



*turning knowledge into practice*

**Methodology**  
***U.S. News & World Report***  
**Best Children's Hospitals 2012-13**

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## Executive Summary

*U.S. News & World Report* published the first Best Hospitals rankings in 1990 to identify the best medical centers for the most difficult patients—those whose illness poses unusual challenges because of the underlying condition, the procedure required, or other medical issues that add risk. More than one of these factors may be in play for particular patients. The rankings have been published annually since their initial appearance. The focus on the most difficult patients has not changed.

Pediatric patients present special challenges because children are smaller (which complicates every facet of care from intubation to drug dosages), they are more vulnerable to infection, they depend on adults to manage and administer their medications, and they are born with congenital diseases such as spina bifida and cystic fibrosis.

Recognizing the unique care needed for pediatric patients, *U.S. News* launched Best Children’s Hospitals rankings in 2008. The rankings are based on an extensive analysis using a methodology that combines clinical and operational data collected directly from a survey of children’s hospitals with results from a survey of board-certified pediatric specialists, supplemented by information from additional resources such as the National Cancer Institute. The initial rankings listed the top 30 hospitals in six specialties. They have expanded to rank the top 50 children’s centers in 10 specialties: Cancer, Cardiology & Heart Surgery, Diabetes & Endocrinology, Gastroenterology, Neonatology, Nephrology, Neurology & Neurosurgery, Orthopedics, Pulmonology, and Urology.

Most of the 178 facilities surveyed for the 2012–13 Best Children’s Hospitals rankings are either a freestanding children’s hospital or a “hospital within a hospital” (a large, essentially autonomous multidisciplinary pediatric department within a major medical center). Almost all are members of the Children’s Hospital Association (CHA).\*

RTI International,<sup>†</sup> which developed the methodology for *U.S. News*, collects and analyzes the data for the “Best Children’s Hospitals” rankings. The methodology reflects the level and quality of *hospital resources* directly related to patient care, such as staffing, technology, and special services; *delivery of healthcare*, such as reputation among pediatric specialists, programs that prevent infections, and adherence to best practices; and *clinical outcomes*, such as patient survival, infection rates, and complications.

In the 2012–13 rankings, 80 different hospitals were ranked in at least one specialty. The Honor Roll recognizes 12 hospitals with high scores in at least three specialties.

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\* The Children’s Hospital Association (CHA) was formerly known as the National Association for Children’s Hospitals and Related Institutes (NACHRI). For more information, please visit: <http://www.childrenshospitals.net>.

† RTI International is the trade name of Research Triangle Institute.

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## I. Introduction

*U.S. News* ranked hospitals in pediatrics when the annual “Best Hospitals” rankings were first launched in 1990. Until 2007, however, the pediatric rankings were based solely on reputational surveys 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., Medicare Provider Analysis and Review [MedPAR]) are used to determine mortality in 12 adult specialties. No such large pediatric mortality database was—or now 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 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, general pediatrics was dropped, and the number of specialties was further expanded to the 10 listed below:

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

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

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

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 described in more detail below:

- *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 healthcare delivery encompasses overall rendering of diagnosis, treatment, prevention, and patient education. In both the pediatric and adult rankings, process is represented primarily by a reputational score based on the annual survey of board-certified physicians cited above. Starting with the 2012–13 rankings, compliance with best practices and activities to prevent infections, and other patient safety issues were added.
- *Outcomes* most obviously include survival 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 components. **Section IV** describes the data and the construction of each component.

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 2012–13 Pediatric Hospital Survey submission form. The

universe of hospitals asked to submit data was based on standing in the Children’s Hospital Association (CHA).\*\* Hospitals 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-CHA 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 2011.

Of 178 hospitals that qualified for inclusion, 98 submitted data.

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

Two additional eligibility requirements had to be met. 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 2012 survey was sent to hospitals to offer guidance and suggest improvements to the prior version. Panel members were recruited in cooperation with the Children’s Hospital Association, 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. Ultimately, the panels 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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\*\* More information about CHA 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, Pediatric cardiac intensivist (from training backgrounds in cardiology, pediatric intensive care, or anesthesiology, 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

FTE = full-time equivalent.

Through conference calls, ad hoc phone discussions, and e-mails during the summer and fall of 2011, panel members proposed, reviewed, and discussed revisions to the previous survey, including prospective new measures.

The RTI project team created a draft set of measures and a survey instrument. A smaller group of advisors reviewed both the broad content and specific information, such as individual ICD-9-CM (*International Classification of Diseases, Ninth Revision, Clinical Modification*) codes that identify diagnoses and treatments.<sup>6</sup> 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 2011 survey. The data submission form was administered to hospitals from January to March 2012 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, process 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 component 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 derive 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.

### **A. Structural Measures**

The structural measures included in the rankings were selected because they represent fundamental elements of high-quality, hospital-based pediatric care. Descriptions of the measures and the specialties to which they are applied are listed alphabetically. The relative weight of each measure within a specialty is provided in *Section IV.B. Normalization and Weighting*.

