

*Hospital Report 2007: Acute Care*

**Pediatric Patient Satisfaction Technical Summary**

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## Methodology

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### Summary

As pediatric inpatients often have different needs and care than their adult counterparts, a separate set of pediatric patient satisfaction indicators are included in the report. The pediatric patient satisfaction analysis in *Hospital Report: Acute Care 2007* is the first in the series to report results collected using the National Research Corporation (NRC)+Picker's pediatric acute care questionnaire, specifically targeted to the pediatric patient experience. Pediatric patients surveyed using the adult acute care questionnaire are not included in this analysis, and as such, those hospitals that serve and survey a large proportions of pediatric patients with NRC+Picker's adult questionnaire will not be included in these results.

Approximately 4,756 individuals from 10 participating hospitals in Ontario were sampled for the 2005-2006 Pediatric Acute Care Patient Satisfaction analysis. Eligibility for inclusion in the sample was restricted to patients discharged between April 2005 and March 2006, who were between the ages of 0 and 17, who were not: deceased, psychiatric patients, infants less than 10 days old, patient who did not have an overnight stay, women who had stillbirths, or patients with no fixed address.

Approximately 37% of eligible sampled individuals returned their questionnaires.

### Sampling Plan

Each participating hospital corporation and NRC+Picker collaboratively established a sampling plan. Factors influencing the agreed-upon sampling plan included budget, achieving reasonable response rates, and which groups (units, programs, sites, etc.) within the corporation were of primary interest. A minimum of 100 valid survey responses was required for a hospital's results to be

- i) displayed in the publicly released Executive Summary;
- ii) subject to performance allocations (e.g. "above average", "below average") in private, on-line reporting (e-Scorecard).

Hospitals were then charged with the responsibility of sending patient data files to NRC+Picker every month. For *Hospital Report 2007: Acute Care*, data was collected for all 12 months of the 2005-2006 fiscal year. Then, according to each hospital's sampling plan, a random sample was drawn from the patient data files, and surveys were mailed.

### Mailing of Questionnaires

Included in each patient mailing was an explanatory cover letter, a return envelope (postage-paid), and the questionnaire itself. The first mailing went out within a couple of weeks of NRC+Picker's reception of a hospital's monthly patient data file. To increase

response rates, there was a second wave of mailings to patients whose first questionnaires were not returned within three weeks of the original mailing date.

A total of 4,756 questionnaires were sent in 2005-2006. Of these, 1,751 (approx. 36.8%) were returned, met all inclusion criteria, and are included in the analysis.

### ***Inclusion/Exclusion Criteria***

Although many hospitals provided patient data files for general medicine and surgery pediatric patients only, some also included obstetrics and psychiatry records. In order to provide hospitals with comparable data, psychiatry and obstetrics patients were excluded, as was done in previous years of the acute care Hospital Report. Obstetric and psychiatry exclusions have been made based on the Case Mix Group™ (CMG) reported by the hospital. In many cases, the CMG data was not included in the patient data file. Obstetric and psychiatry exclusions were also made using the NRC variables 'Service Indicator' (which identifies the record as being either a medical, surgical, pediatric or obstetric case) and 'Discharge Unit' (this was only useful when hospitals chose to identify the unit by name, rather than by code). It is important to note that the CMG, Service Indicator, and Discharge Unit fields were all optionally reported fields, and that they were left blank in a number of records, making it distinctly possible that some obstetric and psychiatric cases went unidentified. Though we have made every effort to positively identify and exclude obstetric and psychiatry cases, we cannot conclusively say that we have removed them all.

Only patients aged between 0 and 17 during their hospital stay were eligible for inclusion in the study.

Questionnaires that were returned, but that did not have a single valid response, were treated as non-responses and dropped from the analysis.

For a record to be included in the analysis, it had to have valid responses for at least half of the evaluative questions that were used to build the indicators. This amounts to 19 valid responses out of 37 evaluative questions. Note that it is at this stage in the exclusions that the volumes were calculated to determine whether a hospital passed the 100-case volume screen.

Finally, if the answer to the question "Who complete this survey?" was the patient, the record was excluded from the analysis, as the questionnaire itself is written in such a way that it is clearly intended to be completed by a parent or guardian.

## ***Developing the Indicators***

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Thirty-Seven of the Pediatric Acute Care survey questions were combined to form eight indicators for the release in Hospital Report 2007: Acute Care, and on the Hospital Report E-scorecard ([www.hospitalreport.ca](http://www.hospitalreport.ca)).

Discussions among team members, expert opinion from hospital staff surveys; previous experience from the development of the Acute Care indicators; knowledge of pre-existing NRC+Picker Dimensions of Pediatric Patient Satisfaction; and the psychometric properties of certain questions, lead to the grouping of items into eight indicators. See Appendix B for a brief psychometric summary of the following dimensions of pediatric patient satisfaction.

### **The Eight Indicators used in Hospital Report 2007: Pediatric Acute Care Patient Satisfaction**

- 1. Overall Impressions:** Parents' views of the overall hospital experience, including the overall quality of care and services received at the hospital.

