



*turning knowledge into practice*

**Methodology:**  
*U.S. News & World Report*  
**Best Children's Hospitals 2011-12**

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## I. Introduction

*U.S. News & World Report* has ranked hospitals in pediatrics since launching the annual “Best Hospitals” rankings in 1990. Until 2007, however, the pediatric rankings were based solely on reputation, determined by an annual survey of board-certified pediatricians and adolescent-medicine specialists.

The obstacle to data-driven rankings was the absence of quantitative measures comparable to those used to rank most Best Hospitals specialties. For example, Medicare data (i.e., MedPAR) are used to determine mortality in 12 adult specialties. No such large pediatric mortality database was or currently is available. (A relatively small number of children, under narrowly defined conditions of eligibility, receive care under Medicare because of legislatively mandated changes in coverage over time.) Reliable structural measures were also absent. Available data sources generally reported volume, advanced technologies, and patient services across a hospital and did not break out pediatric-specific information.

Continuing to rank this important specialty on reputation alone for several years or more while experts worked out definitions of performance data and how best to collect and verify the data was not acceptable. *U.S. News* enlisted RTI International<sup>†</sup> to develop an enhanced methodology for ranking hospitals in pediatrics, utilizing data obtained directly from pediatric hospitals (the Pediatric Hospital Survey). Rankings incorporating such data appeared in a separate issue of the magazine in 2007 as “Best Children’s Hospitals.” Separating the pediatric and adult rankings highlighted the change and minimized potential confusion created by apparently similar methodology used in both sets of rankings.

In 2008, both the Pediatric Hospital Survey and the survey of physicians were expanded, permitting pediatric hospitals to be ranked in general pediatrics and in six pediatric specialties.<sup>‡</sup> In 2009 the number of specialties was further expanded to 10 and general pediatrics was dropped. There were no additions or subtractions in 2010 or 2011. The specialties:

- Cancer
- Cardiology & Heart Surgery
- Diabetes & Endocrinology
- Gastroenterology
- Neonatology
- Nephrology
- Neurology & Neurosurgery
- Orthopedics
- Pulmonology
- Urology

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<sup>†</sup> RTI International is the trade name of Research Triangle Institute.

<sup>‡</sup> Previous methodology reports are available online at [www.rti.org/besthospitals](http://www.rti.org/besthospitals).

Like Best Hospitals, the Best Children's Hospitals rankings reflect the interrelationship among *structure*, *process*, and *outcomes*, the three components of the Donabedian paradigm.<sup>1-5</sup> The specific measures, weights, and scoring, however, are quite different in the pediatric rankings, partly because of constraints on the available data. The three Donabedian components are structure, process, and outcomes:

- *Structure* refers to hospital resources directly related to patient care. Examples include the ratio of nurses to patients, specialized clinics and programs, and certification by recognized external organizations.
- The *process* of health care delivery encompasses overall rendering of diagnosis, treatment, prevention, and patient education. In both the pediatric and adult rankings, process is represented by a reputational score based on the annual survey of board-certified physicians cited above.
- *Outcomes* most obviously include death but can also include functional success, such as in children with cystic fibrosis, and adverse events such as bloodstream infections and failure of transplanted organs.

The specific mission of the Best Children's Hospitals rankings is to identify hospitals that provide the highest quality of care for children with the most serious or complicated medical conditions, using the most robust and sensitive measures available to represent the three Donabedian elements. *Section IV* describes the data and the construction of each element.

As in previous years, most structure and outcomes data were obtained directly from children's hospitals through the Pediatric Hospital Survey (described in *Section III*). The methodology also incorporates nominations of hospitals from board-certified pediatric specialists in each of the 10 specialties through the Pediatric Physician Survey (described in *Section VI*). Two external organizations supplied data for two measures: the American Nurse Credentialing Center (Nurse Magnet designation) and the Foundation for the Accreditation of Cellular Therapy (accreditation for stem cell transplantation).

## **II. Eligibility**

### **A. General Eligibility**

To be considered for the pediatric rankings, hospitals had to provide extensive data about their services and capabilities on the 2011 version of the Pediatric Hospital Survey submission

form. The universe of hospitals asked to submit data was based on standing in the National Association for Children’s Hospitals and Related Institutions (NACHRI).<sup>§</sup> They had to fall into one of three membership classifications: freestanding children’s hospital; “hospital within a hospital” (a pediatric service that functions autonomously but does not physically stand apart), or associate member (a pediatric hospital affiliated with a medical school but not the primary pediatric teaching hospital).

Certain specialty and non-NACHRI member hospitals were added because they had appeared previously in the Best Children’s Hospitals rankings or because their inclusion was recommended by members of expert advisory panels that participated in a review of pediatric hospital quality measures in the fall of 2010.

Of 177 hospitals qualifying to be included, approximately 100 submitted data for the 2011-12 rankings.

## **B. Specialty-Specific Eligibility**

Two additional requirements had to be met for a hospital to be considered eligible in a particular specialty. For specialties other than Neonatology, hospitals had to indicate in the Pediatric Hospital Survey that they have the pediatric specialty service program. In Neonatology, hospitals had to indicate that they have a Level III neonatal intensive care unit. The second eligibility criterion was a full-time-equivalent (FTE) of at least 1.0 attending physicians in certain medical fields related to the specialty. In fields where multiple physician types are listed, the FTE requirement could be met in any of the categories. The physician categories are shown in *Table 1*.

## **III. Pediatric Hospital Survey**

As in previous years, advisory panels were convened before the 2011 survey was sent to hospitals to offer guidance and suggest improvements to the prior version. Panel members were recruited in cooperation with NACHRI, which issued a request to the pediatric-hospital community to propose candidates with broad-ranging expertise in both general and specialty pediatric medical care and familiarity with current research into hospital quality. The panels ultimately comprised pediatric physicians, nurses, hospital quality experts, and other healthcare professionals. Panels in infection control and in health information systems/coding were added to the existing 10 specialty panels.

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<sup>§</sup> More information about NACHRI and its member hospitals can be found at [www.childrenshospitals.net](http://www.childrenshospitals.net).



**Table 1. Specialty-Specific Eligibility Requirements**

<b>Specialty</b>	<b>Must have at least 1.0 FTE attending staff in the following categories:</b>
Cancer	Pediatric hematologist/oncologist
Cardiology & Heart Surgery	Pediatric cardiothoracic surgeon, or Pediatric cardiac intensivist, or Pediatric cardiac interventionalist, or Pediatric cardiac electrophysiologist
Diabetes & Endocrinology	Pediatric endocrinologist
Gastroenterology	Pediatric gastroenterologist
Neonatology	Pediatric neonatologist
Nephrology	Pediatric nephrologist
Neurology & Neurosurgery	Pediatric neurologist, or Pediatric neurosurgeon
Orthopedics	Pediatric orthopedic surgeon
Pulmonary	Pediatric pulmonologist, or Pediatric sleep medicine physician
Urology	Pediatric urologist, or Urologist

Through conference calls, ad hoc phone discussions, and e-mails during the summer and fall of 2010, panel members proposed, reviewed, and discussed revisions to the previous survey, including prospective new measures.

The RTI project team and *U.S. News* created a draft set of measures and survey instrument. A smaller group of advisors reviewed both the broad content and specific information, such as individual ICD-9-CM codes that identify diagnoses and treatments. In addition, experts at several children's hospitals extensively reviewed the survey to ensure that the questions made sense and were answerable. The final result was a slightly expanded and refined version of the 2010 survey. The data submission form was administered to hospitals from January to March 2011 via a dedicated Web page.

Analysis of the results indicated that some measures should be excluded because they failed to demonstrate meaningful variability among the responses. The remaining items were used to develop the majority of the structural and outcomes measures. The items are described in detail below. The Pediatric Hospital Survey data submission form will continue to be updated and modified in subsequent years to reflect the quality of care provided by U.S. pediatric facilities and the evolution of the discipline of quality improvement.

## **IV. Structure**

The structural element is represented by volume, technology, clinical services, and other characteristic features of a high-quality pediatric hospital. In the Best Hospitals adult specialty rankings, most structural measures and their associated data are derived from the American Hospital Association (AHA) annual survey. Because the AHA survey focuses primarily on overall hospital measures, however, pediatric data lack specificity. Structural data were collected through the Pediatric Hospital Survey.

All measures used in the rankings are described in the following sections. The print version of the rankings displays a subset of measures; a broader selection is displayed online. The measures are divided into two categories—those that apply to all specialties and those that apply to specific specialties. They are listed alphabetically.

### **A. Structural Measures (All Specialties)**

Certain measures, such as absolute or relative patient and/or procedure volume, availability of advanced clinical services, and quality improvement activities are included in most or all specialties because they represent fundamental elements of high-quality hospital-based pediatric care. This section describes these measures. (Specialty-specific measures appear in *Section III. B.*)

#### **Advanced Clinical Services**

Hospitals frequently offer clinical services and organize teams or programs to address special needs of specific groups of patients. These services or programs may be organized around a particular diagnosis, need, or age group. The structure of the services or programs facilitates ensures that a range of resources are available. Specialized skills of a multidisciplinary staff improve overall quality of care and presumably outcomes. The clinical services recognized in each specialty are described in *Table 2*. One point was awarded for each service offered in a specialty.

**Table 2. Advanced Clinical Services Offered by Specialty**

<b>Cancer (17 services)</b>	
<b>Service</b>	<b>Description</b>
Cancer care coordination	Hematologist-oncologist is involved in more than 50% of the evaluations and management visits with the patient
Chemotherapy orders	1 point for handwritten chemotherapy orders without a template; or 2 points for orders written using a protocol-driven template or as part of a computerized physician order entry program
Chemotherapy support services	Offering the following: <ul style="list-style-type: none"> <li>• pharmacists specifically assigned to participate in daily inpatient rounds with the pediatric cancer treatment team</li> <li>• outpatient pediatric chemotherapy facility</li> <li>• formal chemotherapy safety program with standardized procedures and event tracking</li> <li>• a designated pediatric oncology faculty leader for the chemotherapy safety program</li> <li>• a reporting system that captures chemotherapy order misses/near-misses</li> </ul>
Ease of access	Offering the following: <ul style="list-style-type: none"> <li>• satellite offices/outreach clinics to assist patients facing barriers to care</li> <li>• coordinated outreach program that enables cancer patients to receive community-based follow-up care</li> <li>• multidisciplinary clinics, allowing patients to see multiple care providers in a single visit</li> </ul>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Support staff	Offering the following: <ul style="list-style-type: none"> <li>• chemotherapy-certified pediatric oncology pharmacist</li> <li>• pediatric child-life specialists</li> <li>• school programs for hospitalized patients</li> <li>• psychosocial support program</li> <li>• social work support</li> </ul>

<b>Cardiology &amp; Heart Surgery (18 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Echocardiography laboratory	Offering certified echocardiography laboratory in: <ul style="list-style-type: none"> <li>• transthoracic echocardiographic testing</li> <li>• transesophageal echocardiographic testing</li> <li>• fetal echocardiographic testing</li> </ul>

(continued)

**Table 2. Advanced Clinical Services Offered by Specialty (continued)**

<b>Cardiology &amp; Heart Surgery (18 services)</b>	
<b>Service</b>	<b>Description</b>
Cardiovascular services	Offering these diagnostic and treatment services:
	<ul style="list-style-type: none"> <li>• inpatient cardiology consultation</li> <li>• dedicated cardiac surgical OR</li> <li>• cardiac intensive care unit</li> <li>• remote monitoring capability</li> <li>• cardiac diagnostic catheterization laboratory</li> <li>• cardiac interventional catheterization laboratory</li> <li>• electrophysiology laboratory</li> <li>• congenital heart disease clinic</li> <li>• ventricular assist program</li> <li>• 24-hour in-house ECMO</li> <li>• cardiovascular genetics clinic</li> <li>• transesophageal testing, supervised by pediatric cardiologist</li> </ul>
Heart failure program	Providing a heart failure program with a designated medical director and nursing coordinator
Circulatory support	Offering ventricular assist devices (other than ECMO) for patients under 10

<b>Diabetes &amp; Endocrinology (17 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Diabetes support staff	Having the following personnel available for consultation: <ul style="list-style-type: none"> <li>• social workers</li> <li>• dieticians</li> <li>• psychologists</li> <li>• genetic counselors</li> <li>• exercise physiologists</li> </ul>
Diabetes patient services	Offering the following: <ul style="list-style-type: none"> <li>• standardized educational program used to evaluate and prepare patients for use of an insulin pump</li> <li>• Certified diabetes educators (CDEs) to provide pump training to patient families</li> <li>• standardized education program used to evaluate and prepare patients for use of continuous glucose monitors (CGMs)</li> <li>• certified CGM trainers to provide CGM training to patient families</li> <li>• standardized educational program for families of new-onset diabetes patients</li> <li>• formal educational program for school nurses through either a yearly school nurse education conference or written materials distributed each school year to the school nurses to ensure appropriate care of patients</li> <li>• designated school liaison who is an RN or CDE in hospital's pediatric diabetes program</li> </ul>
Diabetes educators	At least 75% of diabetes educators are CDEs
Diabetes support services	Offering the following programs or services: <ul style="list-style-type: none"> <li>• Diabetes education program certified by American Diabetes Association</li> <li>• Diabetes-specific support group for parents and families</li> </ul>
Remote access to records	Providing physicians with remote access to patient records from locations off-site (e.g., electronic health records)

(continued)

**Table 2. Advanced Clinical Services Offered by Specialty (continued)**

<b>Gastroenterology (8 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Gastrointestinal (GI) specialists	Having the following specialists available for consultation 7 days a week: <ul style="list-style-type: none"> <li>• pediatric gastroenterology/liver-specialized pathologists</li> <li>• pediatric interventional radiologists</li> </ul>
GI support groups	Providing support groups for: <ul style="list-style-type: none"> <li>• inflammatory bowel disease</li> <li>• celiac disease</li> <li>• liver disease</li> <li>• other pediatric gastroenterology</li> </ul>
GI education materials	Providing educational material on GI-specific conditions to patients

<b>Neonatology (4 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
NICU support staff	Offering the following: <ul style="list-style-type: none"> <li>• neonatal intensive care unit (NICU)-specific pharmacist onsite who attends rounds with clinical team</li> <li>• NICU-designated nutritionist who supports clinical team</li> <li>• designated social workers</li> </ul>

<b>Nephrology (8 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Maintenance dialysis staff	Having the following staff dedicated to maintenance dialysis: <ul style="list-style-type: none"> <li>• clinical nurses</li> <li>• social workers</li> <li>• dieticians</li> </ul>
Dialysis treatment	Providing the following dialysis options for acute kidney insufficiency: <ul style="list-style-type: none"> <li>• hemodialysis</li> <li>• peritoneal dialysis</li> <li>• continuous renal replacement therapy</li> </ul>
Kidney transplant	Having a United Network for Organ Sharing (UNOS) recognized kidney transplant program

(continued)

**Table 2. Advanced Clinical Services Offered by Specialty (continued)**

<b>Neurology &amp; Neurosurgery (19 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Epilepsy treatment	Offer the following: <ul style="list-style-type: none"> <li>• specialized epilepsy treatment center</li> <li>• neurosurgery treatment for epilepsy</li> <li>• a sleep laboratory accredited by the American Academy of Sleep Medicine</li> <li>• EEG lab accredited by the Electroencephalographic Technologists, Evoked Potential Technologists</li> </ul>
Headache clinic	A headache clinic that offers the following: <ul style="list-style-type: none"> <li>• designated medical director and nursing coordinator</li> <li>• psychologists who specialize in headache treatment</li> <li>• biofeedback treatment</li> <li>• abortive/preventive therapy for headache episodes</li> </ul>
Neurology & neurosurgery support services and technology	Offering the following: <ul style="list-style-type: none"> <li>• neuroradiology interventionalists</li> <li>• psychologists who specialize in neuropsychological testing</li> <li>• ketogenic diet evaluation and management program</li> <li>• neuroanesthesia program</li> <li>• dedicated neurology/neurosurgery intensive care unit or beds</li> <li>• epilepsy monitoring unit with emergency management of seizures protocols</li> <li>• a neuro-critical care discharge clinic to transition patient</li> <li>• neurological rehabilitation program (<i>1 additional point if certified by the Commission on Accreditation of Rehabilitation Facilities</i>)</li> <li>• coordinated discharge plan for former critical care patients</li> </ul>

<b>Orthopedics (6 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Advanced care services	Comprehensive pediatric orthopedic program with: <ul style="list-style-type: none"> <li>• designated inpatient unit for pediatric orthopedic patients</li> <li>• dedicated pediatric imaging center</li> <li>• imaging center staffed by a radiologist</li> <li>• multidisciplinary musculoskeletal oncology program</li> <li>• Motion laboratory (Gait lab)</li> </ul>

(continued)

**Table 2. Advanced Clinical Services Offered by Specialty (continued)**

<b>Pulmonology (12 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Dedicated staff	<p>Following staff who attend clinic or participate in patient care conferences:</p> <ul style="list-style-type: none"> <li>• gastroenterologist</li> <li>• endocrinologist</li> </ul> <p>Following staff who support the muscular dystrophy treatment program:</p> <ul style="list-style-type: none"> <li>• pulmonologist</li> <li>• physiatrist</li> <li>• orthopedist</li> </ul>
Asthma care specialists	<p>At least 1 full-time equivalent (FTE) staff with clinical responsibilities:</p> <ul style="list-style-type: none"> <li>• respiratory therapists</li> <li>• certified asthma educators</li> </ul>
Support services	<p>Offering the following:</p> <ul style="list-style-type: none"> <li>• Cystic fibrosis (CF) center accredited by Cystic Fibrosis Foundation</li> <li>• pulmonologist routinely involved in outpatient management of patients with sickle cell anemia</li> <li>• sleep center accredited by American Academy of Sleep Medicine (AASM)</li> <li>• sleep laboratory accredited by AASM</li> </ul>

<b>Urology (6 services)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by the American College of Surgeons or state licensing board
Treatment options	<p>Offering the following:</p> <ul style="list-style-type: none"> <li>• shock wave lithotripsy</li> <li>• ureteroscopy</li> <li>• percutaneously nephrolithotripsy/nephrolithotomy</li> <li>• laparoscopic variocolectomy</li> <li>• laparoscopic orchiopexy</li> </ul>

### **Advanced Technology**

Hospitals provide access to key diagnostic and treatment technologies directly, through the hospital's health system or a local community network, or through a contractual arrangement or joint venture with another community provider. On- and off-site services received equal credit. Data are from the Pediatric Hospital Survey. The values for this measure were based on specialty-specific mixes of technology as listed in *Table 3*. Definitions can be found in the glossary in *Appendix A*.

**Table 3. Advanced Technologies by Specialty**

Specialty	Technologies
<b>Cancer (12 technologies)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Intraoperative magnetic resonance imaging (ioMRI)</li> <li>• 3-Tesla magnetic resonance imaging (3T MRI)</li> <li>• Image-guided radiation therapy (IGRT)</li> <li>• Intensity-modulated radiation therapy (IMRT)</li> <li>• Bone scan</li> <li>• Linac or other linear particle accelerator, Gamma knife, Cyber knife, or other shaped-beam stereotactic radiation therapies</li> <li>• Magnetic resonance spectroscopy (MRS)</li> <li>• Therapeutic/diagnostic meta-iodine-benzyl-guanidine with I-131 radionuclide (I-131 MIBG)</li> <li>• Functional magnetic resonance (fMR)</li> <li>• Intraoperative ultrasound for vascular access procedures</li> <li>• Pediatric interventional radiology equipment and room</li> </ul>
<b>Cardiology &amp; Heart Surgery (5)</b>	<ul style="list-style-type: none"> <li>• CT angiography</li> <li>• Cardiac MRI</li> <li>• Transcatheter arrhythmia ablation methodologies (Three-dimensional mapping, Cryoablation, Radiofrequency ablation)</li> <li>• ECMO program (<i>1 additional point if designated a center of excellence by ELSO</i>)</li> </ul>
<b>Diabetes &amp; Endocrinology (9)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Diagnostic radioisotope scan</li> <li>• Therapeutic radioiodine treatment for Graves disease</li> <li>• Therapeutic radioiodine treatment for thyroid cancer</li> <li>• Fine needle aspiration of thyroid nodule</li> <li>• Thyroidectomy</li> <li>• Dual-energy x-ray absorptiometry (DXA) scans using pediatric software and normative data</li> <li>• Endocrine testing and infusion studies</li> <li>• Radiation isolation room</li> </ul>
<b>Gastroenterology (9)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Magnetic resonance cholangiopancreatography</li> <li>• CT enterography</li> <li>• Dexa scan</li> <li>• Capsule endoscopy</li> <li>• Endoscopic band ligation</li> <li>• Esophageal impedance monitoring</li> <li>• Endoscopic retrograde cholangiopancreatography</li> <li>• Antroduodenal and full colonic motility studies</li> </ul>

(continued)



**Table 3. Advanced Technologies by Specialty (continued)**

Specialty	Technologies
<b>Neonatology (5)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Continuous EEG monitoring with pediatric neurology support</li> <li>• Un-sedated MRI (e.g., MRI-compatible neonatal transporter )</li> <li>• Molecular diagnostic/virology laboratory</li> <li>• Specialized chemistry laboratory with tandem mass spectroscopy</li> </ul>
<b>Nephrology (1)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> </ul>
<b>Neurology &amp; Neurosurgery (4)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• 3T MRI</li> <li>• Neurophysiological intraoperative monitoring</li> <li>• Magnetoencephalography</li> </ul>
<b>Orthopedics (3)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Bone scan</li> <li>• Remote retrieval of test results, images, and medical records</li> </ul>
<b>Pulmonology (1)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> </ul>
<b>Urology (4)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Urodynamic equipment onsite</li> <li>• Video pediatric urodynamic fluoroscopy</li> <li>• Surgical robot (for urology surgery)</li> </ul>

### **Clinical Support Services**

Many hospitals provide access to medical and surgical clinical support services through the hospital’s health system, a local community network, or a contractual arrangement or joint venture with another provider in the community. On- and off-site services received equal credit. Up to 10 services are included in the clinical support services, depending on the specialty. Data came from the Pediatric Hospital Survey. For eligible hospitals, specialty-specific mixes of medical and surgical services are used in computing the points for this measure. *Table 4* presents the complete list of medical and surgical services considered for each specialty in 2011. Definitions can be found in the glossary in *Appendix A*.

### **Commitment to Clinical Research**

Networks, clinical trials, and other research activities advance the ability of the field to treat pediatric patients, and enhance care by making new or novel treatments available at centers that participate in such research. In Diabetes & Endocrinology, Gastroenterology, Nephrology, Orthopedics, and Pulmonology, hospitals received 1 point for participating in specialty-specific clinical research activities such as clinical trials or other translational research activities.

**Table 4. Clinical Support Services by Specialty**

Clinical Support Service	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
Dedicated surgical intensive care unit (SICU) or beds	●	●	●	●		●	●	●	●	●
Genetic testing/counseling	●		●		●					
Multidisciplinary pediatric acute pain/sedation service (available onsite 24/7) hours a day)	●	●		●	●	●	●	●	●	●
Neonatal intensive care unit (NICU)	●	●	●	●		●	●	●	●	●
Pediatric anesthesia program (available onsite 24 hours a day)	●	●	●	●	●	●	●	●	●	●
Pediatric infectious disease program (available onsite 24/7)	●	●	●	●	●	●	●	●	●	●
Pediatric pain management program (available onsite 24/7)	●	●	●	●	●	●	●	●	●	●
Pediatric intensive care unit (PICU)	●	●	●	●		●	●	●	●	●
Rapid response team (available onsite 24/7)	●	●	●	●	●	●	●	●	●	●
Reverse isolation/infection control facilities	●	●	●	●	●	●	●	●	●	●
<b>Total Elements</b>	<b>10</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>7</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>	<b>9</b>

In Cancer, hospitals received up to 9 total points for participating in clinical research activities such as clinical trials or other translational research activities. Hospitals received up to 4 points for participating in cancer research networks such as the Children’s Oncology Group, National Cancer Institute (NCI) Phase 1/Pilot Consortium, NCI designated cancer center, or another cancer-related organized clinical research network. Hospitals received up to 5 additional points for engaging in investigator-initiated phase I and II clinical trials (translational research) for leukemia, brain tumors, sarcomas, neuroblastomas, or trials for biologically targeted novel agents that are not disease specific (e.g., tyrosine kinase inhibitors).

In Cardiology & Heart Surgery, hospitals received up to 7 total points for participating in an externally audited, national quality improvement research networks. Hospitals received 1 point each for participating in a virtual pediatric ICU system, Congenital Cardiac Anesthesia Society, National Cardiovascular Disease Registry—Improving pediatric and adult congenital treatment, or National Cardiovascular Disease Registry—Internal Cardioverter Defibrillator. Hospitals received an additional point if they were a primary or auxiliary clinical center for the

Pediatric Heart Research Network (PHRN). Hospitals could receive up to another 2 points based on the number of PHRN protocols being tracked in the program: 1 point for tracking one protocol and 2 points for tracking two or more protocols.

In Neonatology, hospitals received up to 4 total points for participation in externally audited, national neonatal intensive care unit (NICU) treatment and quality-improvement research networks. Hospitals received 1 point each for participation in the Vermont Oxford Network or Children's Hospitals Neonatal Consortium/Child Health Corporation of America database, Extracorporeal Life Support Organization (ELSO) data exchange network/registry, or other clinical research or data exchange program. Hospitals received 1 point for participating in clinical research activities such as clinical trials or other translational research activities.

In Neurology & Neurosurgery, hospitals received up to 2 total points: 1 point for belonging to a national Phase 1 neuro-oncology clinical research consortium and 1 point for participating in clinical research activities such as clinical trials.

In Urology, hospitals received up to 3 total points for participating in the following research activities: prospective randomized clinical trials, prospective observational studies, or prospective clinical databases on patient care.

### **Commitment to Involving Parents and Family**

This measure reflects the extent to which a hospital involves parents and families in care. It applied to all pediatric specialties and was worth up to 6 points: 1 point for having a parent advisory committee, plus 1 point if the committee meets one or two times a year and 2 points if the committee meets at least three times a year. Hospitals received up to 3 additional points if the hospital met all of the following requirements: at least one parent or family member is an active member of the strategic or facility committee; at least one parent or family member is an active member of one or more standing committees (e.g., quality improvement, patient safety, ethics); and parents or family members are regularly involved in clinical decision making in ways such as family-centered rounds, care conferences, or other participatory programs.

### **Commitment to Quality Improvement**

Hospitals received up to 7 points in all specialties for participation in quality improvement activities. Such activities promote internal review and improvement programs and procedures that often lead to improvements in care. Hospitals received up to 2 points for participating in an external review process for measuring patient/parent satisfaction and for

publicly reporting performance data on one or more quality metrics. Hospitals received up to 5 additional points for implementing specialty-specific quality measures. These include a formal program review plan, performance-based metrics, patient data tracking, and participation in up to two national quality initiatives. For Neonatology the quality initiatives included having a specified quality improvement or safety leader with at least .25 FTE of his or her time devoted to quality improvement or safety.