#### **Accredited Transplant Program (Cancer)**

Accreditation indicates that as of March 1, 2012, a hospital met standards set by 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. Currently accredited facilities are listed at <http://www.factwebsite.org>.

#### **Adult Congenital Heart Program (Cardiology & Heart Surgery)**

In Cardiology & Heart Surgery, hospitals received up to 10 points for having an adult congenital heart program. Hospitals received 1 point for providing an organized adult congenital heart program. 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 performing from 1 to 49 cardiac surgical procedures on patients age 18 and above in the last 2 calendar years and received 2 points for performing 50 or more procedures.

### **Advanced Clinical Services (All Specialties)**

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 ensures that a range of resources is 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 (18 services)</b>	
<b>Service</b>	<b>Description</b>
Cancer care coordination	Primary 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; 2 points for orders written using a protocol-driven template or as part of a computerized physician order entry program
Chemotherapy support services	Offers the following: <ul style="list-style-type: none"> <li>• chemotherapy-certified pediatric oncology</li> <li>• dedicated pediatric chemotherapy pharmacy</li> <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 annual training in chemotherapy order writing</li> <li>• formal chemotherapy safety program with standardized procedures and event tracking</li> <li>• designated pediatric oncology faculty leader for the chemotherapy safety program</li> <li>• reporting system capturing chemotherapy order misses/near misses</li> </ul>

(continued)

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

<b>Cancer (18 services) (continued)</b>	
<b>Service</b>	<b>Description</b>
Pediatric trauma center	Level 1 or 2 pediatric trauma center certified by American College of Surgeons or state licensing board
Support staff	Offers the following: <ul style="list-style-type: none"> <li>• consultation program with experts in complementary/holistic health</li> <li>• pediatric child-life specialists</li> <li>• school programs for hospitalized patients</li> <li>• psychosocial support program</li> <li>• social work support</li> <li>• neuropsychological evaluation focused on school re-entry issues</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
ECMO	ECMO program designated as a Center of Excellence by the Extracorporeal Life Support Organization (ELSO)
Echocardiography laboratory	Offers 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>
Cardiovascular services	Offers these diagnostic and treatment services: <ul style="list-style-type: none"> <li>• inpatient cardiology consultation</li> <li>• dedicated cardiac surgical operating room</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>• 24/7 ECMO</li> <li>• cardiovascular genetics clinic</li> </ul>
Heart failure program	Provides heart failure program with a designated medical director and nursing coordinator
Circulatory support	Offers ventricular assist devices (other than ECMO) for patients under 10

(continued)

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

<b>Diabetes &amp; Endocrinology (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
Diabetes support staff	Has following personnel available for consultation: <ul style="list-style-type: none"> <li>• With certified diabetes educators (CDE) certification <ul style="list-style-type: none"> <li>○ social workers</li> <li>○ dieticians</li> <li>○ diabetes educators</li> </ul> </li> <li>• Other staff <ul style="list-style-type: none"> <li>○ genetic counselors</li> <li>○ exercise physiologists</li> <li>○ psychologists</li> </ul> </li> </ul>
Remote access to records	1 point for providing physicians with remote access (e.g., electronic health records) to patient records; 2 points for providing remote access for both inpatients and outpatients
Diabetes patient services	Offers 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>• 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 a registered nurse or CDE in hospital's pediatric diabetes program</li> </ul>
Support services	Offers following programs or services: <ul style="list-style-type: none"> <li>• encouraging or supporting diabetes-specific support group for parents and families</li> <li>• taking a leadership role in organizing or supporting family-support groups for special populations (e.g., Turner syndrome)</li> </ul>
Off-site clinics	Offer off-site locations with regularly scheduled clinics for endocrinology and diabetes patients

(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	Has 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	Provides 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	Provides educational material on GI-specific conditions to patients

<b>Neonatology (5 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	Offers 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-dedicated reparatory therapy team 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	Has 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	Provides 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	Has 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 (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
Neurology & neurosurgery support services and technology	Offers following: <ul style="list-style-type: none"> <li>• ketogenic diet evaluation and management program</li> <li>• neuroradiology interventionalists</li> <li>• neuroanesthesia program</li> <li>• a sleep laboratory accredited by the American Academy of Sleep Medicine</li> <li>• a neurocritical care program</li> <li>• coordinated discharge plan for former critical care patients</li> <li>• neurological rehabilitation program (<i>1 additional point if certified by the Commission on Accreditation of Rehabilitation Facilities</i>)</li> <li>• psychologists who specialize in neuropsychological testing</li> </ul>
Epilepsy treatment	Offers following: <ul style="list-style-type: none"> <li>• specialized epilepsy treatment center</li> <li>• neurosurgery treatment for epilepsy</li> <li>• Electroencephalography (EEG) lab accredited by the EEG technologists, evoked potential technologists</li> <li>• Epilepsy monitoring unit with emergency management of seizures protocols</li> </ul>
Headache clinic	Dedicated headache clinic that offers 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>