#### **Survey Questions:**

- Do you feel you had a doctor or nurse that had a good understanding of your child's condition and treatment?  
Avez-vous l'impression que vous avez eu un médecin ou une infirmière qui avait une bonne compréhension de l'état de santé de votre enfant et de ses traitements?
- How would you rate the hospital's policy for visiting and staying with your child?  
Comment évalueriez-vous la politique de l'hôpital quant aux droits de visite et de demeurer auprès de votre enfant?
- Overall, how would you rate the care your child received at the hospital?  
Dans l'ensemble, comment évalueriez-vous les soins que votre enfant a reçus à l'hôpital?
- Would you recommend this hospital to your family and friends?  
Recommanderiez-vous cet hôpital aux membres de votre famille ou à vos amis?

- 2. Access to Care and Services:** Evaluates the extent to which parents felt they could speak to or get help from people who worked in the hospital when they needed it; and whether they felt their child got the care and services they needed.

#### **Survey Questions:**

- Were the doctors available to answer your questions or concerns when you needed them?  
Est-ce que les médecins étaient disponibles lorsque vous aviez besoin d'eux pour répondre à vos questions ou préoccupations?
- How would you rate the availability of the doctors?  
Comment évalueriez-vous la disponibilité des médecins?

- Were the nurses available to answer your questions or concerns when you needed them?  
Est-ce que les infirmiers/infirmières étaient disponibles lorsque vous aviez besoin d'eux pour répondre à vos questions ou préoccupations?
- How would you rate the availability of the nurses?  
Comment évalueriez-vous la disponibilité des infirmières?
- Did your child receive the care he or she needed when he or she needed it?  
Est-ce que votre enfant a reçu les soins dont il avait besoin lorsque ceux-ci étaient requis?
- When you or your child used the call button to get help, was the response quick enough?  
Lorsque vous ou votre enfant a utilisé le bouton d'appel pour recevoir de l'aide, est-ce qu'on a répondu promptement à l'appel?
- While in the hospital, was your child able to get all the services he or she needed?  
Lors de son séjour à l'hôpital, est-ce que votre enfant a pu obtenir tous les services dont il/elle avait besoin?

**3. Consideration and Respect:** Parents' views about whether they were treated with courtesy and respect.

**Survey Questions:**

- How would you rate the courtesy of the staff who admitted your child?  
Comment évalueriez-vous la courtoisie du personnel qui a fait l'admission de votre enfant à l'hôpital?
- How would you rate the courtesy of the doctors?  
Comment évalueriez-vous la courtoisie des médecins?
- How would you rate the courtesy of the nurses?  
Comment évalueriez-vous la courtoisie des infirmières?
- Did doctors and nurses make sure your child had privacy when they took care of or talked to him or her?  
Est-ce que les médecins et les infirmières se sont assurés que votre enfant avait l'intimité nécessaire lorsqu'ils lui prodiguaient des soins ou lors de leurs conversations avec lui ou elle?

**4. Continuity and Transition:** Evaluates the extent to which parents got the help, information, and support they needed to care for their child after leaving the hospital.

**Survey Questions:**

- A lot of children have difficulty taking medicines at home. Did anyone in the hospital teach you how to give your child his or her new medicines?

Beaucoup d'enfants éprouvent des difficultés à prendre des médicaments à la maison. Est-ce qu'à l'hôpital quelqu'un vous a enseigné comment faire prendre les nouveaux médicaments à votre enfant?

- Were you told about side effects to watch for from your child's new medicines?  
Est-ce qu'on vous a informé des effets secondaires à surveiller suite à la prise des nouveaux médicaments par votre enfant?
- Were you told what activities your child could or could not do when he or she got home, such as eating, bathing, playing sports, or returning to school?  
Est-ce qu'on vous a renseigné sur les activités que votre enfant pouvait faire et lesquelles éviter une fois rendu à la maison, par exemple, les repas, le bain, les activités sportives, ou le retour à l'école?
- Did they tell you what danger signals about your child's illness or operation to watch for after he or she got home?  
Est-ce qu'on vous a dit quels signaux de danger concernant la maladie ou la chirurgie de votre enfant il vous fallait surveiller lors de son retour à la maison?
- Did someone on the hospital staff teach you what you needed to know to care for your child at home?  
Est-ce qu'un membre du personnel hospitalier vous a enseigné ce qu'il fallait que vous sachiez pour prendre soin de votre enfant à la maison?

**5. Coordination and Integration of Care:** Evaluates the extent to which parents felt that people who worked in the hospital worked together as a team to make sure that there were smooth transitions among different places and services within the hospital.

**Survey Questions:**

- How well organized was the care your child received in the Emergency Department?  
Dans quelle mesure étaient bien organisés les soins que votre enfant a reçus à l'urgence?
- How organized was the admission process?  
Dans quelle mesure était organisé le processus d'admission?
- Was your child's wait too long before going to his or her room?  
Est-ce que votre enfant a attendu trop longtemps avant d'être conduit à sa chambre?
- How would you rate the way the doctors and nurses worked together?  
Comment évalueriez-vous la façon dont les médecins et les infirmières travaillent ensemble?

**6. Information, Communication, and Education:** Evaluates the extent to which parents felt that they were told about their child's condition and treatment in a way they could understand. This measure also takes into account whether patients felt

they, and their child, got complete and understandable answers to their questions, and appropriate amounts of information from people who worked in the hospital.