In Cardiology & Heart Surgery, hospitals could receive an additional 5 points in addition to the 7 points described above by participating in and contributing data to any of the following quality improvement programs: Society of Thoracic Surgeons Congenital Heart Surgery Database, Congenital Heart Surgeons' Society data center, Child Health Corporation of America collaborative, National Pediatric Cardiology–Quality Improvement Collaborative, and/or the Congenital Cardiovascular Interventional Study Consortium.

### **Fellowship Programs**

Participation in fellowship training programs represents a commitment by hospitals to provide high-quality care in a specialty area and assure that the program meets standards of quality. Hospitals that offer fellowship programs accredited by the Accreditation Council for Graduate Medical Education were awarded 1 point for each fellowship program that had at least one active fellow in the program in the past year. *Table 5* indicates fellowships credited.

### **Nurse Magnet Hospital**

“Nurse Magnet” is a formal designation by the Magnet Recognition Program®, developed by the American Nurses Credentialing Center to recognize hospitals that meet specific standards of nursing excellence. The list of Nurse Magnet hospitals is updated throughout the year as hospitals apply for designation and redesignation. Hospitals with Magnet Recognition Program® status as of March 1, 2011, received credit in all specialties. The current list of all Nurse Magnet hospitals is at <http://www.nursecredentialing.org/MagnetOrg/searchmagnet.cfm>.

### **Nurse-Patient Ratio**

This measure is a relative ratio of the number of nurses to the average daily patient census. The numerator is the number of on-staff registered nurses (RNs) devoted to inpatient clinical care, expressed as FTEs. Nurses are included only if they have an RN degree from an approved nursing school and hold a current state license. The denominator is the average daily number of pediatric inpatients. The source was the Pediatric Hospital Survey. This measure was

used in all specialties. For Neonatology, the measure used an equivalent for nurses dedicated specifically to the NICU and the average daily census of NICU patients.

Standardization was performed to ensure that the data were distributed normally, with a mean of zero. This was necessary to prepare the data for factor analysis.

**Table 5. Fellowship Programs by Specialty**

Fellowship Program	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
Child neurology					●		●			
Congenital cardiac surgery					●					
Neonatal-perinatal medicine					●					
Neurosurgery (with focus on pediatrics)					●		●			
Pediatric cardiology		●			●					
Pediatric endocrinology			●		●					
Pediatric gastroenterology				●	●					
Pediatric hematology-oncology	●				●					
Pediatric infectious diseases					●					
Pediatric nephrology					●	●				
Pediatric orthopedics					●			●		
Pediatric pathology	●				●					
Pediatric pulmonology					●				●	
Pediatric urology					●					●
Thoracic surgery (with focus on pediatric cardiothoracic surgery)		●			●					
<b>Total Elements</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>15</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>1</b>

### Overall Infection Prevention

The Overall Infection Prevention measure captures the commitment of a hospital to reducing the risk of infection to a child. A core set of submeasures for all specialties was worth up to 17 points, as shown in *Table 6*. Specialty-specific measures in all specialties except Urology allowed an additional 4 to 30 points, depending on the specialty.

**Table 6. Core Infection Prevention Measures—All Specialties (17 services)**

Description	Points
Hospitals received 1 point for tracking hand hygiene compliance rates. Up to 2 additional points were awarded for compliance: 1 point if $\geq 80\%$ and $< 90\%$ ; 2 points if $\geq 90\%$ .	3
Providing financial support for a pediatric infectious disease specialist to serve as a dedicated director of the infection prevention program	1
Receiving certification from the Certification Board in Infection Control of at least 75% of the hospital's eligible infection preventionists	1
Ensuring that at least 75% of the following staff received an influenza vaccination: <ul style="list-style-type: none"> <li>• Attending physicians</li> <li>• Other on-staff physicians</li> <li>• Nursing staff</li> </ul>	3
Ensuring that at least 50% of the following staff received an Tdap vaccination: <ul style="list-style-type: none"> <li>• Attending physicians</li> <li>• Other on-staff physicians</li> <li>• Nursing staff</li> </ul>	3
Offering the following vaccinations free to all of a patient's household or caregivers: <ul style="list-style-type: none"> <li>• Influenza vaccinations</li> <li>• Tdap vaccinations</li> </ul>	2
Publishing a yearly antimicrobial summary that is readily available to clinicians	1
Restricting laboratory reporting of susceptibilities to some antimicrobials to prevent overuse of some drugs, such as meropenem	1
Restricting pharmacy use of selected antimicrobial agents to prevent resistance patterns that may develop from overuse	1
Performing surveillance for 1 or more respiratory viruses for all patients or for high-risk patients	1

### *Specialty-Specific Infection Prevention Measures*

*Cancer (4 additional points).* Hospitals received 1 point for actively tracking seasonal influenza vaccinations in leukemia patients. Up to 3 additional points were awarded for each the percentage vaccinated as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $\geq 90\%$ .

*Cardiology & Heart Surgery (3 additional points).* Hospitals received 1 point for actively tracking preoperative antibiotic prophylaxis. Up to 2 additional points were awarded for the percentage of compliance as follows: 1 point if  $\geq 75\%$  and  $< 90\%$ ; 2 points if  $\geq 90\%$ .

*Diabetes & Endocrinology (4 additional points).* Hospitals received 1 point for actively tracking seasonal influenza vaccinations in diabetes outpatients. Up to 3 additional points were awarded for the percentage vaccinated as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $\geq 90\%$ .

*Gastroenterology (8 additional points).* Hospitals received 1 point each (up to 2 points) for actively tracking seasonal influenza vaccinations for short-gut patients and/or liver-transplant patients. Up to 3 additional points were awarded for each of the 2 groups (up to 6 points) for the percentage vaccinated as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $\geq 90\%$ .

*Neonatology (2 additional points).* Hospitals received 1 point for participating in NHSN as a level III or level II/III center and 1 point for reporting central line-associated BSI rates stratified according to NHSN guidelines for birth weight.

*Nephrology (30 additional points).* Hospitals received 1 point each (up to 6 points) for actively tracking seasonal influenza and/or pneumococcal vaccinations for hemodialysis patients, peritoneal patients, and/or kidney transplant patients. Up to 3 additional points were awarded for each of the 6 groups (up to 18 points) for the percentage vaccinated as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $\geq 90\%$ . Hospitals received 6 additional points based on having a lower peritonitis rate (months of dialyses/cases of peritonitis) for patients on chronic peritoneal dialysis for the last two calendar years. In each year, up to 3 points were awarded as follows: 1 point for a peritonitis rate of  $< 10$  months between cases; 2 points for a rate of  $\geq 10$  and  $< 20$  months between cases; 3 points for a rate of  $\geq 20$  months between peritonitis cases.

*Neurology & Neurosurgery (10 additional points).* Hospitals received 1 point for actively tracking preoperative antibiotic prophylaxis. Up to 2 additional points were awarded for the percentage of compliance as follows: 1 point if  $\geq 75\%$  and  $< 90\%$ ; 2 points if  $\geq 90\%$ . Hospitals received 1 point each for actively tracking surgical site infections (SSIs) for shunt placement surgeries. Up to 3 additional points were awarded for each of two measures evaluating the percentage of SSIs for shunt placements and revision surgeries for shunt placements occurring within 90 days as follows: 1 point if  $> 9\%$  and  $\leq 15\%$ ; 2 points if  $> 3\%$  and  $\leq 9\%$ ; 3 points if  $\leq 3\%$ .

*Orthopedics (6 additional points).* Hospitals received 1 point for actively tracking preoperative antibiotic prophylaxis. Up to 2 additional points were awarded for the percentage of compliance as follows: 1 point if  $\geq 75\%$  and  $< 90\%$ ; 2 points if  $\geq 90\%$ . Hospitals received 1 point for actively monitoring surgical site infections using NHSN criteria. Up to 2 additional points were awarded for low rates of SSIs: 1 point if 4 to 10; 2 points if  $\leq 3$ .

*Pulmonology (21 additional points).* Hospitals received 1 point each (up to 5 points) for actively tracking seasonal influenza vaccinations for asthma patients, CF patients, muscular dystrophy patients and/or tracheostomy-dependent patients, and pneumococcal vaccinations for

tracheostomy-dependent patients. Up to 3 additional points were awarded for each of the 5 groups (up to 15 points) for the percentage vaccinated as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $\geq 90\%$ . Hospitals received 1 point for implementing infection control guidelines recommended by the Cystic Fibrosis Foundation.

*Urology (0 additional points).* There are currently no additional infection prevention measures in Urology.

## **Patient and Family Services**

The Patient and Family Services measure evaluates the access that patients and their families have to medical specialists and services. Data for this measure came from the Pediatric Hospital Survey. A core set of submeasures for all specialties was worth up to 8 points, which included providing direct access to a family resource center, sleep rooms for parents/siblings, a school intervention program, a Ronald McDonald house (or other residential facility), certified child life specialists, family support specialists, pediatric psychologists, and interpreter services.

In Diabetes & Endocrinology, hospitals could receive an additional 1 point for offering support groups for special populations such as patients with Turner Syndrome.

In Neonatology, hospitals could receive up to 10 additional points. Hospitals received up to 8 points for offering the following patient and family services: family support center, breast pumping rooms, lactation specialists, parental visitation 24/7, sibling visitation, NICU-specific parent-to-parent support groups; NICU-specific Parent Advisory committee which meets regularly, and/or NICU-specific parent advisory committee representation on key hospital committees. Hospitals received 1 point if less than 25% of their NICU beds were within single-bed rooms and 2 points if 25% or more of the NICU beds were in single-bed rooms.

In Nephrology, hospitals could receive up to 3 additional points for offering the following programs to support patients in a pediatric maintenance dialysis program: teachers dedicated to working with patients, a standard review of school perform and patient's Individualized Education Program, and/or summer camp.

## **Subspecialist Availability**

This measure evaluates the presence of a variety of physician specialists, surgeons, and dedicated full-time medical staff who are critical to the delivery of appropriate care by pediatric hospitals. *Table 7* identifies the relevant specialists, surgeons, and other medical staff for each



pediatric specialty. Hospitals received 1 point for each appropriate specialist or surgeon, and 1 point for having at least 1.0 FTE of the other medical staff relevant to the specialty.

**Table 7. Subspecialists by Specialty**

<b>Cancer (13 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Head and Neck Surgeon</li> <li>• Pediatric General Surgeon</li> <li>• Pediatric Neurosurgeon</li> <li>• Pediatric Ophthalmology Surgeon</li> <li>• Pediatric Orthopedic Surgeon</li> <li>• Pediatric Urology Surgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

<b>Cardiology &amp; Heart Surgery (14 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Cardiothoracic Surgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Cardiothoracic Surgeon</li> <li>• Pediatric Cardiac Intensivist</li> <li>• Pediatric Cardiac Interventionalist</li> <li>• Pediatric Cardiac Electrophysiologist</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> <li>• Cardiology Fellows</li> <li>• Cardiac Surgery Fellows</li> </ul>

(continued)

**Table 7. Subspecialists by Specialty (continued)**

<b>Diabetes &amp; Endocrinology (11 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Head and Neck Surgeon</li> <li>• Pediatric General Surgeon</li> <li>• Pediatric Neurosurgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Endocrinologist</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

<b>Gastroenterology (9 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Gastroenterologist</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

(continued)

**Table 7. Subspecialists by Specialty (continued)**

<b>Neonatology (16 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Head and Neck Surgeon</li> <li>• Pediatric Cardiothoracic Surgeon</li> <li>• Pediatric General Surgeon</li> <li>• Pediatric Neurosurgeon</li> <li>• Pediatric Ophthalmology Surgeon</li> <li>• Pediatric Orthopaedic Surgeon</li> <li>• Pediatric Urology Surgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Neonatologist</li> <li>• Critical Care Certified Registered Nurse</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

<b>Nephrology (9 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Nephrologist</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

(continued)

**Table 7. Subspecialists by Specialty (continued)**

<b>Neurology &amp; Neurosurgery (13 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> <li>• Pediatric Neurosurgeon</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Neurologist</li> <li>• Pediatric Neurosurgeon</li> <li>• Certified Neuroscience Nurse</li> <li>• Other Registered Nurse</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

<b>Orthopedics (17 points)</b>	
Physician specialists	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Rheumatologist</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	<p>At least 1 of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> <li>• Pediatric Orthopaedic Surgeon</li> <li>• Hand Surgery Fellow</li> <li>• Spinal Surgery Fellow</li> <li>• Musculoskeletal Oncology Surgical Fellow</li> <li>• Sports Medicine Surgical Fellow</li> </ul>
Other medical staff	<p>At least 1.0 FTE of the following staff:</p> <ul style="list-style-type: none"> <li>• Pediatric Orthopaedic Surgeon</li> <li>• General Orthopaedist</li> <li>• Clinical Registered Nurses</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

(continued)

**Table 7. Subspecialists by Specialty (continued)**

<b>Pulmonology (11 points)</b>	
Physician specialists	At least 1 of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	At least 1 of the following staff: <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> </ul>
Other medical staff	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Pulmonologist</li> <li>• Pediatric Sleep Medicine Physician</li> <li>• Clinical Registered Nurse</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

<b>Urology (11 points)</b>	
Physician specialists	At least 1 of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Anesthesiologist</li> <li>• Pediatric Critical Care Specialist</li> <li>• Pediatric Radiologist specializing in Diagnostic Radiology</li> <li>• Pediatric Radiologist specializing in Interventional Radiology</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	At least 1 of the following staff: <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> <li>• Pediatric Urology Surgeon</li> </ul>
Other medical staff	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Urologist</li> <li>• Clinical Registered Nurse</li> <li>• Nurse Practitioner</li> <li>• Physician Assistants</li> </ul>

**Volume of Patients**

Unless noted otherwise, volume measures indicate the number of unique patients in the past 12 months who had the specified diagnoses or conditions or who received the specified procedures or treatments. If data were unavailable for the most recent year, hospitals were instructed to use data from the most recent 12 months that data were available.

Points were assigned based on the distribution of volume across all hospitals. Hospitals with no volume or that did not respond received 0 points. Hospitals with volume in the lowest one-third of the distribution for all hospitals received 1 point; hospitals with volume in the middle one-third received 2 points, and hospitals with volume in the highest one-third received 3 points. The points at the high end of the range were used to cap these measures to ensure that outliers did not significantly affect scoring. For items with extremely low volume, such as cardiac hybrid procedures, the measure was divided into low and high only for a maximum of 2 points. *Table 8* identifies the volume measures used by specialty and the points assigned to volume scores within a certain range.

**Table 8. Specialty-Specific Volume Measures**

<b>Cancer Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>New-patient volume, 2 years</i></b> (max points=3)	1-399	400-799	800+
<b><i>Patient volume</i></b> (max points=9)			
• Acute lymphocytic leukemia	1-199	200-399	400+
• Brain tumors	1-149	150-299	300+
• Solid tumors	1-299	300-599	600+
<b><i>Surgical volume*</i></b> (max points=6)			
• Brain tumors	1-149	150-299	300+
• Solid tumors	1-299	300-599	600+

\*volume represents operating room visits, not patients

<b>Cardiology &amp; Heart Surgery Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Catheter procedure volume*</i></b> (max points=24)			
• Balloon angioplasty procedures	1-69	70-139	140+
• Balloon valvuloplasty procedures	1-19	20-39	40+
• Stent implantation procedures	1-39	40-79	80+
• Transcatheter occlusion of cardiac shunt procedures	1-69	70-139	140+
• Atrial tachycardia procedures	1-19	20-39	40+
• Supraventricular tachycardia procedures	1-39	40-79	80+
• Ventricular tachycardia procedures	1-4	5-8	9+
• Aortic/pulmonary catheter-based valvuloplasty	1-6	7-12	13+
<b><i>Norwood surgery volume</i></b> (max points=6)			
• HLHS patients receiving Norwood Stage 1	1-8	9-16	17+
• Non-HLHS patients receiving Norwood Stage 1	1-3	4-6	7+

(continued)

**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Cardiology &amp; Heart Surgery Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Surgical volume</i></b> (max points=18)			
• Year 1: Risk adjusted classification for congenital heart surgery (RACHS-1), Level 3	1-69	70-139	140+
• Year 2: RACHS-1, Level 3	1-69	70-139	140+
• Year 1: RACHS-1 Level 4	1-19	20-39	40+
• Year 2: RACHS-1 Level 4	1-19	20-39	40+
• Year 1: RACHS-1 Levels 5 & 6	1-9	10-19	20+
• Year 2: RACHS-1 Levels 5 & 6	1-9	10-19	20+

<b>Diabetes &amp; Endocrinology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Patient volume</i></b> (max points=27)			
• Type 1 primary care diabetes outpatients	1-299	300-799	800+
• Type 2 primary care diabetes outpatients	1-74	75-149	150+
• Type 1 primary care diabetes inpatients	1-149	150-299	300+
• Type 2 primary care diabetes inpatients	1-19	20-39	40+
• Nondiabetes endocrine disorders outpatients	1-1,999	2,000-3,999	4,000+
• Nondiabetes endocrine disorders inpatients	1-124	125-249	250+
• Congenital adrenal hyperplasia	1-39	40-79	80+
• CNS and endocrine tumors	1-39	40-79	80+
• Diabetes insipidus	1-24	25-49	50+
<b><i>Procedure volume*</i></b> (max points=18)			
• Diagnostic radioisotope	1-19	20-39	40+
• Therapeutic radioiodine for Graves disease	1-5	6-10	11+
• Therapeutic radioiodine for thyroid cancer	1-3	4-7	8+
• Fine needle aspiration of thyroid nodule	1-4	5-9	10+
• Thyroidectomy	1-4	5-9	10+
• Dual-energy x-ray absorptiometry (DXA) scans	1-39	40-79	80+

\*volume represents procedures, not patients

(continued)

**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Gastroenterology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Nonsurgical procedure volume*</i></b> (max points=15)			
• Capsule endoscopy	1-19	20-39	40+
• Endoscopic band ligation	1-9	10-19	20+
• Esophageal impedance monitoring	1-49	50-99	100+
• Endoscopic retrograde cholangiopancreatography	1-29	30-59	60+
• Antroduodenal and full colonic motility studies	1-19	20-39	40+
<b><i>Patient volume</i></b> (max points=57)			
• Intestinal rehabilitation	1-44	45-89	90+
• Cystic fibrosis treatment	1-99	100-199	200+
• Total parenteral nutrition support	1-299	300-599	600+
• Pediatric intensive feeding	1-299	300-599	600+
• Multidisciplinary childhood obesity	1-299	300-599	600+
• Inflammatory bowel	1-299	300-599	600+
• Multidisciplinary allergic disease	1-299	300-599	600+
• Foreign body	1-49	50-99	100+
• Gastrointestinal bleeding	1-149	150-299	300+
• Pseudoobstruction	1-12	13-24	25+
• Short bowel syndrome	1-29	30-59	60+
• Chronic liver disease	1-69	70-139	140+
• Chronic pancreatitis	1-34	35-69	70+
• Biliary atresia	1-19	20-39	40+
• Portal hypertension	1-19	20-39	40+
• Failure to thrive	1-399	400-799	800+
• Crohn's disease	1-199	200-399	400+
• Ulcerative colitis	1-74	75-149	150+
• Eosinophilic Esophagitis	1-74	75-149	150+
<b><i>Surgical volume</i></b> (max points=10)			
• Hepatoportoenterostomy or Kasai procedure	1-4	5+	-
• Bowel lengthening	1-3	4+	-
• Heller myotomy	1-2	3+	-
• Laparoscopic fundoplication	1-29	30+	-
• Bariatric surgery	1-3	4+	-

\*procedures, not patients

(continued)



**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Neonatology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Patient volume</i></b> (max points=21)			
• Congenital diaphragmatic hernia	1-7	8-15	16+
• Hirschsprung's disease treatment	1-4	5-9	10+
• Hypothermia treatment	1-8	9-17	18+
• Spina bifida treatment	1-7	8-15	16+
• Surgical care of gastroschisis	1-8	9-17	18+
• Tracheoesophageal fistula	1-4	5-9	10+
• Cardiac surgeries	1-44	45-89	90+

<b>Nephrology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Catheter procedure volume*</i>, 2 years</b> (max points=12)			
• Permanent hemodialysis vascular central venous catheters placed in children <5 years of age)	1-9	10+	n/a
• Permanent hemodialysis vascular central venous catheters placed in children, 5–19 years of age	1-19	20+	n/a
• Hemodialysis arteriovenous (AV) fistula/graft access placements in children <5 years of age	1	2+	n/a
• Hemodialysis AV fistula/graft access placements in children, 5–19 years of age	1-5	6+	n/a
• Peritoneal dialysis catheters placed in children <5	1-9	10+	n/a
• Peritoneal dialysis catheters placed in children and adolescents, 5-19	1-9	10+	n/a
<b><i>Dialysis volume, 2 years</i></b> (max points=18)			
• Hemodialysis with children <5 years of age	1-4	5-7	8+
• Hemodialysis with children 5–19 years of age	1-24	25-49	50+
• Peritoneal dialysis with children <5 years of age	1-8	9-16	17+
• Peritoneal dialysis with children 5–19 years of age	1-24	25-49	50+
• Dialysis treatment volume in days (previous year)	1 – 50	51-100	100+
• Dialysis treatment volume in days (current year)	1 – 50	51-100	100+
<b><i>Kidney biopsy procedure volume, 2 years</i></b> (max points=9)			
• Native nontransplant kidney biopsies	1-59	60-119	120+
• Nonprotocol kidney transplant biopsies	1-32	33-64	65+
• Protocol kidney transplant biopsies	1-32	33-64	65+
<b><i>Kidney transplant volume, 2 years</i></b> (max points=6)			
• Deceased-donor kidney transplant patients	1-12	13-24	25+
• Living-donor kidney transplant patients	1-10	11-20	21+

\*procedures, not patients

(continued)

**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Nephrology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Patient volume, 2 years</i></b> (max points=33)			
• Acute kidney insufficiency	1-149	150-299	300+
• Primary nephrotic syndrome	1-29	30-59	60+
• Membranoproliferative glomerulonephritis	1-8	9-16	17+
• Membranous nephropathy	1-10	11-20	21+
• IgA nephropathy	1-20	21-40	41+
• Henoch-Schönlein purpura	1-29	30-59	60+
• Systemic lupus erythematosus with renal involvement	1-14	15-29	30+
• Hemolytic uremic syndrome	1-10	11-20	21+
• Chronic kidney disease (nontransplant) Stages II–IV	1-39	40-79	80+
• Primary or essential hypertension	1-10	11-20	21+
• Polycystic kidney disease	1-39	40-79	80+

<b>Neurology &amp; Neurosurgery Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Epilepsy treatment volume*</i></b> (max points=15)			
• Initial medical evaluations for epilepsy	1-299	300-599	600+
• Number of standard EEG evaluations	1-799	800-1,599	1,600+
• Number of video EEG (vEEG) evaluations	1-399	400-799	800+
• Evaluations for surgery related to epilepsy	1-79	80-159	160+
• Number of surgical procedures for epilepsy	1-34	35-69	70+
<b><i>New-patient volume</i></b> (max points=33)			
• Brain tumors	1-69	70-139	140+
• Status epilepticus	1-299	300-599	600+
• Craniosynostosis (nonsyndromic)	1-149	150-299	300+
• Craniosynostosis (syndromic)	1-149	150-299	300+
• Hydrocephalus	1-149	150-299	300+
• Cerebrovascular accidents (stroke)	1-49	50-99	100+
• Vein of Galen malformations	1-14	15-29	30+
• Chiari I malformation/syringomyelia	1-59	60-119	120+
• Chronic headaches	1-749	750-1,299	1,300+
• Cerebral palsy	1-149	150-299	300+
• Congenital spinal deformity	1-99	100-199	200+

\*procedures, not patients

(continued)

**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Neurology &amp; Neurosurgery Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Surgical volume</i></b> (max points=36)			
• Brain tumors (benign/malignant)	1-39	40-79	80+
• Craniosynostosis	1-29	30-59	60+
• Hydrocephalus patient shunt procedures	1-49	50-99	100+
• Implantation of ICP monitors for head trauma	1-19	20-39	40+
• Medically intractable epilepsy	1-24	25-49	50+
• Spinal dysraphism	1-19	20-39	40+
• Chiari I malformation/syringomyelia	1-19	20-39	40+
• Intracranial procedures for head trauma	1-14	15-29	30+
• Endoscopic third ventriculostomy	1-39	40-79	80+
• Brachial plexus exploration/reconstruction	1-7	8-15	16+
• Spasticity	1-19	20-39	40+
• Vascular cases including endovascular procedures	1-19	20-39	40+

<b>Orthopedics Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Patient volume</i></b> (max points=27)			
• Spina bifida clinic	1-149	150-299	300+
• Spasticity or cerebral palsy clinic	1-299	300-599	600+
• Skeletal dysplasia clinic	1-99	100-199	200+
• Brachial plexus clinic	1-49	50-99	100+
• Neurofibromatosis clinic	1-49	50-99	100+
• Muscular dystrophy clinic	1-49	50-99	100+
• Pain clinic	1-99	100-199	200+
• Sports medicine clinic	1-999	1,000-1,999	2,000
• Scoliosis patients	1-49	50-99	100+
<b><i>Procedure volume*</i></b> (max points=48)			
• Motion laboratory evaluations	1-24	25-49	50+
• Developmental dysplasia of the hip	1-29	30-59	60+
• Perthes disease	1-9	10-19	20+
• Slip capital femoral epiphysis	1-24	25-49	50+
• Complex hip surgery, children ages 12–18	1-14	15-29	30+
• Clubfeet—minimally invasive treatment	1-9	10-19	20+
• Clubfeet—more extensive open procedure	1-14	15-29	30+
• Knee injury—anterior cruciate ligament repair	1-39	40-79	80+

(continued)

**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Orthopedics Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
• Brachial plexus injury—primary repair with patients < 1 years of age	1	2-3	4+
• Brachial plexus injury—secondary procedure with patients ≥ 1 years of age)	1-29	30-59	60+
• Operative reduction and fixation of the supracondylar fracture of the humerus	1-124	125-249	250+
• Operative reduction and fixation of the femur fractures with patients 6–12 years of age	1-19	20-39	40+
• Osteoarticular infections, including methicillin-resistant Staphylococcus (MRSA)	1-49	50-99	100+
• Operative reduction and fixation of both bone fractures of the forearm	1-34	35-69	70+
• Limb salvage for malignant tumors	1-19	20-39	40+
• Implantation of a Vertical Expandable Prosthetic Titanium Rib	1-8	9-15	16+

\*procedures, not patients

<b>Pulmonology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Nonsurgical procedure volume*</i></b> (max points=15)			
• 12 channel polysomnographic studies	1-699	700-1,399	1,400+
• Multiple sleep latency test (MSLT) studies	1-29	30-59	60+
• Infant pulmonary function testing	1-124	125-249	250+
• Bronchoscopy	1-19	20-39	40+
• Non-invasive positive pressure ventilation support	1-299	300-599	600+
<b><i>Patient volume</i></b> (max points=21)			
• Asthma inpatients	1-399	400-799	800+
• Asthma outpatients	1 -1,499	1,500-2,999	3,000+
• Asthma patients in primary care clinics	1 -1,499	1,500-2,999	3,000+
• CF patients	1-124	125-249	250+
• Lung disease prematurity	1-99	100-199	200+
• Muscular dystrophy	1-39	40-79	80+
• Ventilator dependent patients	1-29	30-59	60+

\*procedures, not patients

(continued)

**Table 8. Specialty-Specific Volume Measures (continued)**

<b>Urology Volume Measures</b>	<b>Low Volume (1 point)</b>	<b>Medium Volume (2 points)</b>	<b>High Volume (3 points)</b>
<b><i>Minimally invasive procedure volume</i></b> (max points=18)			
• Shock wave lithotripsy	1-9	10-19	20+
• Uteroscopy	1-24	25-49	50+
• Percutaneously nephrolithotripsy	1-7	8-14	15+
• Laparoscopic orchiopexy	1-24	25-49	50+
• Robotic laparoscopic pediatric surgery	1-9	10-19	20+
• Urodynamic procedures	1-199	200-399	400+
<b><i>Patient volume</i></b> (max points=24)			
• Pediatric urology outpatient visits (2 years)	1-7999	8,000-15,999	16,000+
• Pediatric urology surgical cases	1-999	1000-1999	2,000+
• Spina bifida clinic	1-124	125-249	250+
• Voiding dysfunction clinic	1-599	600-1,199	1,200+
• Comprehensive stone program	1-99	100-199	200+
• Prenatal clinic	1-99	100-199	200+
• Disorders of sexual differentiation clinic	1-49	50-99	100+
• Genitourinary reconstructive surgery/exstrophy clinic	1-49	50-99	100+
<b><i>Surgical volume</i></b> (max points=25)			
• Open pyeloplasty	1-19	20+	n/a
• Open nephrectomy	1-9	10+	n/a
• Open partial nephrectomy	1	2+	n/a
• Laparoscopic pyeloplasty without a robot	1-3	4+	n/a
• Laparoscopic nephrectomy without a robot	1-4	5+	n/a
• Laparoscopic partial nephrectomy without a robot	1	2+	n/a
• Laparoscopic pyeloplasty with a robot	1+	n/a	n/a
• Laparoscopic nephrectomy with a robot	1+	n/a	n/a
• Laparoscopic partial nephrectomy with a robot	1+	n/a	n/a
• Newborn exstrophy closures	1-2	3+	n/a
• Reconstructive procedures for incontinence	1-39	40+	n/a
• Posterior urethral valve ablation	1-13	14+	n/a
• Proximal urethroplasty for hypospadias	1-79	80+	n/a
• Female reconstructive procedures	1-5	6+	n/a

### **Use of Health Information Technology**

In each specialty, hospitals received up to 10 points for incorporating and using a computerized physician order entry (CPOE) system and electronic medical records (EMR). Hospitals received 1 point for implementing a CPOE system, 1 point for documenting 95% or

more of inpatient medication orders, 1 point for identifying medication orders if an allergy to the medication is documented, 1 point for including alerts for dosing errors for high-risk medications, and up to 2 points for providing details on two or more current projects CPOE that focus on dosing errors for high-risk medications. Hospitals received up to 4 points for EMR: 1 point for implementation, 1 point if the EMR identifies and reports potential adverse events for patients, and up to 2 points for providing details on two current projects with the EMR system that identify potential adverse events.

