. Provision of information about resources in the community for parents</b>	Proportion=100	Children whose health care providers discussed resources in the community (version A) OR whose parents had their informational needs met on resources in the community (version B).