**Survey Questions:**

- While you were in the Emergency Department, did you get enough information about your child's medical condition and treatment?  
Lorsque vous étiez à l'urgence, avez-vous obtenu assez de renseignements concernant l'état de santé de votre enfant et ses traitements?
- When you had important questions about your child to ask the doctors, did you get answers you could understand?  
Lorsque vous aviez des questions importantes à poser aux médecins concernant votre enfant, obteniez-vous des réponses qui vous étaient faciles à comprendre?
- When you had important questions about your child to ask the nurses, did you get answers you could understand?  
Lorsque vous aviez des questions importantes à poser aux infirmières concernant votre enfant, obteniez-vous des réponses qui vous étaient faciles à comprendre?
- How much information about your child's condition or treatment were you given?  
Dans quelle mesure vous a-t-on renseigné(e) concernant l'état de santé de votre enfant ou concernant ses traitements?
- Was the information about his or her condition discussed with your child in a way he or she could understand?  
Est-ce que les renseignements concernant l'état de santé de votre enfant lui ont été expliqués d'une manière facile à comprendre?

**7. Partnerships between Parents and Caregivers:** Evaluates the extent to which parents were involved in decisions about their child's care.

**Survey Questions:**

- Did you have confidence and trust in the doctors caring for your child?  
Faisiez-vous confiance aux médecins qui soignaient votre enfant?
- Did the doctors pay enough attention to your experiences and suggestions in caring for your child?  
Est-ce que les médecins ont prêté assez d'attention à vos expériences passées et à vos suggestions sur la façon de soigner votre enfant?
- Did you have confidence and trust in the nurses caring for your child?  
Faisiez-vous confiance aux infirmières qui soignaient votre enfant?
- Did the nurses pay enough attention to your experiences and suggestions in caring for your child?  
Est-ce que les infirmières ont prêté assez d'attention à vos expériences passées et à vos suggestions sur la façon de soigner votre enfant?
- Would you have liked more involvement in making the decisions about your child's hospital care?

Auriez-vous aimé être plus impliqué(e) dans la prise de décisions concernant les soins hospitaliers de votre enfant?

- 8. Physical Comfort:** Evaluates the extent to which parents felt their child got care, relief, and support for their discomfort and pain during their hospital stay.

**Survey Questions:**

- Did a doctor or nurse ask your child questions about his or her pain?  
Est-ce qu'un médecin ou une infirmière a questionné votre enfant concernant ses douleurs?
- If you or your child had to ask for pain medicine, did doctors or nurses respond quickly to your request?  
Si vous ou votre enfant avez dû faire une demande pour obtenir un médicament contre la douleur, est-ce que les médecins ou infirmières ont répondu promptement à votre demande?
- Do you think that the hospital staff did everything they could to help control your child's pain?  
Croyez-vous que le personnel hospitalier a fait tout ce qu'il pouvait pour contrôler la douleur de votre enfant?

## **Calculating the Indicator Scores**

A patient's score for any given indicator is the mean of the scores of the questions belonging to that indicator. For a patient's score to be calculated for an indicator, they must have a valid numeric response for at least half of that indicator's questions.

A variety of response scales were used in the patient satisfaction questionnaire. Some questions employed a Likert-type scale with five response choices: "Poor", "Fair", "Good", "Very Good", "Excellent". These were assigned the following scores: Poor = 0, Fair = 25, Good = 50, Very Good = 75, Excellent = 100.

Other questions used a three point scale with responses resembling: "Yes, Always", "Yes, Sometimes", "No". These were assigned the following scores: "Yes, Always" = 100, "Yes, Sometimes" = 50, "No" = 0. A number of these questions had a fourth, and sometimes a fifth, viable selection. For example, the question "Were you told about side effects to watch for from your child's new medicines?" had the response option "No new medicines at home". This is an acceptable response to the question, but was not assigned a score.

There were also questions using three-point scoring schemes with responses similar to those outlined above, but where the awarding of points was reversed. For example, the question "Was your child's wait too long before going to his or her room?" would be scored: "Yes, definitely" = 0, "Yes, Somewhat" = 50, "No" = 100.

The question "If you had to wait to go to your room, did someone from the hospital explain the reason for the delay?" was scored: Yes = 100, No = 0, "Didn't have to wait" receives no score. The questions "Was there one particular doctor in charge of your care in the hospital?" and "Did you know who to call if you needed help or had more questions after you left the hospital?" were scored: Yes = 100, No = 0, Not sure = 0.

The question "How much information about your child's condition or treatment were you given?" was scored: "Not enough" = 0, "Too much" = 0, "Right Amount" = 100. It also had the response option "Didn't want information", for which no score was assigned.

For a listing of the items used in the pediatric patient satisfaction indicators and their related scoring, see Appendix A.