<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 laboratory)</li> </ul>

(continued)

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

<b>Pulmonology (11 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
Asthma care specialists	At least 1 full-time equivalent (FTE) staff with clinical responsibilities: <ul style="list-style-type: none"> <li>• respiratory therapists</li> <li>• certified asthma educators</li> </ul>
Dedicated staff	Following staff who attend clinic or participate in patient care conferences: <ul style="list-style-type: none"> <li>• gastroenterologist</li> <li>• endocrinologist</li> </ul> Following staff who support the muscular dystrophy treatment program: <ul style="list-style-type: none"> <li>• pulmonologist</li> <li>• physiatrist</li> <li>• orthopedist</li> </ul>
Support services	Offers following: <ul style="list-style-type: none"> <li>• cystic fibrosis (CF) center accredited by Cystic Fibrosis Foundation</li> <li>• sleep center accredited by American Academy of Sleep Medicine (AASM)</li> <li>• sleep laboratory accredited by AASM</li> </ul>

<b>Urology (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
Treatment options	Offers following: <ul style="list-style-type: none"> <li>• shock wave lithotripsy</li> <li>• ureteroscopy</li> <li>• percutaneously nephrolithotripsy/nephrolithotomy</li> <li>• laparoscopic varicocelectomy</li> <li>• laparoscopic orchiopexy</li> <li>• laparoscopic pyeloplasty, nephrectomy, and partial nephrectomy performed without a surgical robot</li> <li>• ligation of varicocele, performed laparoscopically or using surgical robot</li> </ul>

**Advanced Technology (All Specialties)**

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*.

## **Asthma Management (Pulmonology)**

In Pulmonology, hospitals received up to 15 points for management of asthma patients, based on the percentage of patients following specific protocols. Hospitals received 3 points each for documenting assessment of asthma control in two patient populations: outpatients in subspecialty care clinics and outpatients in primary care clinics. Hospitals received additional points based on the percentage of patients following specific protocols. The protocols evaluated were the following: (1) providing inpatients with documentation of a personalized asthma management plan, (2) providing outpatients in subspecialty care clinics with documentation of a personalized asthma management plan, and (3) ensuring outpatients in primary care clinics have documentation of a personalized asthma management plan. 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  $\geq 90\%$ .

## **Bone Marrow Transplant Services (Cancer)**

In Cancer, hospitals could receive up to 16 points for having a stem cell transplant program. Stem cell transplants are 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 listed above, hospitals received points as follows: 1 point for conducting from 2 to 10 transplants in the past 3 years; 2 points for conducting 11 or more transplants in the last 3 years.
- Hospitals received up to 3 points for recognition as an accredited allogeneic stem cell transplant facility by the Foundation for the Accreditation of Cellular Therapy (FACT), a transplant center by the National Marrow Donor Program, and for membership in the Pediatric Blood and Marrow Transplant Consortium.

**Table 3. Advanced Technologies, by Specialty**

Specialty	Technologies
<p><b>Cancer (14 technologies)</b></p>	<ul style="list-style-type: none"> <li>• Positron emission tomography (PET) or positron emission tomography and computerized tomography (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>• Linear accelerator (LINAC) or other linear particle accelerator, Gamma Knife, CyberKnife, 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>• Stereotactic radiosurgery</li> <li>• Dedicated pediatric anesthesiology for radiation therapy</li> <li>• Pediatric interventional radiology equipment and room</li> </ul>
<p><b>Cardiology &amp; Heart Surgery (5)</b></p>	<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 available 24/7</li> <li>• Transesophageal echocardiographic testing during surgeries</li> </ul>
<p><b>Diabetes &amp; Endocrinology (10)</b></p>	<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>• Continuous glucose monitoring</li> <li>• Radiation isolation room</li> <li>• Endocrine testing and infusion studies</li> </ul>

(continued)

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

Specialty	Technologies
<b>Gastroenterology (10)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Magnetic resonance cholangiopancreatography</li> <li>• Magnetic resonance enterography</li> <li>• DXA 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> <li>• Esophageal dilation, either bougie or pneumatic</li> </ul>
<b>Neonatology (5)</b>	<ul style="list-style-type: none"> <li>• PET or PET/CT scanning</li> <li>• Continuous Electroencephalography (EEG) monitoring with pediatric neurology support</li> <li>• Unsedated 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 (7)</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> <li>• EEG source localization</li> <li>• Functional MRI</li> <li>• Availability of 24/7 EEG monitoring in pediatric intensive care unit (PICU)/neonatal intensive care unit (NICU)</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 (All Specialties)**

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 2012. Definitions can be found in the glossary in **Appendix A**.

