

Equation 1: Hospital-Level Unit Reliability

To calculate hospital-level unit reliability, we used the following equation:

$$\tau^2 / (\tau^2 + \sigma^2/n)$$

τ^2 = between-hospital variance of means

σ^2 = within-hospital patient-level variance of responses

n = number of responses for the hospital

Equation 2: Internal Consistency Reliability

To calculate Cronbach's coefficient (α), we used the following equation:

$$\alpha = K r / (1 + (K-1) r)$$

K = the number of items

r = the average correlation among the items

Table 2: Hospital-Level Unit Reliability Estimates of Child HCAHPS Composites and Single Items

Composite and Single Item Measures	Hospital-level Unit Reliability at N=300
Nurse-parent communication	.80
Doctor-parent communication	.73
Communication about medicines	.91
Informed about child's care	.79
Privacy with providers	.82
Preparing to leave hospital	.87
Informed in Emergency Room	.74
Nurse-child communication	.77
Doctor-child communication	.84
Involving teens in care	.66
Mistakes and concerns	.90
Call button	.78
Child comfort	.91
Child pain	.79
Cleanliness	.86
Quietness	.90
Overall rating	.89
Recommend hospital	.93

Table 3: Internal Consistency Reliability of Child HCAHPS Composites

Composites	# Items	Alpha*
Nurse-parent communication	3	.93
Doctor-parent communication	3	.92
Communication about medicines	4	.73
Informed about child's care	2	.87
Preparing to leave hospital	5	.89
Nurse-child communication	3	.88
Doctor-child communication	3	.90
Involving teens in their care	3	.71
Mistakes and concerns	2	.41
Child comfort	3	.74

*Cronbach's Alpha was calculated from case-mix-adjusted hospital-level means for each hospital for each item in each composite.