## Risk-Adjustment

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In comparing hospitals on the quality of their patient care, it is important to take into account differences in patient characteristics that may vary systematically among hospitals. In clinical research this is called risk-adjustment, where patient scores are adjusted to remove pre-existing influences. This issue is particularly important because certain groups of patients tend to systematically report lower levels of satisfaction than other groups. If a hospital tends to serve a disproportionate number of such patients, it may be unfairly reported as having lower patient satisfaction, when in fact, satisfaction may be comparable to another hospital with higher satisfaction scores that simply serves a different population. Therefore, to improve hospital comparability, a statistical technique called hierarchical modeling was used to control for possible differences in pre-existing patient characteristics. Hierarchical modeling is a way of looking at outcomes, in this case patient satisfaction scores, and their relationships to particular factors that can be used to predict them. Hierarchical models differ from multivariate regression models (used in past years of the Hospital Report) in that they take into account the fact that the data are nested into distinct groups (in this case, patients nested into hospital corporations). Hierarchical models allow the hospital corporation's effect on the resulting model to vary from hospital to hospital, essentially treating the corporation itself as a risk-adjustment variable.

Patient-levels scores were adjusted for:

- i) patient age;
- ii) patient sex;
- iii) the question "In general, how would you rate your child's health?";
- iv) the question "Including this hospital stay, how many times in the last six months has your child been in a hospital overnight or longer?";
- v) the random effect of the hospital corporation.

The risk-adjustment was performed separately for each of the 8 indicators. The results of this analysis were then used to construct adjusted patient satisfaction scores, removing any variation in the original scores that was attributable to the predictors used in the risk-adjustment.

### ***Risk-Adjustment Procedure***

- The model that was chosen to risk-adjust the responses includes the fixed effects of the variables age, gender, child's health, number of hospital stays in the past six months. This model also included the random effect of the hospital corporation (allowing the intercept of the model to vary by corporation).
- Based on the resulting models, residual scores were calculated for each patient level record. The residual is the portion of the original score that cannot be explained or predicted by the model. The residual score is, therefore, the result of some unknown source of variation in the data. Note: a patient's 'residual' score plus their 'predicted' score adds to their original score. An individual's 'predicted' score is the score that is output when all of the patient's risk-adjustment characteristics are put into the model.
- Each patient's residual score is added to the overall mean of the 'predicted' scores to yield their risk-adjusted score.

Note: Missing values in the risk-adjustment variables were assigned to default valid responses (see Tables 1).

### ***Risk-adjustment for Sex-Disaggregated Patient Satisfaction Results***

The Patient Satisfaction Sex-disaggregated results were risk-adjusted slightly differently from those in the regular analysis. So as not to compensate for the differences between males and females, the risk-adjustment was performed on the data using the same methodology as outlined above, but without controlling for the effect of gender. As a result, variation in the data due to differences between males and females will remain intact.

All other aspects of the risk-adjustment for the sex-disaggregated results are consistent with the methodologies of the regular patient satisfaction analysis.

### ***Missing Values for Predictors Used in Risk-Adjustment***

Table 1: FY 2005/2006

<b>Predictor</b>	<b>Frequency</b>	<b>Percent</b>	<b>Default substitution for missing values</b>
Age	0		N/A
Gender	0		N/A
Child's health	39	2.23%	The mode for all other patients from the same corporation
Past Hospitalizations in previous 6 months	30	1.71%	One stay in past 6 months (i.e. the "Only this time" response)

## **Descriptive Statistics for Predictors Used in Risk-Adjustment**

Table 2: Descriptive Statistics for Age FY 2005/2006

	<b>Frequency</b>	<b>Percent</b>
0 years	339	19.36%
1 to 2 years	353	20.16%
3 to 6 years	385	21.99%
7 to 11 years	342	19.53%
12 to 17 years	332	18.96%

Table 3: Descriptive Statistics for Gender FY 2005/2006

	<b>Frequency</b>	<b>Percent</b>
Female	757	43.23%
Male	994	56.77%

Table 4: Descriptive Statistics for Child's Health FY 2005/2006

	<b>Frequency</b>	<b>Percent</b>
Poor/Fair	188	10.74%
Good	373	21.30%
Very Good	641	36.61%
Excellent	549	31.35%

Table 5: Descriptive Statistics for number of Hospital Stays in the Past 6 Months FY 2005/2006

	<b>Frequency</b>	<b>Percent</b>
Only this time	1201	68.59%
This time and one other time	266	15.19%
This time and more than one other time	284	16.22%

## Weighting

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### ***Hospital Unit Weights***

Not all hospital corporations adopted the same sampling strategies. While some smaller corporations may have used simple random sampling techniques, some of the larger hospital corporations may have drawn samples from units within their corporation to better reflect their particular structure (i.e. stratified sampling). Weights are necessary in hospital-specific analysis to ensure that a hospital's patient sample reflects the actual discharge pattern of the units that make up that hospital corporation.

Hospital unit weights were calculated using the patient data files that hospitals provided to NRC. The expectation was that these patient data files would yield a reasonable approximation of actual discharge patterns from a hospital. Within each hospital corporation, a weight was calculated for each unit and month by comparing the sample population to the discharge population. This means that each unit within a corporation can have as many as 12 distinct weights (one for each month of data). For every corporation/unit/month combination where it was not possible to calculate a weight, a weight of 1 was assigned.

For each hospital corporation, the goal of weighting is to make the distribution of the sampled population resemble that of the discharged population. Ideally, unit X would represent the same proportion of cases in the sample population as it does in the discharge population. If this is the case, then a weight of 1 is assigned to each case within unit X. If unit X is under-represented in the sample (i.e. it has proportionately fewer cases in the sample population than in the discharge population), then every case from that unit will receive a weight greater than one to compensate. Similarly, cases from units that are over-represented will receive weights smaller than one (but greater than zero; there are no negative weights).