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

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

### Committing to Clinical Research (All Specialties)

Networks, clinical trials, and other research activities advance the ability of the field to treat pediatric patients and also enhance care by making new or novel treatments available at centers that participate in such research.

***Cancer (12 points).*** Hospitals received up to 12 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 2 points for participating in investigator-initiated Phase 1 and Phase 2 clinical trials (translational research). Hospitals received up to 5 additional points for engaging in clinical trials in these specific areas: leukemia, brain tumors, sarcomas, neuroblastomas, or trials for biologically targeted novel agents that are not disease specific (e.g., tyrosine kinase inhibitors). Hospitals could receive an additional 1 point, depending on the depth of their involvement in any of the clinical trials.

***Cardiology & Heart Surgery (10 points).*** Hospitals received points for participating in externally audited, national quality-improvement research networks. Hospitals received 1 point for being a primary or auxiliary clinical center for the Pediatric Heart Research Network (PHRN), and tracking at least one protocol. Hospitals received up to an additional 9 points for participating and contributing data to the following organizations:

- Society of Thoracic Surgeons
- Congenital Heart Surgeons’ Society
- National Pediatric Cardiology Quality Improvement Collaborative
- Congenital Cardiovascular Interventional Study Consortium
- National Cardiovascular Disease Registry—Improving pediatric and adult congenital treatment
- Virtual Pediatric ICU system
- Congenital Cardiac Anesthesia Society
- National Cardiovascular Disease Registry—Implantable Cardioverter Defibrillator
- Other externally audited national quality-improvement initiatives

***Diabetes & Endocrinology (1 point).*** Hospitals received 1 point for participating in specialty-specific clinical research activities such as clinical trials or other translational research activities.

***Gastroenterology (4 points).*** Hospitals received up to 4 points for participating in externally audited, national quality-improvement research networks. Hospitals received 1 point each for participating in prospective research activities: randomized clinical trials, observational studies, or

clinical databases on patient care. Hospitals also received 1 point for having at least one Institutional Review Board–approved study being led by the Pediatric Gastroenterology program.

***Neonatology (4 points).*** 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 for participating in clinical research activities such as clinical trials or other translational research activities. Hospitals received up to 3 additional points for participation in the following organizations:

- The Vermont Oxford Network, Children’s Hospitals Neonatal Consortium, or Child Health Corporation of America database
- Extracorporeal Life Support Organization (ELSO) data exchange network/registry
- Other clinical research or data exchange program

***Nephrology (10 points).*** Hospitals received points for participation in externally audited, national quality-improvement research networks. Hospitals received 1 point for participating in specialty-specific clinical research activities such as clinical trials or other translational research activities. Hospitals received up to 9 additional points for participation in the following research collaboratives:

- Clinical Trials in Organ Transplantation in Children
- Midwest Pediatric Nephrology Consortium
- International Pediatric Dialysis Network
- North American Pediatric Renal Trials and Collaborative Studies
- Pediatric Continuous Renal Replacement Therapy consortium
- Pediatric Trials Network
- Chronic Kidney Disease in Children cohort study
- Nephrotic Syndrome Study Network
- National Children’s Association Collaborative

***Neurology & Neurosurgery (4 points).*** Hospitals received 1 point for belonging to a neuro-oncology clinical research consortium and up to 3 additional points for participating in the following prospective research activities: randomized clinical trials, observational studies, or clinical databases on patient care.

***Orthopedics (1 point).*** Hospitals received 1 point for participating in specialty-specific clinical research activities such as clinical trials or other translational research activities.

***Pulmonology (1 point).*** Hospitals received 1 point for participating in specialty-specific clinical research activities such as clinical trials or other translational research activities.

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

## **Committing to Quality Improvement (All Specialties)**

Hospitals received 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. In all specialties, hospitals received up to 3 points for participating in an external review process for measuring patient/parent satisfaction, for publicly reporting performance data on one or more quality metrics, and for having quality improvement projects approved by the American Board of Pediatrics.

In all specialties except for Gastroenterology and Neonatology, hospitals received up to 6 additional points for implementing specialty-specific quality measures. These include 1 point each for implementing a formal program review plan, determining appropriate performance-based metrics, regularly tracking patient data, and regularly presenting results of clinical quality performance metrics to clinical staff and 2 points for participating in one or more national quality initiatives.

In Gastroenterology, hospitals received up to 5 additional points for participating in the following formal quality initiatives: studies in pediatric liver transplantation, pediatric acute liver failure, cystic fibrosis liver disease, Improve Care Now, or other formal multicenter quality initiatives.

In Neonatology, hospitals received up to 7 additional points for implementing specialty-specific quality measures. These include 1 point each for implementing a formal program review plan, determining appropriate performance-based metrics, regularly tracking patient data, regularly presenting results of clinical quality performance metrics to clinical staff, and participating in one or more national quality initiatives. Hospitals could receive an additional 2 points if the quality initiatives included having a specified quality-improvement or safety leader. Hospitals received 1 point for safety leader with .26 to .49 full-time equivalent (FTE) of his or her time devoted to

quality improvement or safety, and 2 points for at least .50 FTE of time devoted to quality improvement or safety.