## **B. Structural Measures (Specialty-Specific)**

These measures reflect the extent of care that should be expected from a comprehensive pediatric specialty program.

### **Cancer**

*Bone marrow transplant services (19 points).* Hospitals could receive up to 19 points for having a stem cell transplant program, which is critical in treating a variety of cancers.

- Hospitals received 1 point for having a stem cell transplant unit with specially trained pediatric nurses and physicians.
- Hospitals received up to 4 points for offering various stem cell transplant services: cord blood cell transplantation, autologous stem cell transplantation, allogeneic (unrelated donor) transplantation, and allogeneic (related donor) transplantation.
- Hospitals received up to 8 points based on the volume of transplants. For each of the four types of transplantation, hospitals received 1 point for conducting 1 to 10 transplants in the past 3 years or 2 points for conducting more than 10 transplants in the last 3 years.
- Hospitals received up to 2 points for recognition as a transplant center by the National Marrow Donor Program and for membership in the Pediatric Blood and Marrow Transplant Consortium.
- Hospitals received up to 4 points based on the 100-day survival percentages of patients with a malignant disease who received either a matched unrelated donor stem cell transplant or a sibling matched transplant in the past 2 years. 1 point was awarded for a survival rate  $\geq 70\%$  and  $< 90\%$ , and 2 points for a survival rate  $\geq 90\%$ .

*Commitment to best practices (13 points).* Hospitals could receive up to 13 points for following these best practices in their pediatric cancer program.

- 1 point each for participating in regular morbidity and mortality conferences.
- Up to 3 points for having multidisciplinary tumor boards that meet at least quarterly to discuss patients in the following areas: hematologic malignancy patients in active treatment, solid tumor patients in active treatment and/or brain tumor patients in active treatment.
- Up to 4 points if case managers (comprising nurse practitioners, physician assistants, or clinical nurses) spend 25% or more of their time in care for the following patient populations: hematologic malignancies, solid tumors, brain tumors, stem cell transplant.
- Up to 3 points based on the percentage of patients presenting with febrile neutropenia who receive intravenous antibiotics within 6 hours of initial triage in the hospital: 1 point for  $\geq 50\%$  and  $75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $> 90\%$ .
- Up to 2 points based on the percentage of patients actively participating in a formally structured late effects of off-therapy clinic within 2 years after the cessation of active treatment: 1 point for  $\geq 50\%$  and  $75\%$ ; 2 points for  $\geq 75\%$ .

*Palliative care (3 points).* Hospitals received 1 point for offering a qualifying palliative care program. Such a program meets the following standards: it is organized and staffed for children nearing the end of life or living with conditions that limit lifespan or quality of life. Its purpose is to minimize pain and discomfort, provide emotional and spiritual support for children and their families, assist with financial guidance and social services, and support decision making. It must include at least one physician providing direct patient care; a nurse coordinator; and either a social worker, certified child life specialist, or pastoral counselor. All staff must have training in palliative care.

Hospitals could earn up to 2 additional points based on the percentage of patients with advanced and refractory cancer who were referred to the palliative care program as follows: 1 point for  $\geq 50\%$  and  $75\%$ ; 2 points for  $\geq 75\%$ .

*Specialized clinics and programs (6 points).* Hospitals received up to 6 points for specialized treatment programs for cancer patients—1 point for each of the following: clinical brain tumor program, clinical bone and soft tissue sarcomas program, clinical

leukemia/lymphoma program, comprehensive longer-term survivors program, pediatric limb-sparing surgery program, or fertility preservation program.

*Transplant accreditation (1 point).* Accreditation indicates that as of March 1, 2011, a hospital met standards set by the Foundation for Accreditation of Cellular Therapy (FACT) for transplanting cells to treat pediatric cancer, an indication of a high degree of care in handling and using cellular tissue. Programs can be certified as an adult or as a pediatric service provider and as offering two types of transplant services: autologous and allogeneic. For the Cancer specialty, a hospital was awarded 1 point if it was accredited by FACT as a pediatric service provider for allogeneic transplants as of March 1, 2011. Currently accredited facilities are listed at [www.factwebsite.org/FacilitySearch.aspx?SearchType=FACT](http://www.factwebsite.org/FacilitySearch.aspx?SearchType=FACT).

### **Cardiology & Heart Surgery**

*Adult congenital heart program (10 points).* Hospitals received 1 point for providing an organized adult congenital heart program. Hospitals received 1 additional point if the program was provided in-house. Hospitals could also receive 1 additional point if the program was listed with the Adult Congenital Heart Association. These programs are often provided by pediatric heart centers, which often have the most expertise in inherited or congenital heart disorders.

Up to 6 additional points were awarded if the adult congenital heart program provided the following: a formal plan to transition patients from the pediatric to adult congenital heart program; joint participation from adult and pediatric cardiologists; participation from cardiothoracic surgeons, cardiothoracic interventionalists, and cardiothoracic electrophysiologists who have specialty expertise in the care of adults with congenital heart disease; and specialty care for high-risk obstetrics for patients with congenital heart disease.

Hospitals received 1 point for having at least 1 surgeon who performed 20 or more cardiac surgical procedures on patients 18+ in the last 2 calendar years.

*Commitment to best practices (8 points).* Hospitals received up to 4 points for each of the following best practices: participation in regular morbidity and mortality conferences, multidisciplinary maternal/fetal medicine conferences, active home surveillance program for infants after Stage 1 palliation for hypoplastic left heart syndrome, and a follow-up program for children with or at risk for adverse neurodevelopmental outcomes.



Hospitals received up to 4 points for engaging in the following surgical safety procedures: conventional pre-procedural “time-out,” pre-procedural briefings, post-procedural debriefings, and implementation of a hand-off protocol or briefing.

*Congenital heart program (10 points).* Hospitals were rewarded for tracking and reporting data for their congenital heart surgery program and for the volume and type of congenital heart surgeries offered.

- Hospitals received 1 point for performing a manual review of records to determine volume and outcome measures in their program, 2 points for using a combination of manual review and reporting to an organization such as the Child Health Corporation of America (CHCA) or Society of Thoracic Surgeons (STS), and 3 points for reporting data directly to the STS Congenital Heart Surgery Database.
- Hospitals received 1 point for having at least one congenital heart surgeon who performed 100 or more congenital heart procedures in the last calendar year, and 2 points for having two or more surgeons.
- Hospitals received up to 2 points for having performed one or more hybrid procedures in the two reporting periods.
- Hospitals received 1 point for treating at least one patient with a Berlin heart or other ventricular assist device.
- Hospitals received up to 2 points based on the number of cardiac surgical procedures performed in the operating room in the last calendar year: 1 point for 100–249 surgeries and 2 points for 250 or more surgeries.

*Heart transplant program (5 points).* Hospitals received 2 points for being a UNOS-recognized heart or heart-lung transplant program or 1 point for being affiliated with a UNOS-recognized heart or heart-lung transplant program. Hospitals received up to 3 additional points based on the number of unique patients who received heart transplants in the past 2 years: 1 point for 1–2 transplants, 2 points for 3–9 transplants, and 3 points for 10 or more transplants.

*Specialized clinics and programs (10 points).* Hospitals received 1 point for each of the following catheter procedures offered to at least one patient in the past calendar year: balloon angioplasty; balloon valvuloplasty; stent implantation; transcatheter occlusion of cardiac shunts; transcatheter implants of catheter-delivered stented pulmonary valves (i.e., Melody); transcatheter arrhythmia ablations; ablations for atrial tachycardia, supraventricular tachycardia, and ventricular tachycardia; aortic and pulmonary catheter-based valvuloplasty.

## Diabetes & Endocrinology

*Commitment to best practices (48 points).* Hospitals could receive up to 48 points for implementing the following best practices in their pediatric diabetes and endocrinology program. Hospitals received 1 point for providing each of the following:

- 1 point for a mechanism to take urgent phone calls from pediatric patients' families that provides them with access to healthcare providers 24 hours a day.
- 1 point for a formal written transition program to prepare pediatric patients for the transition to adult endocrinology.
- 1 point for a clinical database of attributes of current, active diabetes patients that is used for quality assessment and improvement.
- 1 point for a written plan to review inpatient incidents of insulin-related hypoglycemia requiring IV glucose treatment.
- Up to 7 points for written consensus protocols for: inpatient management of diabetic ketoacidosis, glucagon minidose for families, insulin therapy during illness for families, periodic screening for complications of diabetes in the outpatient clinic, treatment of hyperglycemia in critically ill inpatients, outpatient management of type 2 diabetes patients, and outpatient management of pre-diabetes patients who typically have obesity and insulin resistance.
- 1 point for care review for all inpatients with diabetes at an interdisciplinary care conference prior to discharge.
- 1 point for regularly scheduled interdisciplinary care conferences to discuss diabetes patients with poor control.
- Up to 3 points for point of care testing for Hemoglobin A1c, blood glucose, and blood or urine ketones.
- 1 point for patient education materials on various conditions in written form or on the hospital website.
- 1 point for discussion of thyroid cancer patient cases in active treatment at a Tumor Board at least once a quarter.
- 1 point for a clinical database used by the program to evaluate performance.

- 1 point for >75% of patients admitted to the hospital in the past year with an endocrine disorder were seen by a physician in the pediatric endocrinology program.
- 1 point if  $\geq 25\%$  of staff attended a diabetes camp in the past year.

Hospitals received up to 3 points for each item below based on the percentage of patients meeting each condition: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $> 90\%$ .

- Percentage of inpatients with diabetes admitted to other services who are seen by a clinical member of the pediatric diabetes program.
- Percentage of patients who received a summary of the findings and treatment plan at the conclusion of their last outpatient visit.
- Percentage of diabetes outpatients with documentation of blood pressure test results.
- Percentage of diabetes outpatients with documentation of hemoglobin A1c test results.
- Percentage of diabetes outpatients who attended four or more clinic visits in the last calendar year.
- Percentage of diabetes outpatients who have been trained in the use of continuous glucose monitors.
- Percentage of primary care Type 1 diabetes outpatients whose daily blood glucose measurements for the past 2 weeks were available for review by the attending physician.
- Percentage of diabetes patients over 10 with documentation of microalbumin screening.
- Percentage of diabetes patients over 10 with documentation of non-mydriatic camera examination.

*Diabetes options (4 points).* Hospitals received up to 4 points for providing certain treatment options for patients in their pediatric diabetes program. One point was awarded for each of the following: insulin pump for children  $\geq 5$  years of age, insulin pump for children  $< 5$  years of age, insulin pump plus basal insulin injection, and basal insulin injection with rapid-acting insulin analog.

*Specialized clinics and programs (7 points).* Hospitals received up to 4 points for specialized treatment programs for endocrine patients—1 point for each of the following: lipid disorders, hypertension, comprehensive weight management, and Turner syndrome. Hospitals received up to 3 points for specialized clinics for diabetes patients—1 point for each of the following: outpatients with type 2 diabetes, outpatients with pre-diabetes, and adolescents and young adults with diabetes.

## **Gastroenterology**

*Liver transplant program (4 points).* Hospitals received 1 point for having a UNOS-recognized liver transplant program and up to 3 additional points based on the number of unique patients who received a liver transplant in the past 2 years: 1 point for 1–9 patients; 2 points for 10–19 patients; 3 points for 20+ patients.

*Specialized clinics and programs (8 points).* Hospitals received up to 8 points for offering various interdisciplinary treatment programs for gastrointestinal disorders. One point was awarded for each of the following programs: intestinal rehabilitation, cystic fibrosis treatment, total parenteral nutrition (TPN), pediatric intensive feeding, multidisciplinary childhood obesity management, inflammatory bowel disease, multidisciplinary allergic disease program, and chronic liver disease program.

## **Neonatology**

*Commitment to best practices (14 points).* Hospitals received up to 10 points for implementing best practices in neonatology. Hospitals received points as follows

- 1 point for an average patient load per neonatologist of 20 or more patients, 2 points for an average patient load less than 20.
- 1 point for an average patient load per social worker of 20 or more patients, 2 points for an average patient load less than 20.
- 1 point if all newborn cardiac patients receive a neonatology consult.
- 1 point for providing a percutaneous intravenous central catheter (PICC) team with specialized training to place and maintain PICC lines in NICU patients.
- Up to 6 points for offering at least one training on the following protocols for NICU procedures in the simulation /training lab: neonatal code response, chest tube placement, intubation, line placement, neonatal resuscitation, or other trainings.

- Up to 2 points for using a standardized hand-off tool to inform clinical staff during team transitions between shifts in the NICU for the following staff: physicians/physician extenders and nurses.

*ECMO (heart-lung machine) program (4 points).* ECMO technology involves a pump that circulates blood through an artificial lung back into the bloodstream of a very ill neonate, essentially providing heart-lung bypass support outside the child's body. A hospital received 1 point if an ECMO program was available 24 hours a day and an additional 1 point for designation as a Center for Excellence by ELSO. Hospitals received 1 additional point for having a specialized, multidisciplinary ECMO team and 1 additional point for having a neonatal-specific transport team capable of transporting high-risk pre-ECMO patients between hospitals.

*Specialized clinics and programs (9 points).* Hospitals received up to 9 points for providing specialized treatment teams/clinics to deal with particularly challenging conditions. Hospitals received 1 point for each of the following: craniofacial team, spina bifida team, comprehensive retinopathy of prematurity program, ECMO team, neonatal-neuro intensive care program, NICU specific palliative care program, metabolic team, bowel rehabilitation team, home ventilator management team, and neuro-developmental follow-up clinic for premature/high-risk NICU patients.

## **Nephrology**

*Commitment to best practices (14 points).* Hospitals received up to 14 points for implementing best practices in pediatric nephrology.

- Up to 2 points based on the percentage of school-age pediatric dialysis patients enrolled in a school or vocational rehabilitation program: 1 point for 51-75% ; 2 points for 76–100%.
- Up to 2 points for participating in regular interdisciplinary clinical conferences for both urology/uroradiology and renal pathology to review and coordinate the care of patients.
- Up to 5 points for the following services provided in support of the pediatric dialysis unit: designated medical director board-certified in pediatric nephrology, Continuous Quality Improvement activities discussed independently from the adult dialysis service, pediatric maintenance dialysis patients receive treatment in a unit independent from adult patients, dedicated nursing staff with formal training in

pediatric dialysis, and chronic maintenance hemodialysis at-home program for adolescents.

- 1 point for offering a formal transition program for kidney transplant patients from pediatric to adult care when needed.
- 1 point for conducting  $\geq 25\%$  and  $< 75\%$ , and 2 points  $\geq 75\%$  of living donor nephrectomies via laparoscopic procedure.
- 1 point for reviewing the care of all kidney transplant inpatients at an interdisciplinary care conference.
- 1 point for maintaining a database of current kidney transplant patients with clinical data to allow for quality assessment and improvement of care.

*Dialysis patients receiving transplants (3 points).* The measure evaluates the percentage of patients receiving maintenance dialysis who had received kidney transplants within 2 years. Four groups of patients were evaluated collectively: children under 5 receiving hemodialysis, children aged 5–19 receiving hemodialysis, children under 5 receiving peritoneal dialysis, and children aged 5–19 receiving peritoneal dialysis. Averaging the volume for the four groups, hospitals received up to 3 points for having a higher percentage of patients receiving transplants as follows: 1 point if  $\geq 25\%$  and  $< 50\%$ ; 2 points if  $\geq 50\%$  and  $< 75\%$ ; 3 points if  $\geq 75\%$ .

## **Neurology & Neurosurgery**

*Commitment to best practices (8 points).* Hospitals received up to 8 points for implementing best practices in neurology and neurosurgery.

- Hospitals received 1 point for tracking 30-day post-admission outcomes for patients with various illnesses.
- Hospitals received up to 3 points for conducting pre- and post-surgical neuropsychological evaluations for surgical patients with the following diagnoses: benign brain tumors, malignant brain tumors, and medically intractable epilepsy.
- Hospitals received up to 3 points for engaging in the following activities: maintaining a surgical mortality database, holding regular mortality and morbidity conferences, and regularly holding interdisciplinary care conferences.

- Hospitals received 1 point if at least 1% of patients with epilepsy were on a ketogenic diet at any point in 2010.

*Specialized clinics and programs (13 points).* Hospitals received up to 13 points for access to specialized treatment clinics or programs for pediatric neurological disorders. To receive credit, a hospital had to have an organized program that included a medical director and nursing coordinator. One point was awarded for each of the following clinics or programs: brain tumor, cerebrovascular accident, craniofacial surgical, movement disorders, neurofibromatosis, neuromuscular, neurooncology, spina bifida, tuberous sclerosis, brachial plexus, white matter, neonatal neurology, and multidisciplinary spine.

## **Orthopedics**

*Commitment to best practices (5 points).* Hospitals received up to 5 points for offering best practices in orthopedics. Hospitals received 1 point for each of the following: having 1 or more active or candidate members of the Pediatric Orthopaedic Society of North America; providing a pediatric imaging center that implements pediatric protocols to reduce radiation exposure; providing a pediatric imaging center with ultrasonographers with specialized training to perform hip exams; participating in a Tumor Board; and participating in regular, multidisciplinary morbidity and mortality conferences.

*Specialized clinics and programs (8 points).* Hospitals received up to 8 points for providing specialized treatment clinics or programs to treat significant conditions. To receive credit, the clinic had to be regularly attended by the pediatric orthopedic service. Hospitals received 1 point for each of the following clinics or programs: spina bifida, spasticity, skeletal dysplasia, brachial plexus, neurofibromatosis, muscular dystrophy, pain, and sports medicine.

## **Pulmonology**

*Asthma management (15 points).* Hospitals received up to 9 points for management of asthma patients based on the percentage of patients following specific protocols. The protocols evaluated were the percentage of inpatients with documentation of a personalized asthma management plan, percentage of outpatients with documentation of a personalized asthma management plan, percentage of outpatients who had a documented assessment of asthma control, percentage of outpatients in primary care clinics with documentation of a personalized asthma management plan, and percentage of outpatients in primary care clinics who had a documented assessment of asthma control. For each protocol, up to 3 points were awarded for

the percentage of patients following the protocol: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $> 90\%$ .

*Commitment to best practices (6 points).* Hospitals received up to 6 points for implementing best practices in respiratory disorders, which included having written consensus protocols for the following conditions: asthma exacerbations, bronchiolitis, croup, CF, pneumonia, and tracheostomy or ventilator-dependent patients.

*Lung disease of prematurity management (9 points).* This measure included three items based on the percentage of patients less than 24 months of age in treatment for lung disease of prematurity, the percentage of patients receiving respiratory syncytial virus (RSV) prophylaxis, and the percentage of patients given all of their recommended injections for the season. Hospitals received up to 3 points for each item as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $> 90\%$ .

*Lung transplant program (6 points).* Hospitals received 1 point for offering a UNOS-recognized lung transplant program. Hospitals could receive an additional 1 point for performing one lung transplant in the past 2 years or 2 additional points for performing two or more lung transplants in the past 2 years. Hospitals received up to 3 additional points based on the 3-year SRTR/UNOS patient survival percentage for pediatric lung transplant patients. Points were awarded as follows: 1 point for a survival rate  $\geq 50\%$  and  $< 80\%$ ; 2 points for a survival rate  $\geq 80\%$  and  $< 90\%$ ; 3 points for a survival rate  $> 90\%$ .

*Muscular dystrophy management (6 points).* This measure is composed of two items: the percentage of muscular dystrophy patients 5 or older who had pulmonary function testing in the last calendar year and the percentage of muscular dystrophy patients undergoing general anesthesia who had pulmonary function testing within 90 days prior to the procedure. Hospitals received up to 3 points for each item based on the percentage of patients as follows: 1 point for  $\geq 50\%$  and  $< 75\%$ ; 2 points for  $\geq 75\%$  and  $< 90\%$ ; 3 points for  $> 90\%$ .

## **Urology**

*Commitment to best practices (3 points).* Hospitals received up to 3 points for implementing best practices in urology: 2 points for having a formal program for tracking surgical site infections for major urological procedures and 1 point for having regular mortality and morbidity conferences.



*Specialized clinics and programs (6 points).* Hospitals received up to 6 points for each of the following specialized treatment clinics or programs to treat significant urological conditions: spina bifida, voiding dysfunction, comprehensive stone program, prenatal intervention, disorders of sexual differentiation, and genitourinary reconstructive surgery/exstrophy.

### C. Standardization and Weighting

Standardization was performed on the structural measures to ensure that the data were distributed normally with a mean of zero. This step was necessary to prepare the data for factor analysis, restoring balance so that trimmed and untrimmed measures had the same influence on the final score.

To combine the structural variables from the Pediatric Hospital Survey and external databases, the elements were weighted to create a composite measure worth 40% of the overall score. Using factor analysis, we reduced the number of variables to force a one-factor solution. Factor analysis is a statistical technique used to identify underlying similarities among the structural variables. Variables strongly associated with one another receive lower factor loadings than those that have a unique distribution. The factor loading for each measure was divided by the total of the factor loadings to derive a weight. Each measure’s weight was applied to reduce the effect of multiple variables that, because of their strong association, may measure the same concept. *Table 9* shows the weight of each measure on the total structural score for that specialty. The sum of the weights for each specialty is 40, reflecting the weight of the structural component in the overall score.

**Table 9. Weight (%) of Structural Measures by Specialty**

Measure	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
Adult congenital heart program		1.7								
Advanced clinical services	2.3	2.5	2.7	3.0	1.8	2.0	2.8	3.3	2.9	2.0
Advanced technologies	2.3	2.1	2.5	2.7	2.4	NA	2.4	0.7	1.4	1.1
Asthma management										
Bone marrow transplant services	2.4									
Catheter procedure volume		2.5				3.0				
Clinical support services	1.6	1.6	2.4	2.3	2.6	2.0	2.1	2.3	1.7	1.9

(continued)

**Table 9. Weight (%) of Structural Measures by Specialty (continued)**

Measure	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
Commitment to best practices	2.4	2.4	2.8	.	2.8	3.0	2.5	2.7	2.3	2.5
Commitment to clinical research	2.5	2.2	2.3	2.1	2.5	2.0	2.8	2.4	1.9	3.5
Commitment to involve parents and family	1.2	0.8	1.8	1.7	2.2	1.0	1.5	1.9	1.9	1.6
Commitment to quality improvement	2.0	2.7	2.6	2.7	2.4	3.0	2.4	2.8	2.2	3.0
Congenital heart program		2.5								
Diabetes options			1.6							
Dialysis patients receiving transplants						1.0				
Dialysis volume						3.0				
ECMO (heart-lung machine) program					2.3					
Epilepsy treatment volume							2.7			
Fellowship programs	2.1	1.9	1.9	2.4	2.7	2.0	2.6	1.5	2.0	2.6
Heart transplant program		1.9								
Kidney biopsy volume						2.0				
Kidney transplant volume						3.0				
Liver transplant program				2.3						
Lung disease of prematurity management									1.4	
Lung transplant program									1.1	
Minimally invasive procedure volume										2.7
Muscular dystrophy management									2.0	
New patient volume	1.7						2.3			
Nonsurgical procedure volume				2.6					2.7	
Norwood surgery volume		2.2								
Nurse Magnet hospital	1.0	0.5	0.4	0.7	1.3	1.0	1.5	1.6	1.5	1.2
Nurse-patient ratio	1.3	0.5	2.2	0.2	1.3	0.3	1.0	1.2	2.0	1.0
Overall infection prevention	2.0	2.1	2.4	2.6	2.3	2.0	2.3	2.2	2.4	1.3
Palliative care	1.4									
Patient and family services	1.7	1.0	2.5	1.9	2.7	3.0	1.8	2.4	2.2	1.2
Patient volume	2.2		2.4	2.9	2.7	2.0		3.2	2.8	3.5
Procedure volume			2.4					3.0		
Specialized clinics and programs	2.3	2.4	2.4	2.7	2.9		2.9	3.3		3.1
Subspecialist availability	2.1	2.7	2.7	2.4	2.6	2.0	2.0	3.0	2.4	2.6
Surgical volume	2.0	2.4		2.7			2.5			3.2
Transplant accreditation	2.0									
Use of health information technology	1.4	1.6	1.8	2.0	2.4	1.0	1.9	2.5	2.2	2.0
<b>Total</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>	<b>40</b>

## V. Outcomes

For the Best Hospitals adult specialty rankings, we use risk-adjusted mortality 30 days after admission as an outcome measure of the quality of care. Other measures now used by healthcare researchers as quality indicators\*\* include readmissions following surgical or hospital discharge, patient functional status (or improvement), infection rates, and medical complications.