These hospital unit weights were applied throughout the pediatric patient satisfaction analysis. They were applied in the risk adjustment with hierarchical models, and the calculation of hospital-specific indicator scores. These were also used, along with corporation weights, in calculating indicator scores by peer group, and in calculating province-level satisfaction scores (note: these provincial scores are not those used for the performance allocation).

### ***Corporation Weights***

A different set of weights was required (along with the hospital unit weights) for the calculation of indicator scores at the peer group and province level. Where above we discussed weights for units within a corporation, here we need to consider weights for corporations within the province. In calculating broader indicator scores, we have to ensure that the size of a corporation's sample population within the entire sample is proportional to the size of its discharge population within the entire discharge population (i.e. all discharges for the participating Ontario hospitals). A corporation that is either over-represented or under-represented in the sample will see weights applied to its cases accordingly.

Discharge information from the 2005-2006 Discharge Abstract Database (DAD) was used to calculate the corporation weights. Records from the participating hospitals with ages 0 to 17 were included. Obstetric and psychiatric cases were removed from the data using CMG codes. Newborns were removed from the data using the Entry Code field.

## Response Rates

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For the 2005-2006 fiscal year, the overall response rate was 38.2%. Males had a response rate of 38.0% while females had a response rate of 38.4%. The mean hospital response rate was 36.7%, and the median response rate was 38.5%. The lowest response rate for a given hospital corporation was 25.8%.

## Hospital-Specific Analysis: Assessing Relative Performance

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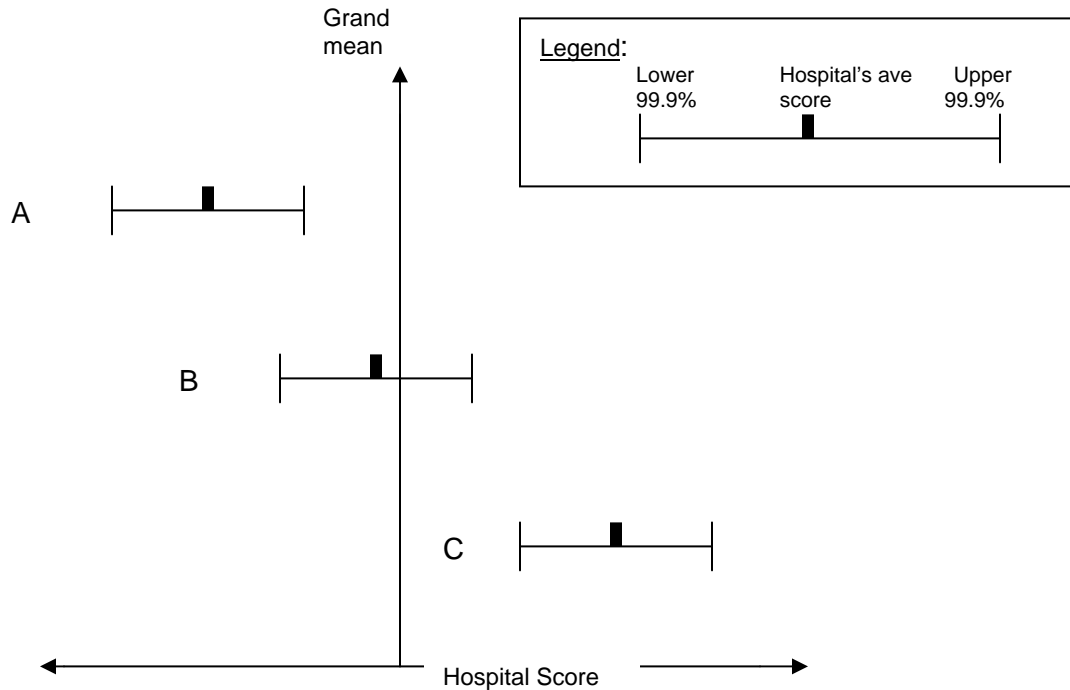
For those that pass the  $n = 100$  case volume screen, each hospital's performance on each indicator is designated "above average", "average", or "below average". For the patient satisfaction indicators, two criteria were used to assess each hospital's performance. Statistical significance was used to assign hospitals to the above average performance category. This criterion alone, however, was insufficient when designating hospitals as having below average performance. The calculation of statistical significance relies heavily on sample size, and different hospitals in this project had dramatically different sample sizes. It was possible to find statistically significant differences from average in hospitals with a larger sample size, even though those differences were small and not substantive. A second criterion, described below, was used for assigning hospitals to the below average performance category.

A 99.9% Confidence Interval (CI) was calculated for each indicator score within each hospital. Each hospital was compared to the average indicator score for all hospitals (the grand mean, or "performance target"):

- "Above average" performance allocations were given to hospitals with indicator scores that were significantly statistically above the grand mean, using the 99.9% CI. This means that the lower bound of the confidence interval was higher than the grand mean.
- "Provincial Average" performance allocations were given to hospitals with indicator scores not significantly different from the grand mean.
- "Below average" performance allocations were given to hospitals with indicator scores both statistically significantly below the grand mean and lower than all non-significant hospital indicator scores. This means that the upper bound of the confidence interval was below the grand mean, and the hospital's indicator score was lower than the scores of all hospitals that were allocated an "average" performance.