## **Congenital Heart Program (Cardiology & Heart Surgery)**

In Cardiology & Heart Surgery, hospitals received up to 18 points for having a congenital heart program. 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 could receive up to 6 points based on the mechanism for determining and reporting volume and outcomes measures. For each of the past three reporting years, 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).
- 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 1 point for treating at least one patient with a Berlin Heart or other ventricular assist device.
- Hospitals received up to 3 points for having performed one or more hybrid procedures in each of the last three reporting periods.
- Hospitals received up to 6 points based on the number of cardiac surgical procedures performed in the operating room in the three reporting years: 1 point for 100–249 surgeries/year and 2 points for 250 or more surgeries/year.

## **Diabetes Options (Diabetes & Endocrinology)**

In Diabetes & Endocrinology, 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.

## **Dialysis Patients Receiving Transplants (Nephrology)**

Hospitals received up to 12 points in Nephrology based on the percentage of patients receiving maintenance dialysis who received kidney transplants within the past 2 years. In the Nephrology specialty, four groups of patients were evaluated separately: 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. For each type of patient, 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  $< 75\%$ , and 3 points if  $\geq 75\%$ .

## **ECMO (Heart-Lung Machine) (Neonatology)**

Extracorporeal membrane oxygenation (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. In Neonatology, hospitals received up to 4 points for ECMO services. 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 the Extracorporeal Life Support Organization (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.

## **Engaging Parents and Family (All Specialties)**

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 that meets one or two times a year and 2 points for having a committee that meets at least four or more times a year. Hospitals received up to 4 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); parents or family members are regularly involved in clinical decisionmaking in ways such as family-centered rounds, care conferences, or other participatory programs; and parents or family members can participate in family-centered rounds.

In Neonatology, hospitals could receive 1 additional point (for a total of 7 points) for having an NICU-specific parent advisory committee that meets at least once a year.

## Fellowship Programs (All Specialties)

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.

**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 nephrology					●	●				
Pediatric orthopedics					●			●		
Endovascular surgical neuroradiology (with focus in pediatrics)	●				●					
Pediatric pulmonology					●				●	
Pediatric urology					●					●
Thoracic surgery (with focus on pediatric cardiothoracic surgery)		●			●					
Pediatric infectious diseases					●					
<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>

## **Heart Transplant Program (Cardiology & Heart Surgery)**

In Cardiology & Heart Surgery, hospitals received up to 4 points for having a heart transplant program. Hospitals received 1 point for having an on-site heart or heart-lung transplant program recognized by the United Network for Organ Sharing (UNOS). Hospitals received up to 3 additional points based on the number of unique patients who received heart transplants in the past 3 years: 1 point for 1–5 transplants, 2 points for 6–11 transplants, and 3 points for 12 or more transplants.

## **Liver Transplant Program (Gastroenterology)**

In Gastroenterology, hospitals received up to 4 points for having a liver transplant program. 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, and 3 points for 20 or more patients.

## **Lung Disease of Prematurity Management (Pulmonology)**

In Pulmonology, hospitals received up to 7 points based on the percentage of patients diagnosed with lung disease or prematurity who received respiratory syncytial virus (RSV) prophylaxis and the percentage of patients who were given all of their recommend injections for the most recent RSV prophylaxis 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  $< 90\%$ , and 3 points for  $> 90\%$ . Hospitals received an additional 1 point for having a protocol for advising families of infants with lung disease of prematurity regarding RSV prophylaxis.

## **Lung Transplant Program (Pulmonology)**

In Pulmonology, hospitals received up to 6 points for having a lung transplant program. Hospitals received 1 point for offering a UNOS-recognized lung transplant program. Hospitals received 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 Scientific Registry of Transplant Recipients (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  $< 90\%$ , and 3 points for a survival rate  $> 90\%$ .

## **Neuromuscular Weakness Disorder Management (Pulmonology)**

In Pulmonology, hospitals received up to 6 points for muscular dystrophy management. This measure is composed of two items: the percentage of muscular dystrophy patients aged 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  $< 90\%$ , and 3 points for  $> 90\%$ .

## **Nurse Magnet Hospital (All Specialties)**

“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, 2012, 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 (All Specialties)**

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.

## **Palliative Care (Cancer)**

In Cancer, 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 decisionmaking. 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  $< 75\%$ , and 2 points for  $\geq 75\%$ .

## **Patient and Family Services (All Specialties)**

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 Neonatology, hospitals could receive up to 9 additional points (for a total of 17 points). Hospitals received up to 7 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 advisory committee that meets regularly, and NICU-specific parent-to-parent support groups. Hospitals received 1 point if  $< 25\%$  of their NICU beds were within single-bed rooms and 2 points if  $\geq 25\%$  of the NICU beds were in single-bed rooms.