Because of the absence of comprehensive national sources of pediatric outcomes data comparable to the MedPAR data used in the adult rankings, outcomes-related data were obtained directly from pediatric hospitals through the Pediatric Hospital Survey. Such data included bloodstream infection rates, transplant survival rates, mitigation of adverse events, and surgical outcomes. Other outcomes measures will be added over time to address the need for relevant outcomes and provide a more complete picture of pediatric hospital care. Measures for the 2011-12 rankings were developed from recommendations by expert advisory panels, as previously described. Details on specific outcomes measures, how they were calculated, and how they were scored are provided below.

### A. Outcome Measures

The measures used in each specialty, along with scoring rules used to assign points to hospitals for these outcomes, are described below. For all outcomes measures, a higher number of points indicates better outcomes (e.g., higher survival, lower mortality, fewer complications).

#### Cancer

*Success in preventing ICU bloodstream infections (6 points).* The rate of central-line bloodstream infections in intensive care units is considered a good benchmark of patient safety and outcome, because such infections in hospital-based care should be minimal. In cancer, rates were measured for all pediatric intensive care unit (PICU) patients and for hematology/oncology patients. The rate is calculated as the number of bloodstream infections per 1,000 central-line days during the previous 12 months. Hospitals were rewarded for lower rates. For PICU patients and hematology/oncology patients, hospitals received up to 3 points per group as follows: 1 point for 4–6 infections per 1,000 central-line days; 2 points for 2–3 infections, and 3 points for 0–1 infections.

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\*\* For more information on hospital quality measures and updates on national quality of hospital care initiatives, please see reports from the Agency for Healthcare Research and Quality (AHRQ) at <http://www.qualitymeasures.ahrq.gov/> and the Joint Commission at <http://www.jointcommission.org/PerformanceMeasurement/PerformanceMeasurement/Current+NHQM+Manual.htm>.

*Survival, acute lymphoblastic leukemia (3 points).* This measure evaluated the percentage of pediatric patients with standard risk acute lymphoblastic leukemia who were event-free survivors (EFS) after 5 years of treatment in the pediatric cancer program. Hospitals could receive up to 3 points for having a high percentage of 5-year EFS patients as follows: 1 point for  $\geq 50\%$  and  $< 75\%$  event-free survivors; 2 points for  $\geq 75\%$  and  $< 90\%$  event-free survivors; and 3 points for  $\geq 90\%$  event-free survivors.

## **Cardiology & Heart Surgery**

*Success in preventing ICU bloodstream infections (3 points).* The rate was calculated as the number of bloodstream infections for critical care patients per 1,000 central-line days during the previous 12 months. Hospitals were rewarded for lower rates. Hospitals received up to 3 points as follows: 1 point for 4–6 infections per 1,000 central-line days; 2 points for 2–3 infections, and 3 points for 0–1 infections.

*Survival after heart transplant (6 points).* Hospitals received up to 3 points for higher 1-year and 3-year survival rates for patients who received heart transplants from the pediatric heart transplant program. Both 1- and 3-year survival are used here because they provide somewhat different information about short-term and longer-term survival. Points were awarded as follows: 1 point for survival rates  $\geq 70\%$  and  $< 80\%$ ; 2 points for survival rates  $\geq 80\%$  and  $< 90\%$ ; and 3 points for survival rates  $\geq 90\%$ .

*Survival after Norwood surgery (9 points).* Hospitals received up to 9 points based on survival rate of patients who received the Norwood Stage 1 procedure. Survival was calculated separately for the two most recent reporting periods. Up to 3 points were awarded for ratios approaching one (i.e., fewer deaths following surgery) as follows: 1 point for survival rates  $\geq 65\%$  and  $< 80\%$ ; 2 points for survival rates  $\geq 80\%$  and  $< 90\%$ ; and 3 points for survival rates  $\geq 90\%$ .

For patients who received the procedure in the previous year, 1-year survival rates were calculated as well. Points were awarded as follows: 1 point for survival rates  $\geq 25\%$  and  $< 50\%$ ; 2 points for survival rates  $\geq 50\%$  and  $< 75\%$ ; and 3 points for survival rates  $\geq 75\%$ .

*Survival after surgery (12 points).* This measure represents the rate of patient deaths following moderately complex to very difficult heart surgery procedures (RACHS-1<sup>††</sup> categories 3 to 6) at pediatric hospitals in the two most recent reporting periods. To receive points, a

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<sup>††</sup> For more information on classifying cardiac surgical procedures into RACHS-1 categories, see <http://jtcs.ctsnetjournals.org/cgi/content/abstract/123/1/110>.

hospital had to perform at least one RACHS-1 category 5 or 6 procedure. For each RACHS-1 category (3, 4, and 5 and 6 combined) in each of the past 2 years, a mortality ratio was computed. In each of the 6 conditions (Year 1: categories 3, 4, and 5-6; Year 2: categories 3, 4, and 5-6), hospitals received greater points for having a lower rate of death following surgery as follows: 1 point for a mortality ratios  $\geq 10\%$  and  $< 20\%$  ; 2 points for mortality ratios  $< 10\%$ .

## **Diabetes & Endocrinology**

*Diabetes management (16 points).* This measure evaluated the adverse events and mean hemoglobin A1c levels in primary care type 1 diabetes outpatients. Diabetes-related adverse events can result from lapse of care. Such events included calls to the emergency department for diabetes-related reasons, inpatient admissions for diabetes-related reasons, serious diabetes-related morbidity, severe hypoglycemic events, and diabetes-related mortality. Hospitals received up to 2 points in each of the 5 conditions, with more points for better performance (i.e., lower levels of adverse events). Points were awarded as follows: 1 point for  $> 10\%$  and  $\leq 25\%$  of patients with adverse events; and 2 points for having  $\leq 10\%$  of patients with adverse events.

Mean hemoglobin A1c percentages were evaluated for three sets of patients: 0–5 years of age, 6–12 years of age, and 13–19 years of age. Increases in A1c values increase the risk of microvascular complications in patients. Hospitals received up to 2 points in each of the 3 conditions for maintaining lower mean A1c values. Points were awarded as follows: 1 point for median hemoglobin A1c values that were  $> 8\%$  and  $\leq 10\%$ ; and 2 points for values  $\geq 4\%$  and  $\leq 8\%$ .

*Hypothyroid management (4 points).* Hospitals received up to 4 points based on two indicators of hypothyroid management: the percentage of treated hypothyroid patients receiving thyroid-stimulating hormone (TSH) lab measurements whose most recent TSH measurement fell between the normal range of 0.5 and 4.0 mIU/ml; and the percentage of new congenital hypothyroidism patients less than 3 months of age who began thyroid hormone therapy before 21 days of age. Points were awarded as follows for each group: 1 point for  $\geq 50\%$  and  $< 75\%$  of patients in each condition; and 2 points for  $\geq 75\%$  of patients in each condition.

## **Gastroenterology**

*Success in preventing ICU bloodstream infections (3 points).* The rate was calculated as the number of bloodstream infections in PICU patients per 1,000 central-line days during the previous 12 months. Hospitals were rewarded for lower rates. Hospitals received up to 3 points as follows: 1 point for 4–6 infections per 1,000 central-line days, 2 points for 2–3 infections, and 3 points for 0–1 infections.

*Survival after liver transplant (3 points).* Hospitals received up to 3 points each for higher 3-year survival rates for patients who received liver transplants from the pediatric liver transplant program. Points were awarded as follows: 1 point for survival rates  $\geq 50\%$  and  $< 80\%$ ; 2 points for survival rates  $\geq 80\%$  and  $< 90\%$ ; and 3 points for survival rates if  $\geq 90\%$ .

## **Neonatology**

*Success in preventing ICU bloodstream infections (12 points).* The rate was calculated as the number of bloodstream infections in per 1,000 central-line days during the previous 12 months. In neonatology, BSI rates were calculated overall rate by birth-weight. Birth-weight was stratified into 5 categories according to NHSN guidelines:  $\leq 750$  grams, 751–1,000 grams, 1,001–1,500 grams, 1,501–2,500 grams, and  $> 2,500$  grams. Hospitals were rewarded for lower rates. Hospitals received up to 2 points in each of the 6 conditions as follows: 1 point for 4–6 infections per 1,000 central-line days; 2 points for  $\leq 3$  infections.

## **Nephrology**

*Managing dialysis patients (20 points).* This measure evaluates outcomes for patients on maintenance dialysis during the past 2 calendar years. Hospitals received up to 12 points for higher percentage of patients with these favorable outcomes: monthly Kt/V values of  $> 1.2$  for patients who received hemodialysis 3 times a week, percentage of total Kt/V values of  $\geq 1.8$  for patients receiving peritoneal dialysis, and percentage of patients who had an average Hb between 10g/dl and 13g/dl at least once on record in the past 12 months. Points are awarded separately for 2009 and 2010 for each of the 3 submeasures as follows: 1 point for desirable outcome rates  $\geq 80\%$  and  $< 90\%$ ; and 2 points for desirable outcome rates  $\geq 90\%$ .

Hospitals could receive up to an additional 8 points based on the percentage of patients receiving maintenance dialysis for at least 3 consecutive months who survived. Rates were divided into four submeasures including hemodialysis with infants and children under 5 years of age, hemodialysis in children and adolescents aged 5–19, peritoneal dialysis with infants and children under 5 years of age, peritoneal dialysis in children and adolescents aged 5–19. Up to 2 points per item were awarded as follows: 1 point for survival rates  $\geq 80\%$  and  $< 90\%$ ; 2 points for survival rates  $\geq 90\%$ .

*Preventing biopsy complications (2 points).* The item measures the percentage of patients receiving kidney biopsy procedures who had to stay longer or be readmitted after discharge because of a complication. Hospitals receive more points for having lower

complication rates as follows: 1 point for complication rates  $>5\%$  and  $\leq 10\%$ ; and 2 points for complication rates  $\leq 5\%$ .

*Success in preventing ICU bloodstream infections (3 points).* The rate of central-line bloodstream infections in intensive care units is considered a good benchmark of patient safety and outcome, because such infections in hospital-based care should be minimal. The rate was calculated as the number of bloodstream infections in PICU patients per 1,000 central-line days during the previous 12 months. Hospitals were rewarded for lower rates. Hospitals received up to 3 points as follows: 1 point for 4–6 infections per 1,000 central-line days; 2 points for 2–3 infections, and 3 points for 0–1 infections.

*Survival after kidney transplant (24 points).* Hospitals received up to 24 points for higher 1- and 3-year survival rates for tissue grafts and for patients who received kidney transplants from the pediatric kidney transplant program. A total of eight sets of rates, each worth up to 3 points, were included: 1- and 3-year graft survival rates (deceased donor), graft survival rates (living donor), patient survival rates (deceased donor), and patient survival rates (living donor). Both 1- and 3-year survival were used because they provide somewhat different information about short-term and longer-term survival. Points were awarded as follows: 1 point for survival rates  $\geq 50\%$  and  $< 80\%$ ; 2 points for survival rates  $\geq 80\%$  and  $< 90\%$ ; and 3 points for survival rates  $\geq 90\%$ .

## **Neurology & Neurosurgery**

*Epilepsy management (8 points).* Hospitals received up to 6 points for the percentage of patients receiving 3 specific treatments for epilepsy who were seizure-free after 1 year. Hospitals were rewarded for higher rates as follows: 1 point for seizure-free rates  $\geq 50\%$  and  $< 80\%$ , 2 points for seizure-free rates  $\geq 80\%$ .

Hospitals received up to 2 points for the percentage of patients in the Epilepsy Monitoring Unit who suffered the adverse event of developing convulsive status epilepticus (unresponsive to medication after 30 minutes). Hospitals were rewarded lower rates as follows: 1 point for  $>3\%$  and  $\leq 10\%$  of patients having an adverse event and 2 points for  $\leq 3\%$  of patients having an adverse event.

*Surgical survival (14 points).* Hospitals received up to 14 points for surgical survival rates for 7 significant neurological disorders or procedures, including brain tumors, craniosynostosis, hydrocephalus patient shunts, implantation of intracranial pressure monitors for head trauma, medically intractable epilepsy, spinal dysraphism, and Chiari I

malformation/syringomyelia. Lower mortality rates indicate better performance (i.e., a lower rate of death following surgery) and were awarded more points as follows: 1 point for mortality ratios  $>1\%$  and  $\leq 5\%$ ; 2 points for mortality ratios  $\leq 1\%$ .

## **Orthopedics**

*Preventing surgical complications (9 points).* Hospitals received up to 6 points based on the rate of adverse outcomes for patients who received surgical correction for scoliosis, including unplanned admissions within 30 days of procedure and returns to the OR for equipment or mechanical issues with 90 days. Hospitals received up to 3 points for both measures, with more points for better performance (i.e., lower levels of adverse events) as follows: 1 point for a complication rate  $\geq 3\%$  and  $< 5\%$ ; 2 points for a complication rate  $\geq 1\%$  and  $< 3\%$ ; and three points for a complication rate  $< 1\%$ .

Hospitals could receive an additional 3 points based on the percentage of surgical-site infections (SSIs) following a spinal fusion surgery. Hospitals were rewarded for fewer infections as follows: 1 point for an SSI rate  $\geq 6\%$  and  $< 10\%$ ; 2 points for an SSI rate  $\geq 2\%$  and  $< 6\%$ ; and three points for an SSI rate  $< 2\%$ .

## **Pulmonology**

*Asthma inpatient care (10 points).* This measure represented care for asthma patients. Up to 4 points are awarded based on the mean length of stay for asthma inpatients and observation stay patients. Hospitals were rewarded for shorter lengths of stay for inpatients as follows: 1 point for a stay of 3–5 days and 2 points for a stay of 3 days or less. For observation stay points, hospitals were also rewarded for shorter stays: 1 point for a stay of 1–2 days and 2 points for a stay of 1 day or less.

Hospitals were also awarded up to 6 points based on the percentage of inpatient deaths attributable to asthma and percentage of asthma inpatients readmitted within 7 days for exacerbation of asthma-related symptoms. Hospitals were rewarded for lower percentages of inpatient deaths and readmissions as follows: 1 point for mortality/readmission rate  $\geq 3\%$  and  $< 5\%$ ; 2 points for a rate  $\geq 1\%$  and  $< 3\%$ ; and 3 points for a rate  $< 1\%$ .

*Cystic fibrosis management (6 points).* This measure represented success in improving the functional status of cystic fibrosis patients. It included a composite of two items representing lung function and nutritional status: mean body mass index and mean forced expiratory volume (FEV<sub>1</sub>). Higher points indicate better outcomes (or better functional status). For BMI, points



were awarded for average score as follows: 1 point for mean BMI percentile  $\geq 40$  and  $< 45\%$ ; 2 points for mean BMI percentile  $\geq 45\%$  and  $< 50\%$ ; and 3 points for mean BMI percentile  $\geq 50\%$ . For the FEV<sub>1</sub> measure, points were awarded as follows: 1 point for mean FEV<sub>1</sub>  $\geq 80$  and  $< 90\%$ ; 2 points for mean FEV<sub>1</sub>  $\geq 90\%$  and  $< 100\%$ ; and 3 points for mean FEV<sub>1</sub>  $\geq 100\%$ .

*Preventing deaths of patients on ventilators (3 points).* Hospitals received up to 3 points for lower rates of deaths for ventilator-dependent patients due to accidental obstruction, decannulation, or tracheostomy. Lower mortality rates indicate better performance (i.e., a lower rate of death of patients on ventilators) and were awarded more points as follows: 1 point for mortality rate of  $> 3\%$  and  $\leq 5\%$ ; 2 points for mortality rate  $> 1\%$  and  $\leq 3\%$ ; and 3 points for mortality rate  $\leq 1\%$ .

*Success in preventing ICU bloodstream infections (3 points).* The rate was calculated as the number of bloodstream infections in PICU patients per 1,000 central-line days during the previous 12 months. Hospitals were rewarded for lower rates. Hospitals received up to 3 points as follows: 1 point for 4–6 infections per 1,000 central-line days; 2 points for 2 to 3 infections; and 3 points for 0 to 1 infections.

## **Urology**

*Success in preventing surgical complications (21 points).* This measure evaluated a number of complications and adverse outcomes in patients who received urologic surgical procedures. Complications included pyeloplasty failure, distal hypospadias complications, proximal hypospadias complications, and orchiopexy failure. Adverse events included unplanned hospital admissions for urologic issue within 30 days of discharge, hospital admission following an ambulatory procedure, and unplanned reoperation for a urologic issue within 48 days of surgery. Hospitals received up to 21 points total for the seven measures, with more points awarded for better performance (i.e., lower complication rates) as follows: 1 point for rates  $> 5\%$  and  $\leq 10\%$ ; 2 points for rates  $> 1\%$  and  $\leq 5\%$ ; and 3 points for rates  $\leq 1\%$ .

## **B. Standardization and Weighting**

As with the structural measures, standardization was performed on the outcomes measures to ensure that the data were distributed normally with a mean of zero. The outcomes measures in each specialty are worth 35% of the overall score—a 10 percentage point increase compared to last year. Using factor analysis, we reduced the number of variables to force a one-factor solution. *Table 10* shows the weight of each measure on the total structural score for that

specialty. The sum of the weights for each specialty is 35, which reflects the weight of the outcomes component in the overall score.

**Table 10. Weight (%) of Outcomes Measures by Specialty**

Measure	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
Asthma inpatient care									7.1	
Cystic fibrosis management									9.2	
Diabetes management			17.5							
Epilepsy management							17.5			
Hypothyroid management			17.5							
Managing dialysis patients						10.0				
Preventing biopsy complications						7.0				
Preventing deaths of patients on ventilators									11.2	
Preventing surgical complications								35.0		
Success in preventing ICU bloodstream infections	17.5	7.7		17.5	35.0	9.0			7.4	
Success in preventing surgical complications										35.0
Surgical survival							17.5			
Survival after transplant		7.2		17.5		9.0				
Survival after Norwood surgery		9.3								
Survival after surgery		10.8								
Survival, acute lymphoblastic leukemia	17.5									
<b>Total</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>	<b>35</b>

## VI. Process

The process component in Best Children’s Hospitals is represented by reputation with pediatric specialists and is worth 25% of the overall score. It can be viewed as a form of peer review of the hospital’s capabilities across a wide variety of processes related to quality of care. For all specialties, reputational scores were based on responses to the 2009, 2010, and 2011 physician surveys.

The 2011 survey sample consisted of 1,500 board-certified pediatric specialists selected from the American Board of Medical Specialties (ABMS).<sup>¶¶</sup> Stratifying by census region ([http://www.census.gov/geo/www/us\\_regdiv.pdf](http://www.census.gov/geo/www/us_regdiv.pdf)) and by specialty within region, we selected a

<sup>¶¶</sup> For details on the 2009 and 2010 surveys, please see the 2009 and 2010 methodology reports, which are available from [www.rti.org/besthospitals](http://www.rti.org/besthospitals).

probability (i.e., random) sample of 150 specialists for each of the 10 specialty areas. The final sample included federal and nonfederal medical and osteopathic physicians in all 50 states and the District of Columbia.

## A. Eligibility Requirements

To define a probability sample of physicians who properly represented the 10 specialty groupings, we used (1) a mapping between the 10 *U.S. News* specialties and the 23 ABMS member boards, and (2) a mapping between the ABMS specialty and specialty boards. For two subspecialties that were not available from the ABMS, physicians were selected from the American Medical Association Masterfile. Physicians who designated a primary specialty in one of the areas listed were eligible for the survey. *Table 11* displays the association among the specialty listed in Best Children’s Hospitals and the corresponding member board.

**Table 11. Physician Sample Mapping**

Best Hospitals Specialty	American Board of	Subspecialties
Cancer	Pediatrics	Pediatric Hematology-Oncology
Cardiology & Heart Surgery	Pediatrics	Pediatric Cardiology
	Congenital Heart Surgery	Congenital Heart Surgeon Society*
Gastroenterology	Pediatrics	Pediatric Gastroenterology
		Pediatric Transplant Hepatology
Diabetes & Endocrinology	Pediatrics	Pediatric Endocrinology
Neonatology	Pediatrics	Neonatal-Perinatal Medicine
Nephrology	Pediatrics	Pediatric Nephrology
Neurology & Neurosurgery	Pediatrics	Neuro-developmental Disabilities
		Sleep Medicine
	Psychiatry and Neurology	Child Neurology
	Pediatric Neurological Surgery	Pediatric Neurological Surgery
Orthopedics	Orthopedics	Pediatric Orthopedics**
Pulmonology	Pediatrics	Pediatric Pulmonary
Urology	Urology	Pediatric Urology
		Urology

\*These specialists were selected from the Congenital Heart Surgeons Society membership list

\*\*These specialists were selected from the American Medical Association Masterfile as self-designated specialists.

## B. Survey Procedure

### Materials

Each year, sampled physicians in each specialty were mailed a one-page, single-sided questionnaire containing a single nomination element. Respondents were asked to supply the names of up to five hospitals in their specialty that provide the best care to patients with serious conditions, without considering location or expense (see *Appendix B*). Along with the questionnaire, physicians were sent a cover letter, a business reply envelope, and a \$2 bill (an incentive used since the first Best Hospitals rankings in 1990).

### Mailings

The physician survey mailings were conducted in stages over several weeks at the beginning of 2011. The initial mailing was sent via U.S. Postal Service (USPS) First Class metered mail. Two weeks after the initial survey mailing, a replacement survey and new cover letter were sent to the sampled physicians. Two weeks following the reminders, we sent a USPS Priority mailing to nonresponders, along with another copy of the questionnaire, a new cover letter, and a business reply envelope. (See *Table 12* for a simplified schedule of the physician survey mailing.)

**Table 12. Physician Survey Mailing Schedule**

Materials Mailed	Sent via	Sent to	Date
1st copy of physician survey	USPS, First Class mail	Full physician sample	January 13, 2011
2nd copy of physician survey	USPS, First Class mail	Sample members who did not respond	January 27, 2011
3rd copy of physician survey	USPS, Priority mail	Sample members who did not respond	February 10, 2011

### 2011 Response Rates

Of the 1,500 physicians sampled for this year's report, 123 were deemed ineligible after determining that they were no longer actively practicing. Of the remaining 1,377 physicians, more than half (709) returned the completed questionnaire by the deadline of March 31, 2011. The final response rate was 51.5%, using American Association for Public Opinion Research standard response rate 6 (standard definitions are located on the Web at [http://www.aapor.org/uploads/Standard\\_Definitions\\_07\\_08\\_Final.pdf](http://www.aapor.org/uploads/Standard_Definitions_07_08_Final.pdf)), which treats

undeliverables as ineligible cases. *Table 13* shows the response rate for 2011 by region and specialty.

**Table 13. Response Rates, by Region and Specialty, 2011**

Specialty	Midwest	Northeast	South	West	Total
	%	%	%	%	%
Cancer	48.5	42.4	48.5	40.5	<b>44.9</b>
Cardiology & Heart Surgery	55.9	50.0	45.9	66.7	<b>54.6</b>
Diabetes & Endocrinology	61.3	54.3	55.9	39.4	<b>52.6</b>
Gastroenterology	57.6	62.5	59.5	44.4	<b>55.8</b>
Neonatology	36.4	45.5	39.5	47.1	<b>42.0</b>
Nephrology	45.2	28.6	56.3	42.9	<b>42.9</b>
Neurology & Neurosurgery	50.0	47.2	48.6	50.0	<b>48.9</b>
Orthopedics	44.1	63.9	51.4	64.9	<b>56.3</b>
Pulmonology	66.7	38.2	50.0	44.1	<b>49.6</b>
Urology	73.0	67.6	54.3	69.7	<b>66.2</b>
<b>Total</b>	<b>54.1</b>	<b>50.1</b>	<b>50.9</b>	<b>51.0</b>	<b>51.5</b>

### C. Survey Response Weighting

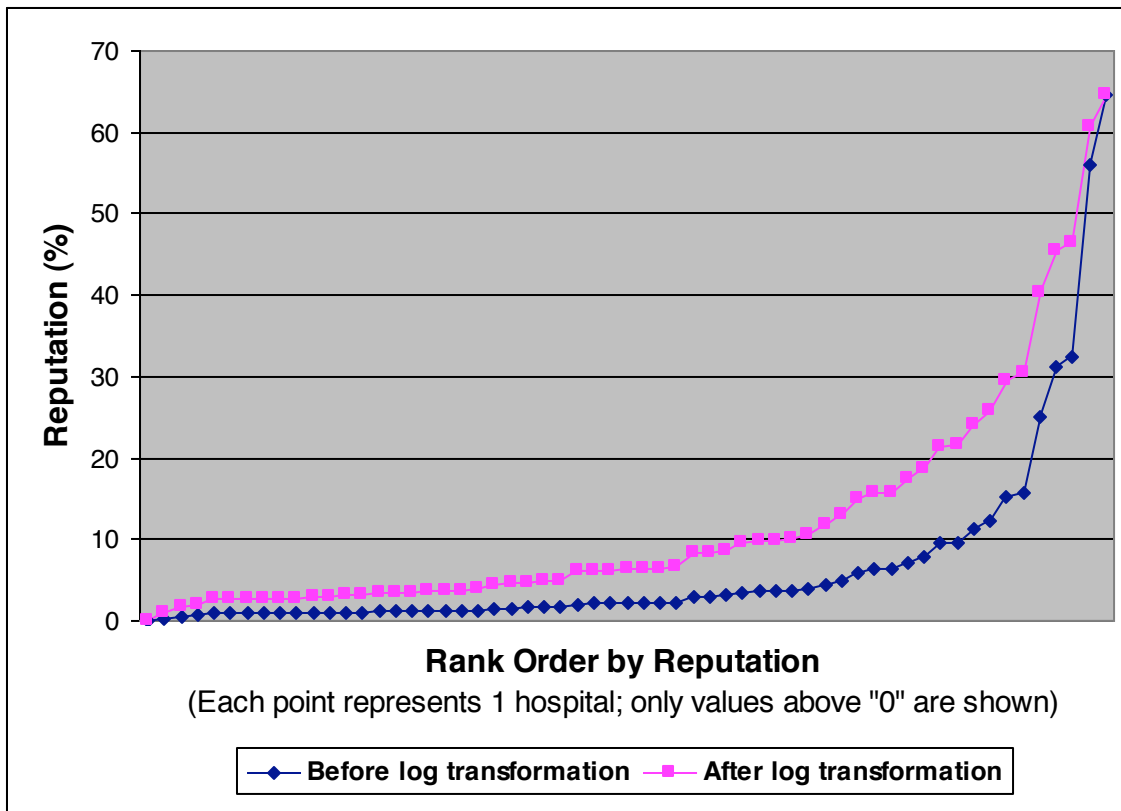
The physician survey was stratified by specialty and census region (Midwest, Northeast, South, and West). Weights were constructed and applied to each physician’s survey response to make nominations representative at the national level. Weights were based on probability of selection within each unique specialty-region combination, adjusting to account for nonresponders.