### **Step 1: Calculate 99.9% CIs and Compare to Grand Mean**

Figure 1.1: Procedure for Determining a Hospital's Performance Category



**HOSPITAL A:** The grand mean is above the upper 99.9% CI. The average indicator score for hospital A is estimated to be less than the grand mean (average of all hospital average) 999 times out of 1000.

ALLOCATION: Below average

**HOSPITAL B:** The grand mean falls between the upper and lower 99.9% CI of the hospital average. The average indicator score for hospital B is estimated to not be significantly different than the grand mean 999 times out of 1000.

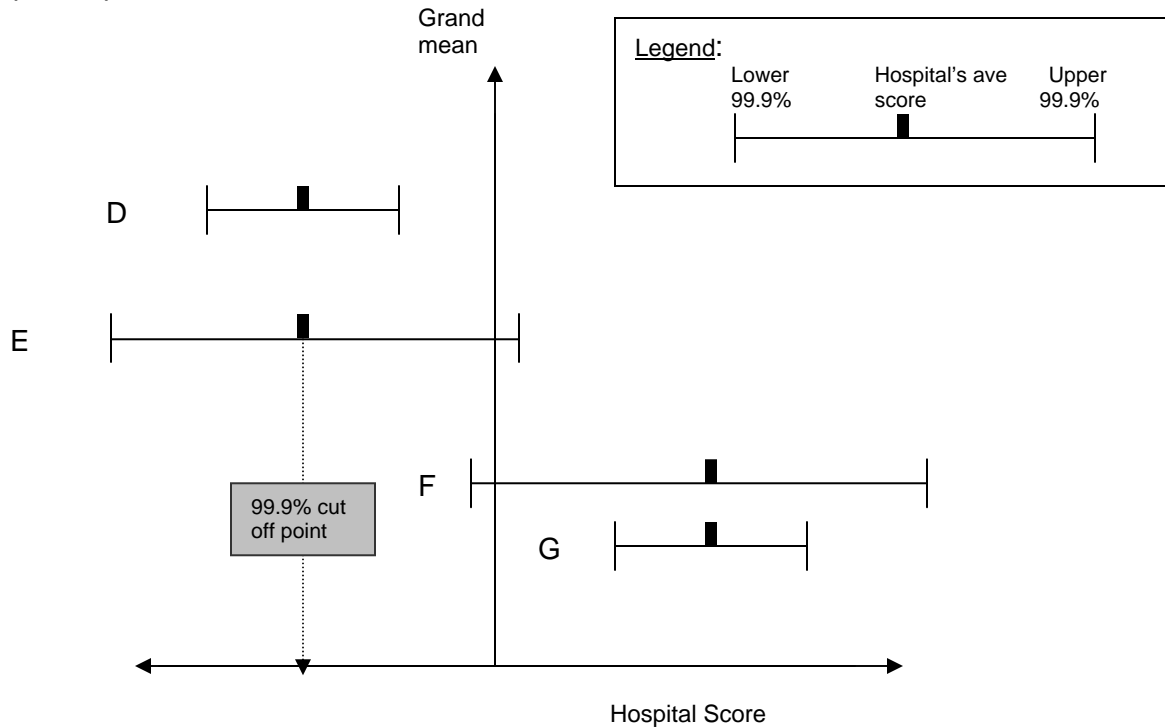
ALLOCATION: Provincial Average

**HOSPITAL C:** The grand mean is below the lower 99.9% CI. The average indicator score for hospital C is estimated to be greater than the grand mean 999 times out of 1000.

ALLOCATION: Above average

**Step 2: Apply Low Cut-Off Point**

Figure 1.2: Applying the Low Cut-Off Point for Performance Allocations



### Confidence Intervals and the Allocation Bias

The value for each patient satisfaction indicator represents the average response of patients surveyed. Hospitals that survey a greater number of patients tend to have a narrower confidence interval. This means that we are generally more confident (99.9%) that the true indicator score is within this narrow band. Conversely, hospitals that survey fewer patients would be more likely to have a wider confidence interval. Therefore, hospitals with an average score below the grand mean would be more likely to receive an allocation of "provincial average" when they have a wider confidence interval while a hospital with the same score with a narrow confidence interval would be more likely to receive an allocation of "below average". To prevent this problem, a low cut-off point was used for the "below average" allocation.

#### 99.9% Low Cut-off Point (HOSPITAL D & E)

Hospital D has the same average score as hospital E. However, based on the allocation process previously described, hospital D would receive a lower allocation (below average) than hospital E (provincial average) due to the size of the confidence intervals. A low cut-off point is applied to prevent this bias against hospitals that have a greater sample size/narrower confidence interval.

The 99.9% low cut-off point is determined by identifying the lowest indicator score of those hospitals that received an allocation of "provincial average" (and for which the grand mean fell within the 99.9% CI). Any hospital with an average score which falls between this low cut-off point and the grand mean receives an allocation of "provincial average" irrespective of whether the upper 99.9% confidence limit falls below the "provincial average". Therefore, hospital D which has the same average score as hospital E would also receive an allocation of "provincial average".