In Nephrology, hospitals could receive up to 4 additional points (for a total of 12 points). Hospitals received 1 point for offering summer camp for kidney transplant patients. Hospitals received up to an additional 3 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 performance and patient's Individualized Education Program, and/or summer camp.

## **Specialized Clinics and Programs (Cancer, Cardiology & Heart Surgery, Diabetes & Endocrinology, Gastroenterology, Neonatology, Neurology & Neurosurgery, Orthopedics, Urology)**

**Cancer (9 points).** Hospitals received up to 9 points for specialized treatment programs for cancer patients, with 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, fertility preservation program, cancer genetics/hereditary program, bone marrow failure program, or histiocytosis program.

**Cardiology & Heart Surgery (11 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 (e.g. Melody); transcatheter arrhythmia ablations; ablations for atrial tachycardia, supraventricular tachycardia, and ventricular tachycardia; aortic and pulmonary catheter-based valvuloplasty; and implantation of permanent transvenous pacing/cardioversion/defibrillation or event recording devices in the catheterization lab.

***Diabetes & Endocrinology (8 points).*** Hospitals received up to 6 points for specialized treatment programs for endocrine patients with 1 point for each of the following: lipid disorders, hypertension, comprehensive weight management, Turner syndrome, Cystic fibrosis–related diabetes clinic, and multidisciplinary endocrinology/oncology brain tumor clinic. Hospitals received up to 2 points for specialized clinics for diabetes patients, with 1 point for each of the following: outpatients with type 2 diabetes, and adolescents and young adults with diabetes.

***Gastroenterology (9 points).*** Hospitals received up to 9 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, chronic liver disease program, and neurogastrointestinal/motility program.

***Neonatology (12 points).*** Hospitals received 1 point for having a cardiac ICU to care for patients needing specialized care for heart conditions with up to 11 additional 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, neonatal-neurointensive care program, NICU specific palliative care program, micrognathia team, metabolic team, bowel rehabilitation team, home ventilator management team, neurodevelopmental follow-up clinic for premature/high-risk NICU patients, and neurodevelopmental clinic for high-risk congenital heart NICU patients.

***Neurology & Neurosurgery (15 points).*** Hospitals received up to 15 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: cerebral palsy/spasticity clinic, cerebrovascular accident, craniofacial surgical, movement disorders, neurofibromatosis, neuromuscular, neuro-oncology, spina bifida, tuberous sclerosis, brachial plexus, metabolic/white matter, neonatal neurology, multidisciplinary spine, head trauma/post-concussion, and new-onset seizures.

**Orthopedics (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 attended regularly 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, muscle disease, pain, and sports medicine.

**Urology (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.

### Subspecialist Availability (All Specialties)

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 6** 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 6. Subspecialists, by Specialty**

<b>Cancer (14 points)</b>	
Physician specialists	At least one 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 one of the following staff: <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	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Hematologists/Oncologists</li> <li>• Other attending on-staff physicians with specific involvement in pediatric cancer program</li> <li>• Nurse Practitioners and Physician Assistants</li> </ul>

(continued)

**Table 6. Subspecialists, by Specialty (continued)**

<b>Cardiology &amp; Heart Surgery (14 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 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Cardiothoracic Surgeon</li> </ul>
Other medical staff	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Cardiac Intensivist (from a cardiology training background)</li> <li>• Pediatric Cardiac Intensivists (from a pediatric intensivist training background)</li> <li>• Pediatric Cardiac Intensivists (from an anesthesiology training background)</li> <li>• Pediatric Cardiac Interventionalist</li> <li>• Pediatric Cardiac Electrophysiologist</li> <li>• Nurse Practitioners and/or Physician Assistants</li> <li>• Cardiology Fellows</li> <li>• Cardiac Surgery Fellows</li> </ul>
<b>Diabetes &amp; Endocrinology (11 points)</b>	
Physician specialists	At least one 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 Rheumatologist</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	At least one of the following staff: <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	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Endocrinologist</li> <li>• Nurse Practitioners and/or Physician Assistants</li> </ul>
<b>Gastroenterology (8 points)</b>	
Physician specialists	At least one 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>

(continued)

**Table 6. Subspecialists, by Specialty (continued)**

<b>Gastroenterology (8 points) (continued)</b>	
Pediatric surgeons	At least one 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 Gastroenterologist</li> <li>• Nurse Practitioners and/or Physician Assistants</li> </ul>
<b>Neonatology (15 points)</b>	
Physician specialists	At least one 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 one of the following staff: <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 Orthopedic 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 Neonatologist</li> <li>• Critical Care Certified Registered Nurse</li> <li>• Nurse Practitioners and/or Physician Assistants</li> </ul>
<b>Nephrology (8 points)</b>	
Physician specialists	At least one 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 one 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 Nephrologist</li> <li>• Nurse Practitioners and/or Physician Assistants</li> </ul>