### D. Log Transformation

Starting in 2010, we added a step to the analysis of the reputation data obtained from physicians’ hospital nominations. By its nature, a survey that solicits recommendations for “best hospitals” will result in data that are not normally distributed—relatively few hospitals will receive even one “best” recommendation. Of the hospitals recommended, moreover, a small number will receive many nominations, producing a highly skewed distribution. Since the other ranking components, such as structural measures and mortality, are not skewed to this degree, reputation can have a somewhat larger than intended impact on the final rankings. To address this issue, we implemented a log transformation of the reputation data. The transformation reshapes the distribution, reducing the skew (flattening the distribution) of the reputation data. In this way, the distribution of reputation data more closely matches those of the other components in the rankings. *Figure 1* demonstrates the impact of this step on reputation data, using a set of

simulated values. As is evident, once the log transformation has been applied, the relative position of each hospital on this variable remains the same but the distance between the values is reduced. Due to the reduced variance, the impact of the reputation score on hospitals' final standing in the rankings is slightly diminished. As with the other components, the reputation data are standardized before being combined in the Index of Hospital Quality.

**Figure 1. Comparison of Reputation Data Prior to and after Log Transformation**



## VII. U.S. News Score

The weights of the components used to comprise the *U.S. News* ranking scores were revised in 2011. Now that more and more hospitals are consistently and reliably tracking a variety of patient outcomes, the outcome measures have become more stable and robust. As a result, the weight for the outcomes measures was increased to 35% and the weight for the process measure was reduced to 25%. The weight for the structural measures remains at 40%.

Although each measure represents a specific aspect of quality, a single score provides a result that is easy to use and understand and that portrays overall quality more accurately than any of the three elements would individually. The rankings for the top 50 hospitals in each of the

pediatric specialties by *U.S. News* Score are shown in *Appendix C*. For the 2011-12 rankings, we instituted a new ruling that allowed for ties for hospitals with the same *U.S. News* score.

The formula for calculating the *U.S. News* score is in Equation (1). The score can be thought of as a simple weighted sum of structural, process, and outcome measures. Please note that this formula is meant for illustrative purposes only; it cannot be used to directly calculate a score for an individual hospital. Standardized data values were adjusted based on distribution of measures across the eligible universe, which consisted of many more than 50 hospitals.

$$(1) \text{ Score} = \left\{ \begin{aligned} &W_s \times \left( \sum_1^{n_s} F + \sum_1^{n_o} F \right) \times \left[ (S_1 \times F_{1_s}) + (S_2 \times F_{2_s}) + \dots + (S_n \times F_{n_s}) \right] + W_p \times \left[ P \times \left( \sum_1^{n_s} F + \sum_1^{n_o} F \right) \right] \\ &+ W_o \times \left( \sum_1^{n_s} F + \sum_1^{n_o} F \right) \times \left[ (O_1 \times F_{1_o}) + (O_2 \times F_{2_o}) + \dots + (O_n \times F_{n_o}) \right] \end{aligned} \right\},$$

where

- Score* = *U.S. News* score for pediatrics,
- $W_s$  = weight assigned to structure measures,
- $W_p$  = weight assigned to process measures,
- $W_o$  = weight assigned to outcomes measures,
- $S_n$  = standardized value for structural indicator  $n$  (STRUCTURE),
- $F_{n_s}$  = factor loadings for structural indicator  $n_s$ ,
- $F_{n_o}$  = factor loadings for outcomes indicator  $n_o$ ,
- $P$  = standardized nomination score (PROCESS), and
- $O_n$  = standardized value for mortality indicator  $n$  (OUTCOMES),

For presentation purposes, we transformed the raw *U.S. News* scores to a scale that assigns a score of 100 to the top hospital. The formula for the transformation:

Equation (2)  $(\text{Raw } U.S. \text{ News score}_i - \text{minimum}_i) / \text{range}_i.$

## VIII. Pediatric Honor Roll

This year, 75 different hospitals were ranked in at least one pediatric specialty. The Children’s Hospitals Honor Roll, established in 2009, recognizes excellence across a broad range of pediatric specialties. To be listed, a hospital had to be ranked at least one standard deviation (SDs) above the mean in at least 4 of the 10 specialties. For 2011-12, 11 hospitals qualified, based on points assigned by specialty. A hospital that ranked at least 1 but less than 2 SDs above

the mean received 1 point. A hospital that ranked 2 or more SDs above the mean received 2 points. *Appendix D* lists the 2011-12 Honor Roll hospitals.

## **IX. Future Improvements**

Over the next 3 to 5 years we plan to continue refining the measures used in the current pediatric specialties and add new measures and specialties. Specifically, we anticipate the following improvements.

- Develop additional outcome measures. For example, we plan to explore alternatives for collecting additional mortality data, infection rates, patient functional measures, and complications rates.
- Explore risk adjustment. We will continue to investigate methods for risk-adjusting pediatric mortality data to better reflect hospital-to-hospital differences in patient mix, severity, and comorbidities. These efforts are complicated by the fact that currently there are no national databases that cover all pediatric health care in the United States. However, organizations such as the Child Health Corporation of America, the Children’s Hospital Neonatal Consortium, and the Society for Thoracic Surgeons are seeking to make some specialty-specific data available for the majority of pediatric institutions across the country. As these databases are developed and further expanded to include more pediatric facilities, we will explore their possible use in creating risk-adjusted outcomes and performance measures of healthcare.
- Identify additional structural measures. External certifications of hospital quality, excellence in specialty areas, and awards for high-quality care will be considered for incorporation in the rankings. Additional technologies, teams, and practices that define high-quality pediatric services also will be evaluated.
- Conduct more extensive review and field testing of the Pediatric Hospital Survey. Testing will be designed to fine-tune the survey and reduce the response burden on participating hospitals and ensure that questions are appropriately measuring hospital performance.
- Evaluate different weighting schemes. As additional measures are included in the rankings, the weights used to calculate the final score will continue to be evaluated and revised to better reflect high-quality pediatric care. In general, the goal will be to increase the weight of outcome measures as more viable measures are available for use in the rankings.



The project team will continue to work with expert advisory panels of physicians, nurses, hospital quality experts, and other healthcare professionals. RTI and *U.S. News* are grateful to these volunteer experts, who have provided invaluable recommendations and advice.

## X. Contact Information

We welcome suggestions and questions. Readers and users of the rankings are encouraged to contact the Best Hospitals research team at [BestHospitals@rti.org](mailto:BestHospitals@rti.org). This report and methodology reports for the adult rankings can be viewed or downloaded online in their entirety from the RTI International Web site at <http://www.rti.org/besthospitals>.

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**Appendix A**  
**Glossary of Terms**

Computer tomography (CT) enterography. CT enterography allows for visualization of the small bowel wall and lumen by combining a CT scan with large amounts of ingested contrast material.

Continuous EEG monitoring with pediatric neurology support. EEG is a technology for measuring electrical activity produced by the brain, as recorded from electrodes placed on the scalp. EEG monitoring provides the ability to collect the brain's electrical activity continuously to help detect and diagnose neurological problems.

Cryoablation. This process uses cooled, thermally conductive gases and fluids circulated through hollow needles (cryoprobes) that are inserted adjacent to diseased tissue in order to kill the tissue.

Functional magnetic resonance (fMR). fMR is a specialized type of MRI scan, which measures changes in blood flow related to neural activity.

Genetic testing/counseling. A genetic testing/counseling service is equipped with the appropriate laboratory facilities and is directed by a physician qualified to advise parents and prospective parents on potential problems in cases of genetic defects. A genetic test is the analysis of human DNA, RNA, chromosomes, proteins, and certain metabolites in order to detect heritable disease-related genotypes, mutations, phenotypes, or karyotypes for clinical purposes. Genetic tests can have diverse purposes, including the diagnosis of genetic diseases in newborns, children, and adults; the identification of future health risks; the prediction of drug responses; and the assessment of risks to future children.

Image-guided radiation therapy (IGRT). IGRT is an automated system that produces high-resolution x-ray images to pinpoint tumor sites, adjust patient positioning, and generally make treatment more effective and efficient.

Intensity-modulated radiation therapy (IMRT). IMRT is a three-dimensional radiation therapy that improves the targeting of treatment delivery in a way that is likely to decrease damage to normal tissues and allows for varying intensities.

Intraoperative magnetic resonance imaging (ioMRI). ioMRI uses a uniform magnetic field and radio frequencies to study tissue and structure of the body. It enables visualization of biochemical cellular activity in vivo without the use of ionizing radiation, radioisotopes, or ultrasound.

Magnetic resonance cholangiopancreatography (MRCP). MRCP is a noninvasive approach for imaging the biliary and pancreatic ducts using magnetic resonance imaging.

Magnetic resonance spectroscopy (MRS). MRS differs from MRI in that MRS uses a continuous band of radio wave frequencies to analyze the chemical composition of proton (hydrogen)-hydrogen based molecules in a variety of chemical compounds. This technology evaluates the chemical composition and integrity of functioning upper-motor neurons in the brain.

Magnetoencephalography (MEG). MEG is a technique for mapping brain activity by recording magnetic fields produced by electrical currents occurring naturally in the brain using arrays of superconducting quantum interference devices.

Molecular diagnostic/virology laboratory. This is a diagnostic laboratory that supports the NICU by conducting culture and tissue studies to determine the nature of biological and virological conditions.

Multidisciplinary pediatric acute pain/sedation service (available onsite 24 hours a day). This service provides monitored anesthesia care and sedation within the hospital (but not within an operating room or PICU), as well as emergency airway management and acute and chronic pain management for neonates and pediatric patients on a 24-hour basis. A qualified program must have at least an identified medical director (e.g., general pediatrician, pediatric subspecialist, or anesthesiologist) with documented education in conscious sedation and an RN coordinator (or pain management clinical nurse specialist).

Neonatal intensive care unit (NICU). A NICU provides mechanical ventilation, neonatal surgery, and special care for the sickest infants, including those with the lowest birth weights (below 1,500 grams), who are born in the hospital or transferred from another institution. The NICU is separate from the newborn nursery. A full-time neonatologist serves as director.

Neurophysiological intraoperative monitoring. This uses electrophysiological methods, including electroencephalography and electromyography to monitor parts of the brain, spinal cord, and peripheral nerves during surgery.

Non-sedate MRI (e.g. MRI-compatible neonatal transporter). This is an MRI-compatible incubator system with integrated coils to support imaging that includes a trolley to facilitate safe intrahospital transport of neonates.

Pediatric anesthesia program (available onsite 24 hours a day). This team provides anesthesia care for children before, during, and after surgery (or other medical procedures). The team provides 24-hour coverage by board-certified anesthesiologists who specialize in pediatric anesthesia.

Pediatric infectious disease program (available onsite 24 hours a day). This program provides consultation and treatment for children with severe illnesses that are infectious in origin. The team provides 24-hour on-site coverage by physicians board-certified in pediatric infectious diseases.

Pediatric intensive care unit (PICU). A PICU is staffed with specially trained personnel and has monitoring and specialized support equipment for treating pediatric patients who, because of shock, trauma, or other life-threatening conditions, require intensified, comprehensive observation and care.

Pediatric pain management program (available onsite 24 hours a day). Administered by specially trained physicians and other clinicians, this is a recognized clinical service or program providing specialized medical care, drugs, or therapies for the management of acute or chronic pain and other distressing symptoms among children suffering from an acute illness of diverse causes.

PET/computed tomography scanning (PET/CT). PET/CT combines the capabilities of PET and CT scanning into a single integrated device, which provides metabolic functional information for monitoring chemotherapy, radiotherapy, and surgical planning.

Positron emission tomography (PET) scanning. PET scanning is a computerized nuclear medicine imaging technology that uses radioactive (positron-emitting) isotopes created in a cyclotron or generator to produce composite images of the brain and heart activity. The scans are sectional images depicting metabolic activity or blood flow rather than anatomy.

Radiation isolation room. This is a room that is designed to isolate the “radioactive” individual (appropriate shielding) with appropriate disposal of radioactive biologics.

Radiofrequency ablation. This procedure involves placing probes that emit radiofrequency energy into the heart using a catheter. The radiofrequency energy is then used to destroy abnormal electrical activity in the heart tissue.

Rapid response team (available onsite 24 hours a day). A rapid response team, also known as a medical emergency team, is distinct from the hospital “code” team. The team of appropriately trained individuals is available 24 hours a day and has three essential characteristics: (1) The team creates tools and provides staff education for recognizing an acute deterioration in patient condition. (2) The team follows the SBAR method (for situation, background, assessment, recommendation) to communicate such a change in condition effectively and efficiently (i.e., escalation policy). (3) The team responds to the change in condition with the goal of reducing/eliminating preventable “codes.”

Reverse isolation/infection control facilities. Reverse isolation/infection control facilities are a controlled environment that protects patients from getting an infection caused by bacteria, viruses, or fungus that may be in the environment or carried by staff and visitors.

Specialized chemistry laboratory with tandem mass spectroscopy. This specialized diagnostic laboratory has the ability to use tandem mass spectroscopy and other advanced techniques to aid in the diagnosis of medical conditions in NICU patients.

Surgical intensive care unit (SICU) or dedicated beds in a NICU or PICU for surgical patients. A SICU is a specialized unit designed to meet the needs of pediatric surgical patients who require intensive care services following surgery. If you do not have a SICU, having dedicated surgical intensive care beds in your PICU is acceptable.

Therapeutic meta-iodine-benzyl-guanidine (I-131 MIBG) I-131MIBG is a functional imaging agent used to help locate and diagnose tumors of adrenergic tissues, such as neuroblastoma and pheochromocytoma.

Three-dimensional mapping. This includes the use of three-dimensional imaging systems, such as MRI or ultrasound, to guide ablation probes.

3 Tesla magnetic resonance imaging (3T MRI). 3T MRI is a higher-powered version of MRI that offers improved morphological and functional studies of the brain compared with the more common field strength of 1.5T.

## **Appendix B**

### **2011-12 Sample Physician Questionnaire**



# Best Children's Hospitals

Your nominations will be reflected in the 2011-12 *U.S. News & World Report pediatric cancer* rankings.

Without considering location or expense, list up to five U.S. hospitals (and/or affiliated medical schools) that in your opinion provide the best inpatient care for the most complex or difficult medical conditions or surgical procedures associated with pediatric cancer. *For medical schools affiliated with multiple hospitals, please list the individual hospital and not the medical school.*

	Hospital and/or affiliated medical school	City	State
a.	<input type="text"/>	<input type="text"/>	<input type="text"/>
b.	<input type="text"/>	<input type="text"/>	<input type="text"/>
c.	<input type="text"/>	<input type="text"/>	<input type="text"/>
d.	<input type="text"/>	<input type="text"/>	<input type="text"/>
e.	<input type="text"/>	<input type="text"/>	<input type="text"/>

Please send your response in the enclosed postpaid envelope or by fax (800) 476-9721.



Conducted by:

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## **Appendix C**

### **2011-12 Pediatric Rankings**



## Pediatric Rankings 2011-12—Cancer

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Survival, acute lymphoblastic leukemia	Preventing ICU bloodstream infections	Overall infection prevention	Patient volume	New-patient volume	Surgical volume	Nurse-patient ratio	Nurse Magnet hospital	Bone marrow transplant services	Transplant accreditation	Palliative care	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Use of health information technology	Subspecialist availability	Fellowship programs	Commitment to clinical research	
1	Children's Hospital Boston and Dana-Farber Cancer Institute	100.0	68.7	2	5	17	8	3	6	3.7	1	19	1	3	17	10	12	6	8	6	7	13	10	13	2	9
2	Children's Hospital of Philadelphia	99.3	67.6	3	4	14	9	3	6	3.6	1	18	1	3	17	10	12	6	8	6	7	12	10	13	2	9
3	St. Jude Children's Research Hospital, Memphis	96.8	58.2	3	5	19	9	3	5	5.5	0	18	1	3	16	10	12	6	8	6	7	13	10	13	2	9
4	Texas Children's Hospital, Houston	85.7	33.8	2	5	15	9	3	4	2.9	1	19	1	3	17	10	11	6	8	6	7	13	10	13	2	9
5	Cincinnati Children's Hospital Medical Center	85.5	33.1	3	6	17	6	2	6	4.8	1	15	1	3	17	10	12	6	8	6	7	11	10	13	2	9
6	Children's Hospital Los Angeles	77.3	22.1	2	5	10	9	3	4	2.9	1	18	1	3	17	10	11	6	8	6	7	13	10	13	2	7
7	Memorial Sloan-Kettering Cancer Center, New York	74.3	23.6	3	4	8	4	3	3	2.5	0	19	1	2	16	10	12	6	8	6	7	13	10	13	1	9
8	Seattle Children's Hospital	70.4	16.7	2	3	19	5	2	6	2.5	1	19	1	3	16	10	11	6	8	6	7	8	10	12	2	8
9	Johns Hopkins Children's Center, Baltimore	69.4	17.0	2	4	14	5	2	3	3.4	1	14	1	3	16	10	12	6	8	6	7	13	7	13	1	8
10	Children's Hospital Colorado, Denver	64.9	11.4	2	2	12	8	2	4	2.4	1	14	1	3	17	10	11	6	8	6	7	13	10	13	1	9
11	Children's National Medical Center, Washington, D.C.	63.4	7.1	3	5	11	7	2	6	2.9	1	19	1	3	17	10	11	6	8	6	7	13	10	13	1	9
12	Children's Healthcare of Atlanta	61.8	5.6	3	4	13	9	3	6	3.2	0	18	1	3	17	10	12	6	8	6	7	10	10	13	1	9
13	Children's Memorial Hospital, Chicago	61.3	5.9	3	5	16	7	2	4	2.3	1	19	1	2	17	10	11	6	8	6	7	10	10	13	2	9
14	Children's Medical Center Dallas	59.9	6.6	2	4	16	7	2	2	3.2	1	14	1	1	17	10	11	6	8	6	7	13	10	13	2	9
15	Children's Cancer Hospital-Univ. of Texas M.D. Anderson, Houston	59.7	8.4	NR	6	9	7	3	5	3.3	1	15	1	1	16	10	12	6	8	6	6	11	1	13	1	9
16	Nationwide Children's Hospital, Columbus, Ohio	57.1	3.5	2	6	14	8	2	2	2.6	1	14	1	3	17	10	12	6	8	6	6	13	10	13	2	8
17	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	56.8	4.3	2	3	17	4	2	5	2.9	0	18	1	3	17	10	12	6	8	6	7	13	10	13	1	9
18	St. Louis Children's Hospital-Washington University	56.0	3.8	3	4	16	4	1	4	2.8	1	13	1	3	17	10	12	6	8	6	7	10	10	13	2	9
19	Children's Hospital of Pittsburgh of UPMC	55.7	3.3	2	4	15	6	1	6	2.8	0	17	1	3	17	10	12	6	8	6	7	10	9	13	2	9
19	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	55.7	8.0	NR	4	16	6	1	3	3.8	0	15	1	2	17	10	10	6	7	6	7	10	10	12	1	8
21	Children's Hospital Cleveland Clinic	54.8	1.8	3	6	17	9	2	6	3.1	1	13	0	3	16	10	12	6	8	6	7	12	10	13	1	8
22	Rainbow Babies and Children's Hospital, Cleveland	53.1	1.6	3	4	15	5	3	4	2.5	1	14	1	3	17	10	12	6	8	6	7	13	7	13	1	8
23	UCSF Benioff Children's Hospital, San Francisco	52.4	5.2	2	5	11	5	2	2	3.9	0	15	1	3	14	10	12	6	8	6	7	9	0	12	1	8
24	University of Minnesota Amplatz Children's Hospital	52.3	4.1	NR	4	14	3	1	2	2.6	1	15	1	3	16	10	12	6	8	6	7	13	10	13	1	8
25	Rady Children's Hospital, San Diego	51.6	1.0	3	5	18	7	2	2	3.6	0	12	1	3	17	10	12	6	8	6	7	13	9	13	1	8
26	Mattel Children's Hospital UCLA, Los Angeles	51.5	2.7	2	3	14	5	3	2	2.6	1	15	1	3	17	10	11	6	8	6	7	13	5	13	1	6
27	Children's Hospital at Montefiore, New York	51.4	0.5	3	4	21	8	2	4	2.8	0	13	0	3	17	10	12	6	8	6	7	13	10	13	2	8
28	Children's Hospital of Orange County, Calif.	50.6	1.1	3	5	19	6	1	2	2.3	1	15	1	3	15	10	12	6	8	6	7	13	10	12	1	9
28	Duke Children's Hospital and Health Center, Durham, N.C.	50.6	3.9	NR	2	16	3	1	3	2.3	1	19	1	3	17	10	11	6	8	6	7	10	10	13	1	6
28	Riley Hospital for Children at Indiana University Health, Indianapolis	50.6	1.4	2	3	17	6	2	2	3.1	1	15	1	3	17	10	12	6	8	6	7	13	4	13	1	9
31	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	50.4	2.1	3	4	21	3	1	2	2.4	0	15	1	3	17	10	12	6	8	6	7	10	10	12	1	9
32	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	49.9	1.4	2	2	16	6	2	4	3.8	1	17	1	3	17	10	11	5	8	6	7	13	10	13	1	5
33	Children's Hospital of Wisconsin, Milwaukee	49.3	2.0	2	4	13	5	2	2	2.3	1	15	1	3	17	10	11	6	8	6	7	9	10	13	1	5
34	Children's Hospital of Michigan, Detroit	48.8	1.4	3	4	11	3	1	2	2.8	1	12	1	3	17	10	11	6	8	6	7	10	10	13	2	8
35	Doernbecher Children's Hospital at OHSU, Portland, Ore.	48.7	0.7	2	5	16	5	2	2	2.2	0	19	1	3	17	10	12	6	8	6	6	13	10	12	1	8
36	Cook Children's Medical Center, Fort Worth	48.6	1.4	2	5	18	6	1	4	3.3	1	15	1	1	16	10	12	6	8	6	7	13	9	12	0	6
37	University of Chicago Comer Children's Hospital	48.4	1.0	3	6	10	3	1	2	2.3	1	14	1	3	17	10	11	6	8	6	7	13	10	13	1	7
38	Primary Children's Medical Center, Salt Lake City	48.1	2.1	1	3	11	3	1	2	4.8	0	15	1	3	17	10	11	6	8	6	7	12	4	13	2	9
39	Children's Hospital of Alabama at UAB, Birmingham	47.9	1.0	3	5	8	6	1	3	2.7	1	13	1	1	17	10	11	6	8	6	7	12	9	13	1	8
40	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	47.5	0.5	2	4	19	6	1	2	3.0	0	13	1	3	17	10	12	6	8	6	7	13	10	13	1	5
41	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	47.2	1.6	2	3	9	5	1	3	3.0	1	18	1	2	17	10	10	6	8	6	7	10	10	13	1	6
42	Miami Children's Hospital	46.9	0.0	2	6	15	5	3	5	2.9	1	16	1	3	17	10	11	5	8	6	7	6	5	13	0	8
43	University of Iowa Children's Hospital, Iowa City	46.8	0.4	3	2	15	6	1	2	2.8	1	12	1	3	16	10	12	6	8	6	7	9	10	13	1	9
44	Children's Hospitals and Clinics of Minnesota, Minneapolis	46.1	1.1	3	5	11	6	2	2	5.0	1	3	0	3	16	10	12	5	8	6	7	10	10	13	1	6
45	Kosair Children's Hospital, Louisville, Ky.	45.1	0.6	2	3	16	5	1	3	2.7	1	12	1	3	16	10	12	6	8	6	7	12	9	13	0	3
46	Women and Children's Hospital of Buffalo	45.0	1.3	3	4	12	4	1	2	5.2	0	11	1	3	17	10	11	6	8	6	7	13	0	12	1	5
47	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	44.5	0.7	NR	3	18	6	3	4	3.7	1	12	1	1	16	10	12	6	8	6	7	5	10	12	1	3
48	American Family Children's Hospital, Madison, Wis.	44.0	0.0	2	3	11	5	1	2	2.6	1	13	1	1	17	10	12	6	8	6	7	10	10	13	1	8
49	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	43.5	0.6	2	4	8	3	1	2	1.6	0	11	1	3	16	10	10	5	8	6	7	13	10	13	2	6
50	All Children's Hospital, St. Petersburg, Fla.	42.8	1.3	3	3	10	3	1	2	1.9	0	15	1	3	16	9	12	6	7	6	7	12	7	13	0	5