**What About an Above Average Cut-off Point? (HOSPITAL F & G)**

Note that although a low cut-off point was applied to prevent a bias against poorer allocation of performance for hospitals with a greater sample size and narrower confidence interval, this process was not applied for above average performance. Conversely applied, this process would penalize hospitals that have a greater sample size and narrower confidence interval by lowering the performance score when in fact the hospital is significantly above average. As a result, while both hospital F and G have the same average score, hospital G would receive an "above average" allocation, while hospital F would receive a "provincial average" allocation.

The following table represents the lower cut off points for all the indicators.

Table 6: 99.9% Low Cut-Offs (FY 2005-2006)

<b>Indicator Group</b>	<b>Indicator</b>	<b>99.9% Low Cut-Off</b>
Hospital Report Indicators	Overall Impressions	78.40
	Access to Care and Services	70.68
	Consideration and Respect	74.01
	Continuity and Transition	63.36
	Coordination and Integration of Care	68.14
	Information, Education and Communication	79.99
	Partnership between Parents and Caregivers	76.42
	Physical Comfort	71.64

## **Reporting Results by Sex**

The indicator quantifying the difference between rates for women and men [i.e. (F-M)] is the value of the difference between women and men - or a value for "equity". The E-scorecard will include the sex difference values [i.e. (F-M)] for each indicator and an indication of the direction (i.e. F>M or M>F) and the statistical significance of these values at a hospital level. Participating hospitals may access their own and other hospitals' difference values and the direction (i.e. F>M or M>F) and statistical significance of these differences for each indicator on a password-protected database at [www.hospitalreport.ca](http://www.hospitalreport.ca).

The interpretation of these data and notes about suppression will accompany this database. In terms of interpretation, if this value [i.e. (F-M)] is negative, males have higher scores than females; if this value is positive, females have higher scores than males. A value of "0" is used as the benchmark as it represents true equity between women and men. Furthermore, if a hospital's 95% confidence interval around their specific value of the difference between women and men for a given indicator includes zero, then the hospital is said to have no statistically significant sex difference for that indicator (which is preferred). If a hospital's 95% confidence interval around their specific value of the difference between women and men for a given indicator does not include zero and is negative, then the hospital is said to have unequal (i.e. M>F) performance or a statistically significant sex difference, in which males have a higher score than females. If a hospital's 95% confidence interval around their specific value of the difference between women and men for a given indicator does not include zero and is positive, then the hospital is said to have unequal (F>M) performance or a statistically significant sex difference, in which females have a significantly higher score than males.

## Appendix A: Questionnaire Items

Questionnaire items relevant to the Pediatric Acute Care indicators, including Hospital Report scoring scheme.

\* indicates that the item was not used as an evaluative question in any of the indicators.

#	Question	Response options	Scoring
1*	How was your child admitted to the hospital?	<input type="checkbox"/> Emergency Department (Go to #2) <input type="checkbox"/> Planned admission by a doctor (Go to #4) <input type="checkbox"/> Unexpectedly after a day procedure (Go to #4) <input type="checkbox"/> Transferred from another facility (Go to #4) <input type="checkbox"/> Other (Go to #4)	
2	How well organized was the care your child received in the Emergency Department?	Not at all organized Somewhat organized Very organized	0 50 100
3	While you were in the Emergency Department, did you get enough information about your child's medical condition and treatment?	Yes, definitely Yes, somewhat No Didn't want information	100 50 0 no score
4	How organized was the admission process?	Not at all organized Somewhat organized Very organized	0 50 100
5	Was your child's wait too long before going to his or her room?	Yes, definitely Yes, somewhat No	0 50 100
7	How would you rate the courtesy of the staff who admitted your child?	Poor Fair Good Very Good Excellent	0 25 50 75 100
9	Were the doctors available to answer your questions or concerns when you needed them?	Yes, always Yes, sometimes No Never had questions or concerns	100 50 0 no score
10	Did you have confidence and trust in the doctors caring for your child?	Yes, always Yes, sometimes No	100 50 0
11	When you had important questions about your child to ask the doctors, did you get answers you could understand?	Yes, always Yes, sometimes No Didn't have questions	100 50 0 no score
12	Did the doctors pay enough attention to your experiences and suggestions in caring for your child?	Yes, completely Yes, somewhat No	100 50 0
13	How would you rate the courtesy of the doctors?	Poor Fair Good Very Good Excellent	0 25 50 75 100
14	How would you rate the availability of the doctors?	Poor Fair Good Very Good Excellent	0 25 50 75 100