(continued)

**Table 6. Subspecialists, by Specialty (continued)**

<b>Neurology &amp; Neurosurgery (12 points)</b>	
Physician specialists	At least one 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 one of the following staff: <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> <li>• Pediatric Neurosurgeon</li> </ul>
Other medical staff	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Neurologist</li> <li>• Pediatric Neurosurgeon</li> <li>• Nurse Practitioners and/or Physician Assistants</li> <li>• Certified Neuroscience Nurse</li> <li>• Other Registered Nurse</li> </ul>
<b>Orthopedics (16 points)</b>	
Physician specialists	At least one 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 Rheumatologist</li> <li>• Pediatric Infectious Disease Specialist</li> </ul>
Pediatric surgeons	At least one of the following staff: <ul style="list-style-type: none"> <li>• Pediatric General Surgeon</li> <li>• Pediatric Orthopedic 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	At least 1.0 FTE of the following staff: <ul style="list-style-type: none"> <li>• Pediatric Orthopedic Surgeon</li> <li>• General Orthopedist</li> <li>• Nurse Practitioners and/or Physician Assistants</li> <li>• Clinical Registered Nurses</li> </ul>

(continued)

**Table 6. Subspecialists, by Specialty (continued)**

<b>Pulmonology (10 points)</b>	
Physician specialists	At least one 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 one 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>• Nurse Practitioners and/or Physician Assistants</li> <li>• Clinical Registered Nurse</li> </ul>
<b>Urology (12 points)</b>	
Physician specialists	At least one 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 one 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 (worth 2 points)</li> <li>• Urologist</li> <li>• Nurse Practitioners and/or Physician Assistants</li> <li>• Clinical Registered Nurse</li> </ul>

### **Volume of Patients (All Specialties)**

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 7* identifies the volume measures used by specialty and the points assigned to volume scores within a certain range.

**Table 7. 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)			
• 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+
<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 = 30)			
• Balloon angioplasty procedures	1-29	30-59	60+
• Balloon valvuloplasty procedures	1-19	20-39	40+
• Stent implantation procedures	1-34	35-69	70+
• Transcatheter occlusion of cardiac shunt procedures	1-59	60-119	120+
• Transcatheter placement of stented pulmonary valve	1-14	15-29	30+
• 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	7-13	14+
• Placement of permanent transvenous pacing	1-19	20-39	40+
<b><i>Norwood surgery volume</i></b> (max points = 9)			
• Patients receiving Norwood Stage 1, year 1	1-6	7-13	14+
• Patients receiving Norwood Stage 1, year 2	1-6	7-13	14+
• Patients receiving Norwood Stage 1, year 3	1-6	7-13	14+

(continued)

**Table 7. 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 = 27)			
• Risk-adjusted classification for congenital heart surgery (RACHS-1 <sup>a,b</sup> ), Level 3: Year 1	1-69	70-139	140+
• RACHS-1, Level 3: Year 2	1-69	70-139	140+
• RACHS-1, Level 3: Year 3	1-69	70-139	140+
• RACHS-1 Level 4: Year 1	1-19	20-39	40+
• RACHS-1 Level 4: Year 2	1-19	20-39	40+
• RACHS-1 Level 4: Year 3	1-19	20-39	40+
• RACHS-1 Levels 5 & 6: Year 1	1-9	10-19	20+
• RACHS-1 Levels 5 & 6: Year 2	1-9	10-19	20+
• RACHS-1 Levels 5 & 6: Year 3	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 = 36)			
• 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	1-99	100-199	200+
• Diabetes insipidus	1-24	25-49	50+
• Growth hormone deficiency	1-99	100-199	200+
• Newly diagnosed growth hormone deficiency	1-24	25-49	50+
• Turner Syndrome	1-24	25-49	50+
<b><i>Procedure volume*</i></b> (max points = 30)			
• 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+

(continued)

**Table 7. Specialty-Specific Volume Measures (continued)**

<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>
• Continuous glucose monitoring	1-39	40-79	80+
• Brain or pituitary MRI	1-29	30-59	60+
• Growth hormone therapy	1-29	30-59	60+
• Serum IGF-1 measurement	1-29	30-59	60+
<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 = 18)			
• 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+
• Esophageal dilation	1-49	50-99	100+
<b><i>Patient volume</i></b> (max points = 60)			
• Intestinal rehabilitation program	1-44	45-89	90+
• Cystic fibrosis treatment program	1-99	100-199	200+
• Total parenteral nutrition support program	1-299	300-599	600+
• Pediatric intensive feeding program	1-299	300-599	600+
• Multidisciplinary childhood obesity program	1-299	300-599	600+
• Inflammatory bowel program	1-299	300-599	600+
• Multidisciplinary allergic disease program	1-149	150-300	300+
• Chronic liver disease program	1-199	200-399	400+
• Neurogastrointestinal/motility program	1-99	100-199	200+
• Foreign body	1-49	50-99	100+
• Gastrointestinal bleeding	1-149	150-299	300+
• Pseudo-obstruction	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+
• Celiac disease	1-149	150-299	300+
• Crohn's disease	1-249	250-499	500+