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

# Pediatric Rankings 2011-12—Cardiology & Heart Surgery

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Survival after surgery	Survival after heart transplant	Survival after Norwood surgery	Preventing ICU bloodstream infections	Overall infection prevention	Surgical volume	Catheter procedure volume	Norwood surgery volume	Nurse-patient ratio	Nurse Magnet hospital	Congenital heart program	Adult congenital heart program	Heart transplant program	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Efforts to involve parents and family	Commitment to quality improvement	Commitment to best practices	Use of health information technology	Subspecialist availability	Fellowship programs	Commitment to clinical research
1	Children's Hospital Boston	100.0	87.0	10	4	8	3	17	18	24	6	3.7	1	10	10	5	18	9	5	10	8	6	12	8	10	14	2	7
2	Children's Hospital of Philadelphia	95.6	83.5	11	3	5	2	13	18	18	6	3.6	1	10	9	5	18	9	5	10	8	6	11	8	10	14	2	7
3	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	85.6	47.4	8	5	7	2	20	18	14	6	2.4	0	9	10	5	17	9	5	10	8	6	11	7	10	14	2	7
4	Texas Children's Hospital, Houston	83.7	41.6	11	4	8	3	15	17	17	6	2.9	1	10	9	5	18	9	4	10	8	6	10	8	10	14	2	5
5	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	77.6	36.8	10	5	5	2	16	15	15	5	3.8	0	6	10	5	17	9	5	10	7	6	12	8	10	13	1	3
6	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	71.7	16.2	11	5	9	2	15	17	16	6	2.9	0	10	10	5	18	9	5	10	8	6	12	8	10	14	2	6
7	Children's Healthcare of Atlanta	70.5	15.7	11	3	8	2	12	18	17	6	3.2	0	10	10	5	18	9	5	10	8	6	12	8	10	14	2	6
8	Children's Hospital of Wisconsin, Milwaukee	69.3	15.7	10	4	8	2	13	16	13	6	2.3	1	10	10	5	17	9	5	10	8	6	12	8	10	13	2	6
9	Cincinnati Children's Hospital Medical Center	68.5	17.3	9	2	6	3	16	9	12	5	4.8	1	10	9	4	18	9	5	10	8	6	12	8	10	13	1	7
10	Nationwide Children's Hospital, Columbus, Ohio	62.8	10.0	10	4	9	2	15	10	17	5	2.6	1	10	10	4	18	9	5	10	8	6	11	8	10	12	2	3
11	Children's Hospital Los Angeles	62.7	9.9	11	5	7	3	12	18	11	6	2.9	1	9	9	4	15	9	5	9	8	6	11	8	10	13	2	5
12	Children's Hospital of Pittsburgh of UPMC	59.0	6.5	12	4	4	2	14	11	12	5	2.8	0	10	10	5	18	9	5	10	8	6	12	8	9	14	2	5
13	St. Louis Children's Hospital-Washington University	58.7	5.2	11	3	8	2	16	10	17	6	2.8	1	10	10	5	18	9	5	10	8	6	11	8	10	14	1	5
14	Miami Children's Hospital	55.6	4.6	12	NA	9	3	15	10	13	4	2.9	1	10	10	2	18	9	5	10	8	6	12	8	5	13	1	7
14	Seattle Children's Hospital	55.6	3.3	11	5	8	2	18	12	16	6	2.5	1	10	9	5	15	9	5	10	8	6	10	8	10	12	2	5
16	Mattel Children's Hospital UCLA, Los Angeles	55.3	6.7	9	4	6	2	13	8	12	4	2.6	1	8	10	5	15	9	5	10	8	6	10	8	5	14	2	4
17	Children's Hospital Colorado, Denver	55.1	5.1	8	4	6	2	12	12	14	5	2.4	1	10	10	5	17	9	4	10	8	6	12	8	10	14	2	1
17	Medical University of South Carolina Children's Hospital, Charleston	55.1	5.1	12	5	9	3	12	12	11	5	1.4	0	10	10	4	17	9	5	10	7	4	11	8	4	13	1	6
19	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	54.9	5.6	10	5	7	1	17	8	9	3	3.7	1	8	10	4	18	9	5	10	8	6	11	8	10	14	1	4
20	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	54.7	3.7	9	3	4	2	12	15	16	6	3.0	1	8	10	5	17	9	5	10	8	6	12	8	10	11	2	6
21	Children's Medical Center Dallas	54.3	3.5	9	4	7	2	16	13	13	5	3.2	1	8	8	5	17	9	5	10	8	6	11	7	10	14	2	5
21	Duke Children's Hospital and Health Center, Durham, N.C.	54.3	2.3	9	4	8	2	16	10	17	6	2.3	1	10	10	4	18	9	5	10	8	6	11	8	10	13	1	7
23	Children's Memorial Hospital, Chicago	53.2	4.3	8	5	6	3	15	8	10	3	2.3	1	9	9	5	18	9	5	10	8	6	12	8	10	12	1	3
24	Children's National Medical Center, Washington, D.C.	52.8	4.4	8	NA	6	3	14	13	17	6	2.9	1	5	9	0	16	9	5	10	8	6	12	7	10	13	2	4
25	Riley Hospital for Children at Indiana University Health, Indianapolis	52.4	2.0	9	6	5	2	16	13	11	5	3.1	1	9	10	4	18	9	5	10	8	6	12	8	4	13	2	7
26	Johns Hopkins Children's Center, Baltimore	51.8	2.8	12	6	7	2	13	11	7	2	3.4	1	8	10	5	18	9	5	10	8	6	10	8	7	13	2	6
27	UCSF Benioff Children's Hospital, San Francisco	51.4	5.7	12	NA	6	3	14	14	13	6	3.9	0	7	10	1	16	9	5	10	8	6	8	7	0	14	1	1
28	Children's Hospital Cleveland Clinic	50.6	3.6	12	4	3	3	16	6	7	2	3.1	1	7	10	4	17	9	5	10	8	6	10	8	10	14	2	1
29	Children's Hospital of Michigan, Detroit	50.3	2.9	7	4	5	2	10	10	16	3	2.8	1	10	10	5	17	9	5	10	8	6	10	8	10	12	1	4
30	Rady Children's Hospital, San Diego	48.5	0.3	12	NA	6	3	17	12	14	5	3.6	0	8	9	0	16	9	5	10	8	6	12	8	9	13	2	7
31	Primary Children's Medical Center, Salt Lake City	47.1	1.2	10	4	7	2	11	14	11	5	4.8	0	8	10	5	18	9	4	10	8	6	12	6	4	13	2	3
32	University of Iowa Children's Hospital, Iowa City	45.3	0.8	10	6	9	2	13	6	11	2	2.8	1	7	9	4	18	9	4	9	8	6	8	8	10	12	2	4
33	Children's Hospital at Montefiore, New York	44.8	0.0	4	NR	0	2	20	4	21	1	2.8	0	8	10	5	15	9	5	10	8	6	10	8	10	14	2	7
33	Children's Hospitals and Clinics of Minnesota, Minneapolis	44.8	0.3	11	NA	9	3	9	13	10	5	5.0	1	9	8	2	14	9	5	10	8	6	10	8	10	12	0	6
33	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	44.8	0.7	10	0	6	3	16	11	9	4	2.8	0	10	8	3	15	9	5	9	8	6	10	7	10	12	0	6
36	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	44.5	1.4	7	NA	2	2	18	13	14	6	3.8	1	8	9	0	14	9	5	9	8	6	11	8	10	10	0	4
37	Kosair Children's Hospital, Louisville, Ky.	43.8	0.6	9	2	5	2	16	8	10	5	2.7	1	9	10	4	17	9	5	9	8	6	9	8	9	11	0	2
38	Advocate Hope Children's Hospital, Oak Lawn, Ill.	43.5	0.9	9	NA	7	1	13	15	14	6	2.5	1	7	8	0	16	9	4	10	8	2	11	8	10	13	1	2
39	Children's Hospital of Alabama at UAB, Birmingham	42.2	1.2	5	5	4	2	11	10	15	4	2.7	1	9	10	4	15	9	4	9	8	6	8	8	9	9	1	1
40	Arnold Palmer Medical Center, Orlando, Fla.	42.0	1.7	11	NA	8	2	12	7	9	4	2.6	0	8	9	2	14	8	5	10	6	5	11	8	7	11	0	4
41	Rainbow Babies and Children's Hospital, Cleveland	41.1	1.2	9	NA	3	3	14	7	7	2	2.5	1	5	10	1	15	9	5	9	8	6	9	8	7	13	1	2
41	University of Minnesota Amplatz Children's Hospital	41.1	0.9	8	0	0	2	13	6	6	0	2.6	1	10	10	5	12	9	5	9	8	6	10	7	10	14	2	2
43	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	40.8	0.0	7	3	4	2	8	6	9	3	1.6	0	8	10	4	17	9	4	10	8	6	9	8	10	13	2	3
43	North Carolina Children's Hospital at UNC, Chapel Hill	40.8	0.6	9	6	5	2	11	6	7	2	2.7	1	9	8	3	16	9	4	9	7	6	9	8	10	13	1	1
43	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	40.8	0.4	6	NA	3	2	18	7	12	4	3.0	0	7	10	1	16	9	5	9	8	6	8	8	10	13	1	0
46	Le Bonheur Children's Hospital, Memphis	40.7	0.0	0	NR	9	2	11	7	11	2	2.4	0	8	10	2	16	9	5	9	8	6	11	8	10	12	2	3
47	Children's Hospital and Medical Center, Omaha	40.6	0.3	10	NA	9	2	16	9	9	5	2.9	1	9	9	2	12	8	4	10	8	5	10	8	10	11	0	2
48	Doernbecher Children's Hospital at OHSU, Portland, Ore.	40.5	1.0	5	NA	3	2	15	7	14	3	2.2	0	8	9	1	14	9	5	10	8	6	8	7	10	11	1	3
49	All Children's Hospital, St. Petersburg, Fla.	40.3	1.0	8	3	5	1	12	9	5	5	1.9	0	8	8	5	16	8	5	9	7	6	12	7	7	11	0	3
49	Shands Children's Hospital at the University of Florida, Gainesville	40.3	0.6	10	6	8	2	10	6	11	3	2.1	1	7	10	5	18	8	4	9	8	6	8	7	8	10	1	0

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011-12—Diabetes & Endocrinology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Diabetes management	Hypothyroid management	Overall infection prevention	Patient volume	Procedure volume	Nurse-patient ratio	Nurse Magnet hospital	Diabetes options	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Commitment to clinical research	
1	Children's Hospital of Philadelphia	100.0	65.7	13	4	14	22	18	3.6	1	4	17	9	9	6	9	6	7	43	10	10	1	1
2	Children's Hospital Boston	93.6	47.6	14	2	18	25	17	3.7	1	4	17	9	9	7	9	6	7	41	10	10	1	1
3	Children's Hospital of Pittsburgh of UPMC	81.3	24.0	14	4	15	25	15	2.8	0	4	17	9	9	6	9	6	7	45	9	11	1	1
4	Children's Hospital Colorado, Denver	78.6	27.2	12	3	11	21	7	2.4	1	4	17	9	7	7	9	6	7	38	10	11	1	1
5	Children's Hospital Los Angeles	75.4	22.3	15	3	9	23	9	2.9	1	4	16	9	9	6	9	6	7	36	10	10	1	1
6	Cincinnati Children's Hospital Medical Center	74.4	18.6	13	4	15	17	16	4.8	1	4	15	9	9	7	9	6	7	35	10	10	1	1
7	Yale-New Haven Children's Hospital, New Haven, Conn.	74.3	16.5	16	4	12	18	18	2.4	0	4	17	9	9	7	9	6	6	46	10	11	1	1
8	Johns Hopkins Children's Center, Baltimore	71.7	17.3	15	4	14	17	10	3.4	1	4	17	9	9	4	9	6	7	46	7	9	1	1
9	New York-Presbyterian Morgan Stanley Children's Hospital	69.9	14.0	14	3	17	21	7	2.9	0	4	17	9	9	6	9	6	7	43	10	10	1	1
10	Texas Children's Hospital, Houston	65.4	11.5	15	1	12	25	15	2.9	1	4	16	9	9	5	9	6	7	33	10	10	1	1
11	Mattel Children's Hospital UCLA, Los Angeles	62.0	7.3	14	4	14	15	13	2.6	1	4	17	9	9	7	9	6	7	48	5	10	1	1
12	Riley Hospital for Children at Indiana University Health, Indianapolis	61.3	7.9	13	3	16	19	13	3.1	1	4	17	9	9	6	9	6	7	36	4	10	1	1
13	Rainbow Babies and Children's Hospital, Cleveland	60.3	6.3	13	4	14	20	12	2.5	1	4	17	9	9	7	9	6	7	47	7	9	1	1
14	Shands Children's Hospital at the University of Florida, Gainesville	60.1	9.5	6	4	7	14	14	2.1	1	4	16	9	9	5	9	6	7	41	8	10	1	1
15	Children's Medical Center Dallas	59.7	5.1	13	3	15	25	14	3.2	1	4	17	9	9	6	9	6	7	39	10	10	1	1
16	Children's Hospital Cleveland Clinic	58.0	3.3	13	4	17	23	13	3.1	1	4	16	9	9	7	9	6	7	47	10	10	1	1
17	UCSF Benioff Children's Hospital, San Francisco	57.7	12.5	12	0	15	12	5	3.9	0	4	15	9	5	6	8	6	5	41	0	10	1	1
18	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	56.9	9.3	14	1	16	13	7	3.8	0	4	16	9	9	1	7	6	7	36	10	9	1	1
19	Massachusetts General Hospital for Children, Boston	56.7	6.2	13	3	17	13	6	1.9	1	4	17	9	9	5	9	6	7	41	10	9	1	1
20	St. Louis Children's Hospital-Washington University	55.9	4.0	13	1	13	20	12	2.8	1	4	17	9	9	6	9	6	7	39	10	11	1	1
21	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	55.1	3.8	11	4	15	12	15	3.7	1	4	17	9	9	7	9	6	7	34	10	9	1	1
22	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	55.0	3.0	12	4	21	17	13	2.4	0	3	17	9	9	7	9	6	7	45	10	10	1	1
23	Children's Healthcare of Atlanta	54.9	4.0	12	0	12	20	7	3.2	0	4	17	9	9	7	9	6	7	44	10	11	1	1
24	Rady Children's Hospital, San Diego	54.6	1.9	15	4	18	20	14	3.6	0	4	16	9	9	6	9	6	7	44	9	10	1	1
25	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	54.2	2.3	14	3	13	23	11	3.0	1	4	17	9	9	7	9	6	7	41	10	10	1	1
26	Children's Hospital at Montefiore, New York	53.6	0.0	14	4	21	22	18	2.8	0	4	17	9	9	7	9	6	7	48	10	11	1	1
27	Duke Children's Hospital and Health Center, Durham, N.C.	53.3	2.8	13	3	16	18	9	2.3	1	4	17	9	9	6	9	6	7	37	10	10	1	1
28	Seattle Children's Hospital	52.2	1.6	13	4	16	17	16	2.5	1	4	16	9	9	6	9	6	7	37	10	10	1	1
29	Cook Children's Medical Center, Fort Worth	51.9	1.1	13	3	19	26	16	3.3	1	4	17	9	8	6	9	6	7	42	9	10	0	1
30	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	51.6	2.2	13	3	19	13	9	3.0	0	4	16	9	9	4	9	6	7	41	10	10	1	1
31	Winthrop University Hospital Children's Medical Center, Mineola, N.Y.	50.7	0.6	15	3	19	16	7	3.6	0	4	17	9	9	6	9	6	7	48	6	11	1	1
32	Wolfson Children's Hospital, Jacksonville, Fla.	50.6	1.9	14	2	11	15	14	3.2	1	4	16	9	8	7	9	6	7	44	7	10	1	1
33	Children's Hospital of Orange County, Calif.	50.1	1.9	9	4	15	22	15	2.3	1	4	16	9	9	5	9	6	7	42	10	9	0	1
33	Nationwide Children's Hospital, Columbus, Ohio	50.1	1.7	12	2	14	21	13	2.6	1	4	16	9	9	3	9	6	7	41	10	10	1	1
35	Children's Hospital of Wisconsin, Milwaukee	49.9	1.4	14	3	10	16	9	2.3	1	4	16	9	9	7	9	6	7	44	10	10	1	1
35	Children's Memorial Hospital, Chicago	49.9	0.8	13	4	15	21	13	2.3	1	4	17	9	9	4	9	6	7	36	10	10	1	1
37	North Carolina Children's Hospital at UNC, Chapel Hill	49.8	2.0	12	4	11	15	7	2.7	1	4	16	9	9	6	8	6	7	40	10	10	1	1
38	University of Minnesota Amplatz Children's Hospital	49.6	1.4	13	3	14	13	15	2.6	1	4	16	9	9	6	9	6	7	40	10	9	1	1
39	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	49.5	1.1	11	2	19	18	9	3.8	1	4	17	9	6	7	9	6	7	40	10	10	1	1
40	Doernbecher Children's Hospital at OHSU, Portland, Ore.	48.9	1.8	13	4	15	12	10	2.2	0	4	17	9	9	3	9	6	6	37	10	10	1	1
41	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	48.8	2.3	15	2	9	14	11	1.6	0	4	17	9	9	5	9	6	7	44	10	9	1	1
42	University of Chicago Comer Children's Hospital	48.2	2.2	14	0	9	10	13	2.3	1	4	16	9	9	6	9	6	7	45	10	9	1	1
43	Miami Children's Hospital	48.1	1.9	13	2	15	19	7	2.9	1	4	15	9	7	4	9	6	7	47	5	11	0	1
44	Children's National Medical Center, Washington, D.C.	47.5	0.8	13	4	11	18	9	2.9	1	4	16	9	8	6	9	6	7	36	10	9	1	1
44	Mount Sinai Kravis Children's Hospital, New York	47.5	1.6	13	4	14	14	6	1.5	1	4	15	9	9	4	9	6	7	47	9	9	1	1
46	American Family Children's Hospital, Madison, Wis.	47.0	0.8	13	3	13	13	5	2.6	1	4	16	9	9	7	9	6	7	40	10	9	1	1
47	Connecticut Children's Medical Center, Hartford	45.9	2.0	13	4	8	15	13	2.8	0	4	15	9	9	3	7	6	7	36	3	10	1	1
48	University of Iowa Children's Hospital, Iowa City	45.4	0.0	13	3	14	10	10	2.8	1	4	16	9	9	7	9	6	7	42	10	10	0	1
49	Children's Hospital of Alabama at UAB, Birmingham	45.1	0.6	12	2	12	19	2	2.7	1	4	16	9	7	5	9	6	7	43	9	10	1	1
50	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	44.9	0.0	15	1	16	13	8	2.8	0	4	17	9	7	7	9	6	7	40	10	11	0	1

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011-12—Gastroenterology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Survival after liver transplant	Preventing ICU bloodstream infections	Overall infection prevention	Patient volume	Surgical volume	Nonsurgical procedure volume	Nurse-patient ratio	Nurse Magnet hospital	Liver transplant program	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Commitment to clinical research
1	Cincinnati Children's Hospital Medical Center	100.0	78.7	2	3	20	49	6	10	4.8	1	4	8	9	9	8	8	6	7	10	8	1	1
2	Children's Hospital Boston	99.0	67.2	3	3	22	47	7	13	3.7	1	4	8	9	9	8	8	6	7	10	8	1	1
3	Children's Hospital of Philadelphia	98.1	69.3	3	2	15	56	7	13	3.6	1	4	8	9	9	8	8	6	7	10	8	1	1
4	Texas Children's Hospital, Houston	85.7	34.2	2	3	16	39	8	14	2.9	1	4	8	9	9	8	8	6	7	10	9	1	1
5	Children's Hospital Colorado, Denver	80.2	31.2	2	1	17	45	7	11	2.4	1	3	8	9	8	8	8	6	7	10	9	1	1
6	Children's Hospital of Pittsburgh of UPMC	76.0	24.7	3	2	15	47	8	7	2.8	0	4	7	9	9	8	8	6	7	9	8	1	1
7	Nationwide Children's Hospital, Columbus, Ohio	73.8	22.4	NA	3	19	41	7	12	2.6	1	NA	8	9	9	8	8	6	7	10	8	1	1
8	Children's Memorial Hospital, Chicago	67.2	11.1	2	3	20	43	6	11	2.3	1	4	8	9	9	8	8	6	7	10	8	1	1
9	Mattel Children's Hospital UCLA, Los Angeles	67.1	13.9	3	2	18	34	6	10	2.6	1	4	8	9	9	8	8	6	7	5	8	1	1
10	Children's Hospital Los Angeles	63.5	8.4	3	3	12	47	6	10	2.9	1	4	8	9	9	8	8	6	7	10	8	1	1
11	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	62.6	9.9	3	2	21	35	8	9	3.8	0	4	8	9	9	7	7	6	7	10	7	1	1
12	Johns Hopkins Children's Center, Baltimore	62.2	11.7	1	2	13	42	6	8	3.4	1	2	8	9	9	8	8	6	7	7	8	1	1
13	St. Louis Children's Hospital-Washington University	58.5	7.3	2	2	20	32	5	6	2.8	1	4	8	9	9	7	8	6	7	10	8	1	1
14	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	58.2	5.8	2	2	21	39	7	5	2.9	0	4	8	9	8	8	8	6	7	10	9	1	1
15	Children's Healthcare of Atlanta	57.6	4.9	2	2	11	53	9	10	3.2	0	4	8	9	8	8	8	6	7	10	8	1	1
16	Children's Hospital of Wisconsin, Milwaukee	57.4	6.6	2	2	13	37	5	11	2.3	1	2	8	9	9	8	8	6	7	10	8	1	1
17	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	56.4	4.8	3	3	16	36	6	7	2.8	0	3	8	9	9	8	8	6	7	10	8	1	1
18	Children's Hospital Cleveland Clinic	56.1	3.7	2	3	21	49	7	9	3.1	1	3	7	9	9	8	8	6	7	10	7	1	1
19	Seattle Children's Hospital	54.5	4.5	3	1	23	47	6	4	2.5	1	4	6	9	7	7	8	6	7	10	9	1	1
20	UCSF Benioff Children's Hospital, San Francisco	53.4	8.6	2	3	11	26	3	5	3.9	0	4	6	9	9	8	8	6	6	0	8	1	1
21	Children's National Medical Center, Washington, D.C.	52.9	1.5	2	3	19	36	7	6	2.9	1	4	8	9	9	8	8	6	7	10	9	1	1
22	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	52.7	3.1	NR	2	14	42	8	9	3.0	1	3	8	9	9	8	8	6	7	10	8	1	1
23	Children's Medical Center Dallas	52.1	1.8	2	2	16	42	4	10	3.2	1	4	8	9	9	8	8	6	7	10	9	1	1
24	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	52.0	1.3	2	2	23	40	7	10	3.8	1	3	8	9	9	8	8	6	7	10	8	1	1
25	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	51.0	0.4	3	2	25	43	8	8	2.4	0	4	8	9	9	7	8	6	7	10	8	1	1
26	Children's Hospital at Montefiore, New York	50.4	0.8	NR	2	25	47	10	10	2.8	0	2	7	9	9	8	8	6	7	10	8	1	1
27	Riley Hospital for Children at Indiana University Health, Indianapolis	49.9	1.8	2	2	19	36	5	11	3.1	1	3	8	9	9	8	8	6	7	4	8	1	1
28	Massachusetts General Hospital for Children, Boston	49.0	3.4	3	1	18	31	5	4	1.9	1	1	7	9	9	7	8	6	7	10	8	1	1
29	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	48.1	1.7	2	1	16	32	7	12	3.7	1	2	8	9	9	6	8	6	7	10	7	1	1
30	University of Chicago Comer Children's Hospital	47.7	2.4	3	3	10	24	5	5	2.3	1	3	7	9	9	7	8	6	7	10	7	1	1
31	Rady Children's Hospital, San Diego	47.6	0.8	1	3	21	35	4	7	3.6	0	2	8	9	8	8	8	6	7	9	9	1	1
32	Primary Children's Medical Center, Salt Lake City	47.2	0.8	1	2	19	25	7	11	4.8	0	4	8	9	9	8	8	6	7	4	8	1	1
33	Mount Sinai Kravis Children's Hospital, New York	46.5	2.3	3	2	17	28	4	3	1.5	1	3	6	9	7	8	8	6	7	9	8	1	1
34	Children's Hospital of Alabama at UAB, Birmingham	45.9	1.0	2	2	8	25	5	9	2.7	1	3	8	9	9	8	8	6	7	9	8	1	1
35	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	45.3	0.8	NA	2	18	33	5	7	3.0	0	NA	8	9	9	8	8	6	7	10	9	1	1
36	Yale-New Haven Children's Hospital, New Haven, Conn.	45.0	1.7	3	2	12	19	7	4	2.4	0	4	8	9	8	4	8	6	6	10	8	1	1
37	University of Iowa Children's Hospital, Iowa City	44.4	1.4	NR	2	18	23	3	4	2.8	1	2	8	9	9	8	8	6	7	10	8	1	1
38	Shands Children's Hospital at the University of Florida, Gainesville	44.2	1.5	2	2	7	23	6	7	2.1	1	3	5	8	9	8	8	6	7	8	9	1	1
39	North Carolina Children's Hospital at UNC, Chapel Hill	43.2	0.0	3	2	16	31	7	11	2.7	1	2	6	9	9	7	7	6	7	10	8	0	1
40	Duke Children's Hospital and Health Center, Durham, N.C.	43.1	1.1	2	2	13	24	6	6	2.3	1	3	7	9	8	8	8	6	6	10	8	0	1
40	Rainbow Babies and Children's Hospital, Cleveland	43.1	1.8	NA	3	11	26	4	7	2.5	1	NA	7	9	9	6	8	6	7	7	8	1	1
42	Miami Children's Hospital	42.7	1.6	NA	3	13	43	6	8	2.9	1	NA	5	9	7	7	8	6	7	5	9	0	1
43	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	41.6	0.0	2	2	10	27	5	3	1.6	0	4	8	9	7	8	8	6	7	10	8	1	1
44	Children's Hospital of Orange County, Calif.	40.8	0.4	NA	3	15	43	2	10	2.3	1	NA	7	9	9	7	8	6	7	10	7	0	1
45	University of Minnesota Amplatz Children's Hospital	40.7	0.9	2	2	10	18	4	5	2.6	1	3	7	9	8	5	8	6	7	10	7	1	1
46	Children's Hospital of Michigan, Detroit	38.4	0.0	NA	2	7	28	4	6	2.8	1	NA	8	9	8	6	8	6	7	10	8	1	1
47	Kosair Children's Hospital, Louisville, Ky.	37.8	0.0	NA	2	15	21	4	9	2.7	1	NA	7	9	9	8	8	6	7	9	7	0	1
48	American Family Children's Hospital, Madison, Wis.	37.6	0.5	3	2	15	22	2	8	2.6	1	3	7	9	9	4	8	6	5	10	8	0	0
49	Rush Children's Hospital, Chicago	37.2	0.3	3	2	17	21	6	3	2.5	1	2	6	9	7	8	8	2	7	10	7	0	1
50	Cook Children's Medical Center, Fort Worth	37.0	0.0	NA	3	15	25	6	6	3.3	1	NA	6	9	9	6	8	6	4	9	8	0	1