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15	Were the nurses available to answer your questions or concerns when you needed them?	Yes, always Yes, sometimes No Never had questions or concerns	100 50 0 no score
16	Did you have confidence and trust in the nurses caring for your child?	Yes, always Yes, sometimes No	100 50 0
17	When you had important questions about your child to ask the nurses, did you get answers you could understand?	Yes, always Yes, sometimes No Didn't have questions	100 50 0 no score
18	Did the nurses pay enough attention to your experiences and suggestions in caring for your child?	Yes, completely Yes, somewhat No	100 50 0
19	How would you rate the courtesy of the nurses?	Poor Fair Good Very Good Excellent	0 25 50 75 100
20	How would you rate the availability of the nurses?	Poor Fair Good Very Good Excellent	0 25 50 75 100
22	Do you feel you had a doctor or nurse that had a good understanding of your child's condition and treatment?	Yes, always Yes, sometimes No	100 50 0
23	Did your child receive the care he or she needed when he or she needed it?	Yes, always Yes, sometimes No	100 50 0
25	Would you have liked more involvement in making the decisions about your child's hospital care?	Yes, definitely Yes, somewhat No	0 50 100
30	How much information about your child's condition or treatment were you given?	Not enough Right amount Too much Didn't want information	0 100 0 no score
32	Was the information about his or her condition discussed with your child in a way he or she could understand?	Yes, definitely Yes, somewhat No Don't know Child is too young/couldn't understand No information was given	100 50 0 no score no score no score
33	When you or your child used the call button to get help, was the response quick enough?	Yes, always Yes, sometimes No Didn't use call button	100 50 0 no score
35*	Was your child ever in any pain?	Yes No (Go to #42) Don't Know (Go to #42)	
37	Did a doctor or nurse ask your child questions about his or her pain?	Yes, frequently Yes, sometimes No Don't know Child is too young	100 50 0 no score no score

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38*	Did you or your child ever have to ask for pain medicine?	Yes, frequently Yes, sometimes No (Go to #40)	
39	If you or your child had to ask for pain medicine, did doctors or nurses respond quickly to your request?	Yes, always Yes, sometimes No	100 50 0
41	Do you think that the hospital staff did everything they could to help control your child's pain?	Yes, definitely Yes, somewhat No	100 50 0
56	A lot of children have difficulty taking medicines at home. Did anyone in the hospital teach you how to give your child his or her new medicines?	Yes, completely Yes, somewhat No No new medicines at home	100 50 0 no score
57	Were you told about side effects to watch for from your child's new medicines?	Yes, completely Yes, somewhat No No new medicines at home	100 50 0 no score
58	Were you told what activities your child could or could not do when he or she got home, such as eating, bathing, playing sports, or returning to school?	Yes, completely Yes, somewhat No	100 50 0
59	Did they tell you what danger signals about your child's illness or operation to watch for after he or she got home?	Yes, completely Yes, somewhat No	100 50 0
62	Did someone on the hospital staff teach you what you needed to know to care for your child at home?	Yes, completely Yes, somewhat No	100 50 0
65	How would you rate the way the doctors and nurses worked together?	Poor Fair Good Very Good Excellent	0 25 50 75 100
66	While in the hospital, was your child able to get all the services he or she needed?	Yes, always Yes, sometimes No	100 50 0
67	Did doctors and nurses make sure your child had privacy when they took care of or talked to him or her?	Yes, always Yes, sometimes No	100 50 0
68	How would you rate the hospital's policy for visiting and staying with your child?	Poor Fair Good Very Good Excellent	0 25 50 75 100
69	Overall, how would you rate the care your child received at the hospital?	Poor Fair Good Very Good Excellent	0 25 50 75 100
71	Would you recommend this hospital to your family and friends?	Yes, definitely Yes, probably No	100 50 0
72*	In general, how would you rate your child's health?	Poor Fair Good Very Good Excellent	
74*	Including this hospital stay, how many times in the last six months has your child been in a hospital overnight or longer?	Only this time This time and one other time This time and more than one other time	

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75*	Who completed this survey?	Patient Parent Someone else	
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## Appendix B: Psychometric properties

The following tables presents select psychometric properties of the pediatric patient satisfaction indicators.

Scale	Cronbach's Alpha	Item-Total Correlation Range	Inter-Item Correlation Range
Overall Impressions	0.7556	0.45 to 0.74	0.26 to 0.54
Access to Care	0.8096	0.46 to 0.65	0.18 to 0.63
Consideration and Respect	0.7279	0.32 to 0.60	0.24 to 0.56
Continuity and Transition	0.8157	0.49 to 0.66	0.32 to 0.60
Coordination and Integration of Care	0.7479	0.48 to 0.59	0.29 to 0.51
Information, Education & Communication	0.6863	0.38 to 0.50	0.20 to 0.40
Partnership between Parents and Clinicians	0.7174	0.35 to 0.55	0.22 to 0.60
Physical Comfort	0.7004	0.42 to 0.62	0.33 to 0.51

The following table presents the inter-scale Spearman correlation coefficients, calculated using raw patient-level results.

	Access	Consider	ContTrans	CoordCare	Info	Overall	Partner	PhysComf
Access	1	0.70834	0.43802	0.59461	0.5733	0.68168	0.66631	0.53867
Consider	0.70834	1	0.39841	0.61626	0.51298	0.69398	0.6216	0.46575
ContTrans	0.43802	0.39841	1	0.33663	0.38334	0.43371	0.3613	0.40681
CoordCare	0.59461	0.61626	0.33663	1	0.46549	0.56482	0.50605	0.36379
Info	0.5733	0.51298	0.38334	0.46549	1	0.51362	0.6075	0.47759
Overall	0.68168	0.69398	0.43371	0.56482	0.51362	1	0.63144	0.49636
Partner	0.66631	0.6216	0.3613	0.50605	0.6075	0.63144	1	0.49054
PhysComf	0.53867	0.46575	0.40681	0.36379	0.47759	0.49636	0.49054	1