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011-12—Neonatology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Preventing ICU bloodstream infections	Overall infection prevention	Patient volume	Nurse-patient ratio	Nurse Magnet hospital	ECMO (heart-lung machine)	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Use of health information technology	Subspecialist availability	Fellowship programs	Commitment to clinical research	
1	Children's Hospital of Philadelphia	100.0	58.0	9	12	21	3.5	1	4	4	7	5	8	15	6	7	14	10	16	15	4
2	Children's Hospital Boston	93.2	41.8	9	16	14	4.0	1	4	4	7	5	9	17	6	7	14	10	16	15	4
3	Cincinnati Children's Hospital Medical Center	89.6	33.6	12	15	16	4.0	1	4	4	7	5	9	18	6	7	14	10	16	13	4
4	Rainbow Babies and Children's Hospital, Cleveland	81.0	28.1	12	13	8	2.5	1	4	4	7	5	9	18	6	7	13	7	16	10	4
5	Texas Children's Hospital, Houston	76.9	20.4	10	14	17	3.1	1	3	4	7	5	9	17	6	7	13	10	16	15	4
6	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	75.7	22.2	11	15	14	2.8	0	4	4	7	5	9	16	6	7	14	10	15	10	4
6	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	75.7	19.9	11	15	17	2.5	0	4	4	7	5	9	17	6	7	13	10	16	11	4
8	Children's National Medical Center, Washington, D.C.	65.4	10.5	12	13	17	2.8	1	4	4	7	5	9	18	6	6	13	10	16	11	4
9	St. Louis Children's Hospital-Washington University	63.5	8.3	12	15	16	3.4	1	4	4	7	5	9	18	6	7	13	10	16	11	4
10	Johns Hopkins Children's Center, Baltimore	63.3	12.1	12	12	13	2.9	1	4	4	7	5	9	14	6	6	12	7	16	12	4
11	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	62.6	8.2	12	11	18	3.0	1	4	4	7	5	9	18	6	7	13	10	16	11	4
12	Children's Hospital Colorado, Denver	60.6	10.4	10	11	12	1.2	1	3	4	7	4	9	18	6	7	13	10	16	11	4
13	Children's Hospital of Pittsburgh of UPMC	60.5	7.1	10	13	20	2.8	0	4	4	7	5	9	18	6	7	13	9	16	15	4
14	UCSF Benioff Children's Hospital, San Francisco	59.4	11.8	9	13	18	3.1	0	4	3	7	5	8	15	6	7	12	0	16	11	4
15	Nationwide Children's Hospital, Columbus, Ohio	56.6	4.0	12	14	18	2.8	1	4	4	7	5	9	18	6	7	13	10	16	15	4
16	Duke Children's Hospital and Health Center, Durham, N.C.	56.5	5.9	12	15	9	2.6	1	4	4	7	5	9	17	6	7	14	10	16	7	4
17	Children's Hospital Los Angeles	56.2	5.8	12	11	16	3.9	1	4	4	7	5	8	15	6	7	13	10	16	12	4
18	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	55.6	4.5	8	19	17	3.0	0	4	4	7	5	9	17	6	7	14	10	16	13	4
19	Children's Medical Center Dallas	55.1	3.8	10	15	15	2.9	1	4	4	7	5	9	18	6	7	14	10	16	13	4
20	Children's Memorial Hospital, Chicago	55.0	4.5	11	14	12	2.8	1	4	4	7	5	9	17	6	7	13	10	16	13	4
21	Rady Children's Hospital, San Diego	54.5	4.2	12	16	15	8.1	0	4	4	7	5	9	16	6	7	14	9	16	12	4
22	Seattle Children's Hospital	54.1	5.4	11	17	13	4.5	1	4	3	7	5	9	17	6	7	12	10	16	14	2
23	Children's Hospital of Alabama at UAB, Birmingham	53.9	4.7	12	10	19	2.8	1	3	4	7	5	9	17	6	7	12	9	16	10	4
24	Mattel Children's Hospital UCLA, Los Angeles	53.4	5.9	12	12	10	1.8	1	4	4	7	5	9	17	6	7	13	5	15	11	4
25	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	51.6	5.8	12	7	8	2.6	0	3	4	7	5	9	17	6	7	13	10	16	12	3
26	Children's Hospital at Montefiore, New York	51.3	1.2	12	19	21	2.6	0	4	4	7	5	9	18	6	7	14	10	16	15	4
27	Miami Children's Hospital	50.9	5.4	12	14	9	4.8	1	4	4	7	3	9	18	6	7	12	5	16	4	4
28	Children's Hospital of Wisconsin, Milwaukee	50.3	2.5	11	12	14	3.3	1	4	4	7	5	9	18	6	7	12	10	16	11	4
29	Children's Healthcare of Atlanta	49.6	2.0	12	11	18	3.7	0	4	4	7	5	9	17	6	7	14	10	16	12	4
30	Riley Hospital for Children at Indiana University Health, Indianapolis	49.5	2.1	10	14	19	2.4	1	4	4	7	5	9	18	6	7	14	4	16	11	4
31	University of Iowa Children's Hospital, Iowa City	48.2	3.9	2	11	10	2.5	1	3	4	7	5	9	18	6	7	14	10	16	9	4
32	Children's Hospitals and Clinics of Minnesota, Minneapolis	47.5	2.4	12	9	20	2.5	1	4	3	7	5	8	18	6	7	12	10	16	4	4
33	University of Chicago Comer Children's Hospital	46.5	2.4	12	8	10	3.4	1	4	4	7	5	9	17	6	6	12	10	16	8	4
34	Women and Infants Hospital of Rhode Island, Providence	46.1	3.2	11	16	6	2.4	0	3	4	7	5	9	18	6	7	12	10	16	5	3
35	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	45.9	1.6	12	17	12	2.5	0	4	4	7	5	7	17	6	7	13	10	16	8	4
36	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	44.8	1.6	8	16	7	4.5	1	4	4	7	5	9	17	6	7	14	10	16	7	3
37	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	44.6	0.4	8	17	14	4.6	1	4	4	7	5	9	17	6	7	14	10	16	7	4
38	Children's Hospital Cleveland Clinic	44.0	2.0	2	13	12	4.7	1	4	3	7	5	9	18	6	6	14	10	16	9	4
39	Children's Hospital of Orange County, Calif.	43.8	1.1	11	17	15	2.8	1	4	3	7	5	9	17	6	6	14	10	15	4	4
40	Children's Hospital of Michigan, Detroit	43.7	1.3	10	9	12	2.4	1	4	4	7	5	9	17	6	6	13	10	16	8	4
41	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	42.8	2.0	12	15	6	4.4	0	2	4	7	5	7	18	6	7	14	10	16	5	3
42	University of Minnesota Amplatz Children's Hospital	42.3	0.4	12	12	9	3.4	1	4	3	7	5	9	17	6	7	12	10	16	10	4
43	Yale-New Haven Children's Hospital, New Haven, Conn.	42.0	2.0	11	10	8	3.6	0	4	4	7	5	6	17	6	6	11	10	16	9	4
44	North Carolina Children's Hospital at UNC, Chapel Hill	41.6	1.2	12	10	13	3.7	1	3	3	7	5	8	16	6	7	13	10	16	8	3
45	Doernbecher Children's Hospital at OHSU, Portland, Ore.	41.0	0.8	12	14	8	3.5	0	4	4	7	5	8	17	6	6	12	10	16	5	4
45	Kosair Children's Hospital, Louisville, Ky.	41.0	0.0	10	15	14	2.4	1	4	3	7	5	9	18	6	7	13	9	16	3	4
47	Cook Children's Medical Center, Fort Worth	40.0	0.8	12	17	11	3.8	1	4	4	7	4	4	17	6	7	13	9	16	0	4
48	Akron Children's Hospital, Ohio	39.6	0.4	12	11	11	3.2	1	3	4	7	4	9	17	6	7	13	9	16	1	4
49	Primary Children's Medical Center, Salt Lake City	38.7	0.8	6	13	15	4.5	0	3	4	7	4	9	17	6	6	13	4	16	10	4
50	University of Rochester-Golisano Children's Hospital, N.Y.	38.1	2.0	12	8	8	3.2	1	4	2	7	5	8	14	6	6	12	6	16	9	3

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011-12—Nephrology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Survival after kidney transplant	Managing dialysis patients	Preventing biopsy complications	Preventing ICU bloodstream infections	Overall infection prevention	Patient volume	Catheter procedure volume	Dialysis volume	Kidney biopsy volume	Kidney transplant volume	Nurse-patient ratio	Nurse Magnet hospital	Dialysis patients receiving transplants	Advanced clinical services	Clinical support services	Advanced technologies	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Commitment to best practices	Use of health information technology	Subspecialist availability	Fellowship program	Commitment to clinical research
1	Children's Hospital Boston	100.0	54.6	22	18	2	3.0	41	24	6	9	5	5	3.7	1	2	7	9	1	11	6	7	14	10	8	1	1
2	Seattle Children's Hospital	94.9	44.5	24	20	2	1.0	43	23	8	10	9	4	2.5	1	1	6	9	1	11	6	7	13	10	8	1	1
3	Cincinnati Children's Hospital Medical Center	91.5	46.7	22	14	1	3.0	37	18	6	11	4	4	4.8	1	1	8	9	1	11	6	7	13	10	7	1	1
4	Children's Hospital of Philadelphia	87.7	32.6	22	19	2	2.0	39	27	7	10	6	3	3.6	1	2	8	9	1	10	6	7	13	10	8	1	1
5	Texas Children's Hospital, Houston	83.1	28.4	23	14	2	3.0	36	19	7	14	5	3	2.9	1	0	8	9	1	11	6	7	14	10	7	1	1
6	Mattel Children's Hospital UCLA, Los Angeles	76.5	18.2	22	14	2	2.0	35	24	10	10	7	5	2.6	1	1	8	9	1	11	6	7	14	5	7	1	1
7	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	74.7	25.1	24	12	0	2.0	29	16	6	12	7	5	3.8	0	1	6	9	1	9	6	7	11	10	8	1	1
8	Children's Hospital at Montefiore, New York	73.6	8.1	24	20	2	2.0	47	32	12	18	5	6	2.8	0	1	8	9	1	11	6	7	14	10	9	1	1
9	Children's Medical Center Dallas	67.2	6.6	21	19	2	2.0	41	29	10	16	5	5	3.2	1	1	8	9	1	11	6	7	13	10	8	1	1
10	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	66.0	8.8	24	17	2	2.0	45	26	5	9	7	3	3.8	1	1	8	9	1	11	6	7	14	10	8	1	1
11	Children's Memorial Hospital, Chicago	64.7	6.9	22	14	2	3.0	37	23	10	13	5	4	2.3	1	1	8	9	1	11	6	7	13	10	8	1	1
12	Johns Hopkins Children's Center, Baltimore	64.6	16.7	21	17	2	2.0	37	13	4	9	2	2	3.4	1	1	6	9	1	10	6	7	11	7	8	1	1
13	Children's Hospital of Pittsburgh of UPMC	63.6	9.7	17	20	2	2.0	41	30	5	10	5	5	2.8	0	1	6	9	1	11	6	7	13	9	7	1	1
13	University of Minnesota Amplatz Children's Hospital	63.6	10.4	22	16	2	2.0	30	20	8	12	5	3	2.6	1	1	7	9	1	10	6	7	13	10	7	1	1
15	Children's Hospital Los Angeles	59.4	6.5	22	11	2	3.0	29	17	9	14	2	6	2.9	1	1	8	9	1	10	6	7	13	10	8	0	1
16	Children's National Medical Center, Washington, D.C.	58.9	6.5	22	16	2	3.0	38	18	9	10	5	3	2.9	1	2	6	9	1	10	6	7	13	10	7	1	1
17	UCSF Benioff Children's Hospital, San Francisco	58.6	6.6	23	18	2	3.0	17	27	8	11	5	4	3.9	0	3	6	9	1	10	6	7	14	0	8	1	1
18	Children's Healthcare of Atlanta	58.0	4.0	23	11	2	2.0	22	33	7	14	6	6	3.2	0	1	7	9	1	11	6	7	13	10	8	1	1
19	Nationwide Children's Hospital, Columbus, Ohio	57.0	6.0	23	15	2	3.0	36	17	7	9	2	3	2.6	1	2	8	9	1	11	6	7	13	10	7	1	1
20	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	56.4	5.9	22	17	2	2.0	42	19	8	10	6	2	2.4	0	1	6	9	1	11	6	7	11	10	8	1	1
21	St. Louis Children's Hospital-Washington University	55.3	6.0	22	12	2	2.0	40	18	5	10	3	2	2.8	1	1	6	9	1	11	6	7	14	10	8	1	1
22	Children's Hospital of Alabama at UAB, Birmingham	54.5	2.1	23	18	2	2.0	23	16	9	12	7	5	2.7	1	1	8	9	1	11	6	7	14	9	8	1	1
23	Riley Hospital for Children at Indiana University Health, Indianapolis	52.8	2.5	22	19	2	2.0	38	25	9	13	4	4	3.1	1	1	8	9	1	11	6	7	13	4	8	0	1
24	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	51.5	4.5	20	18	2	2.0	41	18	5	6	2	4	2.9	0	1	8	9	1	11	6	7	14	10	8	0	1
25	Rainbow Babies and Children's Hospital, Cleveland	50.4	5.8	22	18	2	3.0	40	17	7	7	2	2	2.5	1	1	6	9	1	11	6	7	11	7	7	0	1
26	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	49.7	3.0	21	17	2	2.0	30	16	7	11	3	3	1.6	0	1	8	9	1	11	6	7	14	10	7	1	1
27	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	49.1	5.0	23	18	2	1.0	30	28	6	9	4	2	3.7	1	2	6	9	1	8	6	7	12	10	7	0	1
28	University of Iowa Children's Hospital, Iowa City	48.9	1.7	15	17	1	2.0	38	22	6	10	3	3	2.8	1	2	7	9	1	11	6	7	14	10	8	1	1
29	Rady Children's Hospital, San Diego	48.3	1.0	20	16	2	3.0	37	14	8	12	3	3	3.6	0	1	8	9	1	11	6	7	14	9	8	1	1
30	Mount Sinai Kravis Children's Hospital, New York	47.9	2.2	20	18	2	2.0	41	21	5	8	2	4	1.5	1	1	7	9	1	11	6	7	13	9	7	1	1
31	Children's Hospital of Wisconsin, Milwaukee	45.7	1.9	24	14	2	2.0	37	23	6	10	2	2	2.3	1	1	7	9	1	9	6	7	11	10	8	1	1
32	Children's Hospital Colorado, Denver	45.6	1.7	22	19	2	1.0	32	22	10	6	2	3	2.4	1	1	8	9	1	11	6	7	13	10	7	0	1
33	Shands Children's Hospital at the University of Florida, Gainesville	45.3	2.9	19	16	2	2.0	16	20	5	10	4	3	2.1	1	1	6	8	1	11	6	7	13	8	7	1	1
34	Duke Children's Hospital and Health Center, Durham, N.C.	44.4	2.7	23	14	2	2.0	27	16	6	9	3	2	2.3	1	1	5	9	1	11	6	7	12	10	8	0	1
35	Primary Children's Medical Center, Salt Lake City	43.7	2.4	23	6	2	2.0	27	21	6	13	4	4	4.8	0	0	8	9	1	8	6	6	13	4	8	0	1
36	Children's Hospital of Michigan, Detroit	43.6	0.4	21	15	2	2.0	29	25	8	12	4	3	2.8	1	1	6	9	1	9	6	7	12	10	7	1	1
37	Le Bonheur Children's Hospital, Memphis	43.0	1.6	24	14	2	2.0	27	15	4	5	4	2	2.4	0	1	7	9	1	11	6	7	13	10	8	1	1
38	Children's Memorial Hermann Hospital, Houston	42.3	2.1	24	19	2	2.0	28	14	8	10	3	2	2.3	0	1	8	9	1	9	1	7	14	4	7	1	1
39	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	42.2	1.6	19	17	2	2.0	27	20	5	11	3	2	3	1	1	6	9	1	9	6	7	12	10	8	0	1
40	Children's Hospital Cleveland Clinic	42.1	1.9	18	14	2	3.0	42	29	4	10	5	1	3.1	1	0	5	9	1	10	6	7	12	10	8	0	0
41	Phoenix Children's Hospital	42.0	1.4	22	16	2	NR	40	25	7	11	5	2	2.1	0	0	6	9	1	11	5	7	12	10	7	0	1
42	Akron Children's Hospital, Ohio	41.4	0.4	24	20	2	3.0	37	28	6	10	2	2	3.3	1	1	5	9	1	11	6	7	11	9	7	0	1
43	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	40.9	2.5	NR	20	1	2.0	45	16	6	6	2	2	3	0	3	7	9	1	11	6	7	8	10	7	0	1
44	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	40.5	0.0	10	16	2	3.0	40	16	5	9	2	2	2.8	0	2	8	9	1	11	6	7	13	10	8	0	1
45	Miami Children's Hospital	39.4	0.0	18	16	2	3.0	38	15	5	12	4	2	2.9	1	1	7	9	1	10	6	7	10	5	8	0	1
46	Massachusetts General Hospital for Children, Boston	38.4	3.2	22	16	2	1.0	40	11	3	8	2	2	1.9	1	2	5	9	1	8	6	7	8	10	7	0	1
47	Levine Children's Hospital, Charlotte, N.C.	37.1	0.8	19	12	2	2.0	34	17	5	11	6	2	2.7	0	0	7	8	1	10	6	7	12	4	7	0	1
48	American Family Children's Hospital, Madison, Wis.	36.2	0.9	24	12	2	2.0	40	13	4	4	5	2	2.6	1	1	6	9	1	8	6	7	11	10	7	0	1
49	Doernbecher Children's Hospital at OHSU, Portland, Ore.	35.6	1.5	21	6	2	2.0	26	15	4	3	5	2	2.2	0	0	8	9	1	11	6	6	9	10	7	0	1
50	University of Chicago Comer Children's Hospital	35.3	0.0	19	14	2	3.0	22	13	7	9	2	2	2.3	1	1	6	9	1	9	6	7	12	10	7	0	1

+ 2SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011--Neurology & Neurosurgery

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Surgical survival	Epilepsy management	Overall infection prevention	New-patient volume	Surgical volume	Epilepsy treatment volume	Nurse-patient ratio	Nurse Magnet hospital	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Commitment to best practices	Use of health information technology	Subspecialist availability	Fellowship programs	Commitment to clinical research
1	Children's Hospital Boston	100.0	66.7	14	6	20	27	28	10	3.7	1	19	9	4	13	8	6	7	8	10	12	2	2
2	Children's Hospital of Philadelphia	87.8	48.2	11	6	17	22	27	11	3.6	1	14	9	4	12	8	6	7	8	10	11	2	2
3	Johns Hopkins Children's Center, Baltimore	82.9	38.0	9	6	20	21	27	10	3.4	1	19	9	3	12	8	6	7	8	7	13	2	2
4	Texas Children's Hospital, Houston	75.6	23.0	13	5	18	32	25	12	2.9	1	19	9	4	12	8	6	7	8	10	11	2	2
5	St. Louis Children's Hospital-Washington University	72.2	20.1	10	8	18	22	26	12	2.8	1	18	9	4	13	8	6	7	8	10	13	1	2
6	Primary Children's Medical Center, Salt Lake City	70.7	22.6	11	5	17	21	28	10	4.8	0	16	9	4	12	8	6	7	8	4	13	2	2
7	Children's Hospital Cleveland Clinic	70.2	17.4	14	6	19	22	28	13	3.1	1	18	9	4	13	8	6	7	8	10	12	1	2
8	Cincinnati Children's Hospital Medical Center	68.0	16.1	14	5	20	18	17	12	4.8	1	19	9	4	13	8	6	7	8	10	12	2	2
9	Children's Memorial Hospital, Chicago	63.4	13.0	14	3	19	19	27	10	2.3	1	19	9	4	13	8	6	7	8	10	11	2	2
10	Seattle Children's Hospital	62.9	11.4	12	4	23	22	32	12	2.5	1	18	9	4	11	8	6	7	8	10	11	2	2
11	Children's Hospital of Alabama at UAB, Birmingham	61.5	13.4	11	7	14	12	25	11	2.7	1	16	9	4	13	8	6	7	8	9	11	2	2
11	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	61.5	12.5	13	7	18	18	23	10	2.9	0	18	9	3	12	8	6	7	8	10	13	2	2
13	Children's Hospital of Pittsburgh of UPMC	60.5	9.4	12	7	18	20	30	11	2.8	0	19	9	4	13	8	6	7	8	9	13	2	2
14	Miami Children's Hospital	60.4	8.8	14	6	19	29	32	13	2.9	1	18	9	3	12	8	6	7	8	5	13	2	2
15	Children's National Medical Center, Washington, D.C.	59.2	8.7	14	5	18	22	24	12	2.9	1	19	9	4	13	8	6	7	8	10	13	1	2
16	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	56.7	8.3	14	6	21	31	17	9	3.7	1	19	9	3	13	8	6	7	8	10	11	1	2
17	Children's Hospital Los Angeles	54.0	10.6	11	0	14	23	17	7	2.9	1	15	9	3	13	8	6	7	8	10	12	2	2
18	Children's Hospital at Montefiore, New York	53.8	3.5	14	6	26	24	28	14	2.8	0	19	9	4	13	8	6	7	8	10	13	2	2
19	Rainbow Babies and Children's Hospital, Cleveland	52.6	7.7	14	5	19	25	13	11	2.5	1	18	9	3	13	8	6	7	8	7	11	1	2
20	Children's Hospital Colorado, Denver	50.7	4.9	13	5	16	21	16	12	2.4	1	16	9	4	13	8	6	7	8	10	12	2	2
21	Children's Medical Center Dallas	50.5	2.8	12	7	21	29	33	10	3.2	1	18	9	3	13	8	6	7	8	10	12	2	2
22	UCSF Benioff Children's Hospital, San Francisco	49.8	9.3	12	7	17	19	10	7	3.9	0	17	9	4	10	8	6	7	8	0	11	1	2
23	Mattel Children's Hospital UCLA, Los Angeles	49.0	7.0	12	2	13	22	22	10	2.6	1	17	9	4	13	8	6	7	8	5	10	1	2
24	Children's Healthcare of Atlanta	48.7	3.6	12	5	15	33	35	11	3.2	0	13	9	4	11	8	6	7	8	10	13	1	2
25	Le Bonheur Children's Hospital, Memphis	46.9	3.8	12	8	15	14	24	10	2.4	0	14	9	4	13	8	6	7	8	10	12	2	2
26	Children's Hospital of Michigan, Detroit	45.7	1.0	13	7	14	31	24	15	2.8	1	18	9	4	13	8	6	7	8	10	12	1	2
27	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	45.4	2.2	14	8	26	20	22	7	2.4	0	18	9	3	13	8	6	7	8	10	11	2	2
28	Riley Hospital for Children at Indiana University Health, Indianapolis	45.3	2.2	14	6	21	24	31	8	3.1	1	18	9	3	12	8	6	7	8	4	11	2	2
29	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	44.6	1.8	12	4	24	23	25	10	3.0	0	19	9	4	10	8	6	7	8	10	13	1	2
30	Massachusetts General Hospital for Children, Boston	44.4	4.2	8	8	19	19	15	6	1.9	1	15	9	4	11	8	6	7	8	10	11	1	2
31	University of Chicago Comer Children's Hospital	43.7	2.4	11	6	11	18	19	8	2.3	1	18	9	4	13	8	6	7	8	10	12	2	2
32	Nationwide Children's Hospital, Columbus, Ohio	43.4	0.9	14	7	18	24	19	12	2.6	1	19	9	3	13	8	6	7	7	10	12	2	2
33	Children's Hospital of Wisconsin, Milwaukee	41.6	1.2	11	6	17	18	16	8	2.3	1	17	9	4	13	8	6	7	8	10	12	2	2
34	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	41.5	5.7	12	3	22	14	23	7	3.8	0	11	9	3	5	7	6	7	8	10	11	1	2
35	Cook Children's Medical Center, Fort Worth	41.4	0.6	12	6	23	17	19	13	3.3	1	18	9	4	12	8	6	7	8	9	13	0	2
36	Duke Children's Hospital and Health Center, Durham, N.C.	40.5	0.6	10	3	22	27	33	6	2.3	1	17	9	4	10	8	6	7	8	10	12	1	2
37	Rady Children's Hospital, San Diego	39.2	0.0	11	5	23	19	28	7	3.6	0	16	9	4	12	8	6	7	8	9	12	2	2
38	Kosair Children's Hospital, Louisville, Ky.	39.1	0.6	14	2	22	19	18	11	2.7	1	18	9	4	9	8	6	7	7	9	13	1	2
39	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	37.7	0.0	14	5	15	20	17	12	3.0	1	16	9	3	10	8	6	7	8	10	12	2	2
40	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	36.8	0.3	11	4	20	14	21	7	3.8	1	15	9	4	11	8	6	7	8	10	12	1	2
41	Children's Hospital of Orange County, Calif.	36.4	0.3	10	3	22	27	22	9	2.3	1	12	9	3	9	8	6	7	7	10	12	2	2
42	Phoenix Children's Hospital	35.9	1.5	9	7	17	28	27	9	2.1	0	16	9	2	8	8	5	7	8	10	12	0	2
43	Doernbecher Children's Hospital at OHSU, Portland, Ore.	34.4	1.6	14	2	15	11	16	9	2.2	0	18	9	3	9	8	6	6	8	10	11	1	2
44	Gillette Children's Specialty Healthcare, St. Paul, Minn.	33.9	0.6	14	2	18	17	21	5	5.8	1	19	9	3	11	8	6	7	8	10	12	0	1
45	American Family Children's Hospital, Madison, Wis.	33.4	0.0	13	6	18	11	14	6	2.6	1	18	9	3	12	8	6	7	7	10	11	1	2
46	University of Iowa Children's Hospital, Iowa City	33.0	0.0	10	2	16	14	17	5	2.8	1	15	9	3	12	8	6	7	8	10	12	2	2
47	Shands Children's Hospital at the University of Florida, Gainesville	32.0	0.4	9	2	14	14	17	13	2.1	1	17	8	4	11	8	6	7	8	8	11	0	2
48	University of Rochester-Golisano Children's Hospital, N.Y.	31.1	2.4	12	1	14	13	11	6	2.4	1	14	9	3	12	6	6	6	6	6	12	1	2
48	Women and Children's Hospital of Buffalo	31.1	0.0	14	3	15	12	18	10	5.2	0	18	9	4	10	8	6	7	8	0	10	1	2
50	Joseph M. Sanzari Children's Hospital, Hackensack, N.J.	30.8	0.4	14	5	14	11	17	8	4.2	1	14	7	4	11	7	6	7	8	7	12	0	2

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011-12—Orthopedics

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Preventing surgical complications	Overall infection prevention	Patient volume	Procedure volume	Nurse-patient ratio	Nurse Magnet hospital	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Commitment to best practices	Use of health information technology	Subspecialist availability	Fellowship program	Commitment to clinical research
1	Children's Hospital Boston	100.0	66.9	6	18	26	36	3.7	1	6	9	3	8	8	6	7	5	10	16	1	1
2	Children's Hospital of Philadelphia	99.2	60.3	8	14	23	44	3.6	1	6	9	3	8	8	6	7	5	10	17	1	1
3	Children's Medical Center-Texas Scottish Rite Hospital for Children, Dallas	98.3	61.8	6	17	24	41	3.2	1	6	9	3	8	8	6	7	5	10	16	1	1
4	Rady Children's Hospital, San Diego	89.1	44.6	6	18	20	38	3.6	0	6	9	3	8	8	6	7	5	9	17	0	1
5	Cincinnati Children's Hospital Medical Center	77.9	20.1	9	17	14	31	4.8	1	6	9	3	8	8	6	7	5	10	17	1	1
6	Children's Hospital Los Angeles	75.2	21.6	7	13	16	40	2.9	1	6	9	3	8	8	6	7	5	10	15	0	1
7	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	72.6	19.2	7	17	18	26	2.8	0	6	9	3	8	8	6	7	5	10	16	0	1
8	Children's Healthcare of Atlanta	71.3	13.8	5	13	25	46	3.2	0	6	9	3	8	8	6	7	5	10	17	1	1
9	Children's Hospital Colorado, Denver	69.1	9.5	8	13	24	46	2.4	1	6	9	3	8	8	6	7	5	10	17	1	1
10	St. Louis Children's-Washington Univ.-Shriner's Hosp.	66.7	12.1	6	16	16	32	2.8	1	5	9	3	7	8	6	7	5	10	16	1	1
11	Johns Hopkins Children's Center, Baltimore	59.1	6.9	7	14	19	27	3.4	1	5	9	3	7	8	6	7	5	7	17	0	1
12	Rainbow Babies and Children's Hospital, Cleveland	58.3	5.4	6	15	16	31	2.5	1	6	9	3	8	8	6	7	5	7	16	1	1
13	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	57.3	4.3	8	21	17	32	2.4	0	6	9	3	6	8	6	7	5	10	15	1	1
14	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	57.0	4.2	7	17	13	31	2.9	0	6	9	3	7	8	6	7	5	10	17	1	1
15	Texas Children's Hospital, Houston	56.9	4.9	5	16	14	21	2.9	1	6	9	3	8	8	6	7	5	10	16	1	1
16	Seattle Children's Hospital	56.4	4.1	9	19	17	23	2.5	1	4	9	3	8	8	6	7	5	10	17	0	1
17	Children's Memorial Hospital, Chicago	55.6	5.0	6	16	14	24	2.3	1	6	9	3	8	8	6	7	5	10	15	0	1
18	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	54.1	2.7	8	18	14	20	3.7	1	6	9	3	8	8	6	7	5	10	16	0	1
19	Mattel Children's Hospital UCLA, Los Angeles	54.0	3.0	6	14	24	23	2.6	1	6	9	3	8	8	6	7	5	5	16	1	1
20	Nationwide Children's Hospital, Columbus, Ohio	53.5	1.6	8	15	24	26	2.6	1	5	9	3	8	8	6	7	5	10	16	1	1
21	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	53.4	1.4	7	19	19	32	3.8	1	6	9	3	8	8	6	7	5	10	16	0	1
22	Children's Hospital at Montefiore, New York	53.1	0.3	6	21	23	41	2.8	0	6	9	3	8	8	6	7	5	10	17	1	1
23	Children's Hospital of Pittsburgh of UPMC	52.8	2.2	6	15	21	28	2.8	0	6	9	3	8	8	6	7	5	9	16	1	1
24	University of Iowa Children's Hospital, Iowa City	51.8	2.4	7	14	11	17	2.8	1	6	9	3	8	8	6	7	5	10	17	0	1
25	Gillette Children's Specialty Healthcare, St. Paul, Minn.	51.5	2.9	7	15	23	28	5.8	1	5	9	3	8	8	6	7	4	10	15	1	0
26	Children's Hospital Cleveland Clinic	50.0	2.2	5	17	25	29	3.1	1	5	9	3	8	8	6	7	5	10	15	0	0
27	Children's National Medical Center, Washington, D.C.	49.9	0.7	5	15	25	19	2.9	1	6	9	3	8	8	6	7	5	10	17	0	1
28	Children's Hospital of Wisconsin, Milwaukee	49.0	0.4	6	14	17	28	2.3	1	6	9	3	8	8	6	7	5	10	17	0	1
29	Riley Hospital for Children at Indiana University Health, Indianapolis	48.8	2.5	3	16	18	21	3.1	1	6	9	3	7	8	6	7	5	4	16	0	1
30	Primary Children's Medical Center, Salt Lake City	48.3	5.3	5	14	7	17	4.8	0	5	9	3	4	8	6	7	5	4	14	1	1
31	Akron Children's Hospital, Ohio	47.9	0.7	8	13	14	22	3.3	1	6	9	3	6	8	6	7	5	9	16	0	1
32	Le Bonheur Children's Hospital, Memphis	47.6	0.6	5	12	19	34	2.4	0	6	9	3	7	8	6	7	5	10	15	1	1
33	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	47.4	1.9	5	13	9	25	3.0	1	5	9	3	6	8	6	7	5	10	16	0	1
34	Duke Children's Hospital and Health Center, Durham, N.C.	45.5	0.0	6	17	15	28	2.3	1	5	9	3	7	8	6	7	5	10	15	0	1
34	Miami Children's Hospital	45.5	0.0	9	16	15	20	2.9	1	5	9	3	7	8	6	7	5	5	16	0	1
36	Children's Hospital of Michigan, Detroit	45.3	0.0	6	11	19	17	2.8	1	6	9	3	8	8	6	7	5	10	15	0	1
36	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	45.3	1.0	9	17	14	19	3.8	0	6	9	3	3	7	6	7	5	10	15	0	1
38	Arnold Palmer Medical Center, Orlando, Fla.	44.4	5.1	7	13	2	18	2.6	0	5	8	3	3	6	5	6	5	7	15	1	1
39	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	44.2	0.3	8	19	8	16	3.0	0	5	9	3	5	8	6	7	5	10	16	0	1
40	Children's Hospital of Alabama at UAB, Birmingham	44.1	0.5	6	11	19	34	2.7	1	5	9	3	8	8	6	7	5	9	14	0	0
41	Children's Hospital and Medical Center, Omaha	43.9	1.3	7	17	6	24	2.9	1	4	8	3	4	8	5	7	5	10	16	0	1
42	North Carolina Children's Hospital at UNC, Chapel Hill	43.1	0.0	6	12	11	22	2.7	1	5	9	3	6	7	6	7	5	10	17	0	1
42	Phoenix Children's Hospital	43.1	0.6	7	14	15	37	2.1	0	5	9	3	4	8	5	7	5	10	16	0	0
44	Kosair Children's Hospital, Louisville, Ky.	42.5	0.5	4	17	7	19	2.7	1	5	9	3	4	8	6	7	5	9	16	0	1
45	Children's Hospital of Orange County, Calif.	42.3	0.3	7	19	8	15	2.3	1	4	9	3	4	8	6	7	5	10	15	0	1
46	University of Chicago Comer Children's Hospital	42.1	0.0	6	7	10	20	2.3	1	5	9	3	8	8	6	6	5	10	16	0	1
47	Massachusetts General Hospital for Children, Boston	39.2	0.3	6	18	1	13	1.9	1	6	9	3	4	8	6	7	5	10	14	0	0
48	Connecticut Children's Medical Center, Hartford	38.9	1.5	0	12	11	18	2.8	0	6	9	3	6	6	6	7	5	3	17	0	1
48	University of Rochester-Golisano Children's Hospital, N.Y.	38.9	0.6	2	9	11	17	2.4	1	5	9	3	7	6	6	7	5	6	17	0	1
50	Penn State Hershey Children's Hospital, Hershey, Pa.	38.5	0.3	7	10	7	15	2.9	1	5	9	3	4	8	6	7	5	10	14	0	0

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.



## Pediatric Rankings 2011-12—Pulmonology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Asthma inpatient care	Asthma management	Cystic fibrosis management	Lung disease of prematurity management	Muscular dystrophy management	Preventing deaths of patients on ventilators	Preventing ICU bloodstream infections	Overall infection prevention	Patient volume	Nonsurgical procedure volume	Nurse-patient ratio	Nurse Magnet hospital	Lung transplant program	Advanced clinical services	Clinical support services	Advanced technologies	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Commitment to best practices	Use of health information technology	Subspecialist availability	Fellowship program	Commitment to clinical research
1	Children's Hospital of Philadelphia	100.0	53.6	9	10	6	6	6	3	2	30	21	14	3.6	1	5	11	9	1	8	6	7	5	10	10	1	1
2	Cincinnati Children's Hospital Medical Center	99.1	58.0	10	10	5	4	4	3	3	30	17	13	4.8	1	NA	12	9	1	8	6	7	5	10	10	1	1
3	Children's Hospital Boston	90.3	41.2	8	8	4	5	4	3	3	23	16	9	3.7	1	3	12	9	1	8	6	7	6	10	10	1	1
4	Children's Hospital Colorado, Denver	89.3	44.9	10	4	4	0	6	3	1	18	17	12	2.4	1	1	12	9	1	8	6	7	6	10	10	1	1
5	Texas Children's Hospital, Houston	86.9	42.9	10	6	3	1	1	2	3	19	17	9	2.9	1	4	12	9	1	8	6	7	6	10	9	1	1
6	St. Louis Children's Hospital-Washington University	78.0	25.6	9	12	3	6	3	3	2	27	14	7	2.8	1	4	10	9	1	8	6	7	4	10	10	1	1
7	Children's Hospital of Pittsburgh of UPMC	75.4	18.7	8	7	5	3	6	3	2	28	20	11	2.8	0	3	12	9	1	8	6	7	6	9	9	1	1
8	Rainbow Babies and Children's Hospital, Cleveland	74.2	21.6	9	10	3	7	2	3	3	28	13	7	2.5	1	NA	11	9	1	8	6	7	5	7	10	1	1
9	Johns Hopkins Children's Center, Baltimore	73.2	26.1	7	4	4	4	0	3	2	18	14	5	3.4	1	1	11	9	1	8	6	7	5	7	9	1	1
10	North Carolina Children's Hospital at UNC, Chapel Hill	70.5	19.5	9	4	3	6	4	3	2	19	10	10	2.7	1	5	9	9	1	7	6	7	5	10	9	1	1
11	Seattle Children's Hospital	69.6	21.5	10	4	6	1	3	3	1	18	11	10	2.5	1	NA	10	9	1	8	6	7	5	10	9	1	0
12	Riley Hospital for Children at Indiana University Health, Indianapolis	65.1	6.7	10	15	5	8	6	3	2	30	18	14	3.1	1	NA	12	9	1	8	6	7	6	4	10	1	1
13	Children's Hospital Los Angeles	63.9	10.3	10	9	2	4	3	3	3	30	14	7	2.9	1	2	8	9	1	8	6	7	5	10	10	1	1
14	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	61.8	8.2	10	2	4	4	6	3	2	31	14	9	3.8	0	2	12	9	1	7	6	7	6	10	9	1	1
15	Nationwide Children's Hospital, Columbus, Ohio	61.2	4.8	10	4	3	5	6	3	3	32	15	10	2.6	1	5	11	9	1	8	6	7	6	10	10	1	1
16	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	58.0	7.9	8	8	3	4	4	3	2	26	13	4	2.9	0	NA	12	9	1	8	6	7	4	10	10	1	1
17	Children's Healthcare of Atlanta	57.0	3.9	9	7	4	5	6	2	2	24	19	8	3.2	0	NA	12	9	1	8	6	7	6	10	11	1	1
17	Children's Memorial Hospital, Chicago	57.0	3.3	10	5	5	5	5	3	3	33	12	8	2.3	1	NA	12	9	1	8	6	7	6	10	10	1	1
19	Children's Hospital of Wisconsin, Milwaukee	54.2	3.3	8	2	6	0	2	3	2	24	20	9	2.3	1	NA	11	9	1	8	6	7	5	10	10	1	1
20	Children's National Medical Center, Washington, D.C.	53.8	2.3	6	13	5	5	6	3	3	20	15	9	2.9	1	NA	10	9	1	8	6	7	5	10	10	1	1
21	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	51.6	2.6	9	10	5	1	1	3	2	29	13	8	2.4	0	NA	12	9	1	8	6	7	6	10	10	1	1
22	Children's Hospital Cleveland Clinic	51.1	0.7	10	8	0	7	6	3	3	34	16	8	3.1	1	4	11	9	1	8	6	7	6	10	10	0	1
23	Miami Children's Hospital	51.0	0.4	8	15	5	9	6	3	3	33	17	4	2.9	1	NA	12	9	1	8	6	7	6	5	11	0	1
24	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	50.3	1.2	8	9	5	5	4	3	3	29	15	6	2.8	0	NA	10	9	1	8	6	7	6	10	10	1	1
25	Kosair Children's Hospital, Louisville, Ky.	50.2	2.3	9	6	4	3	6	3	2	30	9	11	2.7	1	NA	9	9	1	8	6	7	5	9	10	0	1
26	Children's Hospital at Montefiore, New York	50.1	0.0	8	11	0	7	5	3	2	37	18	14	2.8	0	NA	12	9	1	8	6	7	6	10	10	1	1
27	Children's Hospital of Alabama at UAB, Birmingham	49.9	2.3	9	6	3	8	3	3	2	13	14	10	2.7	1	NA	11	9	1	8	6	7	3	9	10	1	1
28	Rady Children's Hospital, San Diego	49.8	1.9	10	6	5	3	2	3	3	33	11	5	3.6	0	NA	9	9	1	8	6	7	6	9	10	1	1
29	Duke Children's Hospital and Health Center, Durham, N.C.	49.7	3.5	8	3	4	2	6	3	2	17	9	6	2.3	1	4	10	9	1	8	6	7	3	10	9	1	1
29	University of Iowa Children's Hospital, Iowa City	49.7	1.7	9	9	5	6	2	3	2	30	10	5	2.8	1	NA	11	9	1	8	6	7	6	10	9	1	1
31	Children's Medical Center Dallas	49.5	1.0	8	3	2	5	6	3	2	26	13	9	3.2	1	NA	12	9	1	8	6	7	6	10	11	0	1
32	Cook Children's Medical Center, Fort Worth	47.8	1.2	9	6	3	5	4	3	3	32	16	5	3.3	1	NA	9	9	1	8	6	7	6	9	9	0	1
33	Children's Hospitals and Clinics of Minnesota, Minneapolis	46.9	0.6	8	5	5	2	1	3	3	19	16	5	5.0	1	NA	8	9	1	8	6	7	6	10	10	1	1
34	Massachusetts General Hospital for Children, Boston	46.6	0.4	10	7	3	6	6	3	1	34	9	8	1.9	1	NA	11	9	1	8	6	7	6	10	9	1	1
35	University of Chicago Comer Children's Hospital	46.5	1.0	10	2	3	7	6	3	3	22	11	4	2.3	1	NA	11	9	1	8	6	7	2	10	10	1	1
36	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	46.1	0.3	10	7	4	4	5	3	2	31	15	6	3.8	1	NA	6	9	1	8	6	7	6	10	10	0	1
36	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	46.1	1.2	10	4	4	8	5	3	2	14	11	6	3.0	1	NA	9	9	1	8	6	7	4	10	9	1	1
38	Children's Hospital of Michigan, Detroit	45.6	0.3	10	15	4	4	6	2	2	20	16	8	2.8	1	NA	8	9	1	8	6	7	5	10	10	0	1
39	Shands Children's Hospital at the University of Florida, Gainesville	44.0	0.8	10	6	3	8	6	3	2	23	8	6	2.1	1	3	11	8	1	8	6	7	5	8	9	1	0
40	Akron Children's Hospital, Ohio	43.8	1.7	9	6	3	8	0	3	3	20	10	4	3.3	1	NA	8	9	1	8	6	7	4	9	9	0	1
41	Phoenix Children's Hospital	43.5	1.4	10	0	5	7	6	3	NR	14	13	9	2.1	0	NA	10	9	1	8	5	7	5	10	9	0	1
42	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	43.2	0.4	9	7	5	5	3	3	1	29	9	6	3.7	1	1	9	9	1	8	6	7	4	10	9	0	1
43	Children's Hospital of Orange County, Calif.	42.9	0.0	5	11	4	6	3	3	3	31	15	5	2.3	1	NA	8	9	1	8	6	7	6	10	8	0	1
44	American Family Children's Hospital, Madison, Wis.	42.5	0.7	10	1	5	6	2	3	2	12	8	4	2.6	1	NA	9	9	1	8	6	6	4	10	10	1	1
45	Doernbecher Children's Hospital at OHSU, Portland, Ore.	42.3	0.0	10	11	4	7	6	3	2	30	8	7	2.2	0	NA	8	9	1	8	6	6	6	10	9	0	1
45	Yale-New Haven Children's Hospital, New Haven, Conn.	42.3	2.0	8	5	5	7	6	0	2	15	7	3	2.4	0	NA	11	9	1	8	6	6	5	10	9	1	1
47	UCSF Benioff Children's Hospital, San Francisco	41.0	0.8	10	10	4	7	6	3	3	12	7	3	3.9	0	NA	10	9	1	8	6	7	3	0	9	1	1
48	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	40.9	0.0	7	7	5	9	2	3	2	33	11	4	3.0	0	NA	11	9	1	8	6	7	3	10	8	0	1
49	University of Minnesota Amplatz Children's Hospital	40.7	1.6	2	0	6	3	3	3	2	17	5	2	2.6	1	2	7	9	1	8	6	7	3	10	9	1	1
50	Mount Sinai Kravis Children's Hospital, New York	40.5	0.0	8	10	4	7	6	3	2	31	7	4	1.5	1	NA	11	9	1	8	6	7	5	9	8	1	0

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

## Pediatric Rankings 2011-12—Urology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Success in preventing surgical complications	Overall infection prevention	Patient volume	Surgical volume	Minimally invasive procedure volume	Nurse-patient ratio	Nurse Magnet hospital	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Commitment to involving parents and family	Commitment to quality improvement	Commitment to best practices	Use of health information technology	Subspecialist information technology	Fellowship program	Commitment to clinical research
1	Children's Hospital Boston	100.0	81.8	17	14	21	21	16	3.7	1	6	9	4	6	8	6	7	3	10	10	1	3
2	Children's Hospital of Philadelphia	98.7	78.9	16	10	23	21	13	3.6	1	6	9	4	6	8	6	7	3	10	11	1	3
3	Riley Hospital for Children at Indiana University Health, Indianapolis	87.8	56.4	17	13	20	20	13	3.1	1	6	9	4	6	8	6	7	3	4	10	1	3
4	Cincinnati Children's Hospital Medical Center	77.6	33.3	15	13	19	18	12	4.8	1	6	9	4	6	8	6	7	3	10	10	1	3
5	Monroe Carell Jr. Children's Hospital at Vanderbilt, Nashville	71.6	29.8	15	9	17	17	7	3.0	1	6	9	4	6	8	6	7	3	10	10	1	3
6	Children's Memorial Hospital, Chicago	68.6	20.0	20	12	17	19	11	2.3	1	6	9	4	6	8	6	7	3	10	10	1	3
7	Seattle Children's Hospital	63.1	20.0	13	15	12	20	9	2.5	1	5	9	4	6	8	6	7	1	10	11	1	3
8	Texas Children's Hospital, Houston	59.6	18.5	13	12	15	20	8	2.9	1	5	9	4	5	8	6	7	3	10	9	1	2
9	Johns Hopkins Children's Center, Baltimore	58.3	26.4	15	10	12	13	5	3.4	1	5	9	3	6	8	6	5	1	7	9	1	3
10	Children's Medical Center Dallas	54.4	6.5	15	13	20	20	15	3.2	1	6	9	4	6	8	6	7	2	10	10	1	3
11	Children's Healthcare of Atlanta	54.2	7.4	17	9	18	24	13	3.2	0	6	9	4	6	8	6	7	3	10	10	1	2
12	Steven and Alexandra Cohen Children's Medical Center, New Hyde Park, N.Y.	47.6	3.9	21	15	13	20	9	3.0	0	6	9	4	5	8	6	7	3	10	10	1	3
13	Rady Children's Hospital, San Diego	46.8	5.3	16	14	20	17	6	3.6	0	6	9	2	6	8	6	7	3	9	10	1	3
14	Nationwide Children's Hospital, Columbus, Ohio	46.7	3.4	19	12	22	14	12	2.6	1	5	9	3	6	8	6	7	3	10	10	1	3
15	Children's National Medical Center, Washington, D.C.	45.4	5.6	17	11	16	17	6	2.9	1	5	9	2	5	8	6	7	3	10	10	1	3
16	Children's Hospital of Pittsburgh of UPMC	45.3	4.9	14	11	13	19	7	2.8	0	6	9	4	6	8	6	7	3	9	10	1	3
16	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	45.3	4.9	12	13	15	22	9	2.9	0	6	9	4	6	8	6	7	3	10	11	0	2
18	Children's Hospital Los Angeles	40.9	3.2	14	9	15	19	9	2.9	1	6	9	4	6	8	6	7	3	10	9	0	3
19	St. Louis Children's Hospital-Washington University	39.9	3.6	11	13	14	16	7	2.8	1	6	9	4	5	8	6	7	3	10	10	0	3
20	University of Michigan C.S. Mott Children's Hospital, Ann Arbor	39.8	3.2	17	17	12	17	11	2.4	0	4	9	4	5	8	6	7	3	10	10	0	3
21	Children's Mercy Hospitals and Clinics, Kansas City, Mo.	39.2	1.7	16	15	18	18	7	3.8	1	5	9	3	6	8	6	7	3	10	10	0	3
22	Children's Hospital at OU Medical Center, Oklahoma City	38.9	3.4	19	8	19	19	15	2.1	0	6	8	4	6	5	5	7	3	3	9	1	3
23	Children's Hospital of Michigan, Detroit	38.0	1.9	18	7	12	15	10	2.8	1	6	9	4	5	8	6	7	3	10	10	0	3
24	Lucile Packard Children's Hospital at Stanford, Palo Alto, Calif.	37.8	2.9	16	13	13	15	6	3.8	0	5	9	4	5	7	6	7	3	10	9	1	3
25	Children's Hospital of Alabama at UAB, Birmingham	36.8	1.8	12	8	15	14	10	2.7	1	6	9	4	6	8	6	7	3	9	10	0	3
26	Mayo Eugenio Litta Children's Hospital, Rochester, Minn.	36.6	2.8	16	14	16	10	5	3.7	1	6	9	4	6	8	6	7	3	10	9	0	2
27	Miami Children's Hospital	34.4	0.4	14	12	14	19	11	2.9	1	5	9	2	6	8	6	7	3	5	11	1	1
28	UCSF Benioff Children's Hospital, San Francisco	33.4	4.4	14	11	10	12	3	3.9	0	4	9	3	5	8	6	7	3	0	10	1	3
29	Nemours-Alfred I. duPont Hospital for Children, Wilmington, Del.	33.0	1.4	15	13	13	16	6	2.8	0	5	9	3	3	8	6	7	2	10	10	1	3
30	Children's Hospital of Wisconsin, Milwaukee	32.5	2.7	12	10	10	13	5	2.3	1	5	9	3	5	8	6	6	1	10	10	1	3
31	Children's Hospital Colorado, Denver	32.3	0.7	13	9	13	14	7	2.4	1	6	9	4	6	8	6	7	3	10	10	0	2
32	Doernbecher Children's Hospital at OHSU, Portland, Ore.	30.8	1.2	21	12	5	13	8	2.2	0	6	9	4	2	8	6	6	3	10	10	0	3
33	Connecticut Children's Medical Center, Hartford	28.4	1.1	18	8	17	11	7	2.8	0	6	9	4	6	6	6	7	3	3	9	0	2
34	Phoenix Children's Hospital	28.0	0.9	20	10	10	15	4	2.1	0	6	9	3	3	8	5	7	3	10	11	0	1
35	University of Iowa Children's Hospital, Iowa City	27.7	0.7	18	11	9	10	4	2.8	1	6	9	4	6	8	6	6	3	10	10	0	0
36	University of California Davis Children's Hospital, Sacramento	27.6	0.9	14	8	6	12	7	3.1	0	6	9	4	6	8	6	6	3	7	10	0	2
37	University of Chicago Comer Children's Hospital	27.0	0.0	21	6	8	14	7	2.3	1	6	9	4	6	8	6	5	3	10	8	0	2
38	Duke Children's Hospital and Health Center, Durham, N.C.	26.8	0.4	20	13	9	12	7	2.3	1	6	9	4	3	8	6	5	1	10	10	0	2
39	Mattel Children's Hospital UCLA, Los Angeles	26.6	3.6	20	10	8	10	6	2.6	1	5	9	4	5	8	6	2	3	5	8	0	1
40	Wolfson Children's Hospital, Jacksonville, Fla.	26.1	1.2	17	8	10	11	10	3.2	1	5	9	3	4	8	6	7	3	7	9	0	0
41	University of Minnesota Amplatz Children's Hospital	26.0	1.0	0	10	8	9	7	2.6	1	5	9	4	6	8	6	7	3	10	10	0	3
42	Holtz Children's Hospital at UM-Jackson Memorial Hospital, Miami	25.8	0.0	15	5	9	15	6	1.6	0	5	9	3	5	8	6	5	3	10	11	1	1
42	Yale-New Haven Children's Hospital, New Haven, Conn.	25.8	0.6	17	8	10	13	5	2.4	0	6	9	4	5	8	6	4	2	10	10	0	2
44	Penn State Hershey Children's Hospital, Hershey, Pa.	24.4	0.0	18	6	7	8	4	2.9	1	6	9	3	5	8	6	7	3	10	10	0	1
45	Children's Hospital Cleveland Clinic	24.1	1.5	21	13	7	13	8	3.1	1	5	9	4	3	8	6	2	3	10	8	0	0
46	Rainbow Babies and Children's Hospital, Cleveland	24.0	0.9	11	11	6	13	6	2.5	1	6	9	3	4	8	6	7	3	7	9	0	1
47	American Family Children's Hospital, Madison, Wis.	23.8	0.0	18	11	7	10	5	2.6	1	6	9	4	3	8	6	6	1	10	10	0	2
48	Children's Hospital of Orange County, Calif.	23.1	0.0	19	15	6	14	5	2.3	1	5	9	4	5	8	6	7	1	10	9	0	0
49	Kosair Children's Hospital, Louisville, Ky.	22.2	0.0	20	13	5	13	5	2.7	1	5	9	4	3	8	6	7	1	9	10	0	0
50	Children's Hospital at Montefiore, New York	21.3	0.3	14	17	3	6	5	2.8	0	6	9	4	0	8	6	6	1	10	11	1	1

+2 SD

+1 SD

Rankings are based on all of the above measures. NA: not applicable. NR: not reported.

**Appendix D**

**2011-12 Pediatric Honor Roll**

**Pediatric Honor Roll 2011-12**

<b>Rank</b>	<b>Hospital</b>	<b>Points</b>	<b>Specialties</b>
1	Children's Hospital Boston	20	10
1	Children's Hospital of Philadelphia	20	10
3	Cincinnati Children's Hospital Medical Center	16	10
4	Texas Children's Hospital, Houston	13	9
5	Johns Hopkins Children's Center, Baltimore	7	6
5	Children's Hospital Colorado, Denver	7	6
7	Seattle Children's Hospital	6	5
8	New York-Presbyterian Morgan Stanley-Komansky Children's Hospital	4	4
8	Children's Hospital of Pittsburgh of UPMC	4	4
8	St. Louis Children's Hospital-Washington University	4	4
8	Children's Hospital Los Angeles	4	4