(continued)

**Table 7. 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>
• Eosinophilic esophagitis	1-74	75-149	150+
<b><i>Surgical volume</i></b> (max points = 8)			
• Hepatoportoenterostomy or Kasai procedure	1-3	4+	—
• Bowel lengthening	1	2+	—
• Laparoscopic gastrointestinal surgeries	1-19	20+	—
• Bariatric surgery	1-3	4+	—
<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	1-5	6-11	12+
• 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+
• Repair of 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*, 2 years</i></b> (max points = 11)			
• Permanent hemodialysis vascular central venous catheters placed in children < 5 years of age)	1-2	3+	n/a
• Permanent hemodialysis vascular central venous catheters placed in children, 5-19 years of age	1-11	12+	n/a
• Hemodialysis arteriovenous (AV) fistula/graft access placements in children < 5 years of age	1+	n/a	n/a
• Hemodialysis AV fistula/graft access placements in children, 5-19 years of age	1-3	4+	n/a
• Peritoneal dialysis catheters placed in children < 5	1-4	5+	n/a
• Peritoneal dialysis catheters placed in children and adolescents, 5-19	1-4	5+	n/a
<b><i>Dialysis volume, 2 years</i></b> (max points = 18)			
• Hemodialysis with children < 5 years of age	1-2	3-5	6+

(continued)

**Table 7. 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>
• Hemodialysis with children 5–19 years of age	1–14	15–29	30+
• Peritoneal dialysis with children < 5 years of age	1–5	6–11	12+
• Peritoneal dialysis with children 5–19 years of age	1–14	15–29	30+
• Dialysis treatment volume in days (previous year)	1–249	250–500	500+
• Dialysis treatment volume in days (current year)	1–249	250–500	500+
<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	1–9	10–19	20+
<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+
<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+
• Henoch-Schönlein purpura	1–29	30–59	60+
• 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+
• Membranoproliferative glomerulonephritis	1–8	9–16	17+
• IgA nephropathy	1–20	21–40	41+
• Systemic lupus erythematosus with renal involvement	1–14	15–29	30+
• Membranous nephropathy	1–10	11–20	21+
<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 = 18)			
• Initial medical evaluations for epilepsy	1–599	600–1,199	1,200+
• Number of standard EEG evaluations	1–999	1,000–1,999	2,000+

(continued)

**Table 7. 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>
• Number of long-term video EEG (vEEG) evaluations	1-599	600-1,199	1,200+
• Evaluations for surgery related to epilepsy	1-79	80-159	160+
• Number of first-time surgical procedures for epilepsy	1-24	25-49	50+
• VNS procedures for epilepsy	1-24	25-49	50+
<b><i>Clinic volume</i></b> (max points = 45)			
• Cerebral palsy/spasticity clinic	1-249	250-499	500+
• Cerebrovascular accident (stroke) program	1-49	50-99	100+
• Craniofacial surgical program	1-249	250-499	500+
• Movement disorders program	1-199	200-399	400+
• Neurofibromatosis clinic	1-69	70-139	140+
• Neuromuscular clinic	1-199	200-399	400+
• Neuro-oncology program	1-99	100-199	200+
• Spina bifida program	1-149	150-299	300+
• Tuberous sclerosis clinic	1-39	40-79	80+
• Brachial plexus clinic	1-49	50-99	100+
• Metabolic/white matter clinic	1-79	80-159	160+
• Neonatal neurology clinic	1-149	150-299	300+
• Multidisciplinary spine program	1-199	200-399	400+
• Head trauma/post-concussion	1-199	200-399	400+
• New-onset seizures	1-299	300-599	600+
<b><i>Surgical volume</i></b> (max points = 33)			
• Brain tumors (benign/malignant)	1-34	35-69	70+
• 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+
• Endoscopic third ventriculostomy	1-24	25-49	50+
• Brachial plexus exploration/reconstruction	1-7	8-15	16+
• Spasticity	1-19	20-39	40+
• Vascular cases including endovascular procedures	1-24	25-49	50+

(continued)

**Table 7. 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>
<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	1–59	60–119	120+
• Neurofibromatosis clinic	1–59	60–119	120+
• Muscular dystrophy clinic	1–149	150–299	300+
• Pain clinic	1–149	150–299	300+
• Sports medicine clinic	1–1,499	1,500–2,999	3,000
• Scoliosis correction patients	1–74	75–149	150+
<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+
• 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+

(continued)

**Table 7. Specialty-Specific Volume Measures (continued)**

<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+
• Non-invasive positive pressure ventilation support	1-99	100-199	200+
• Infant pulmonary function testing	1-19	20-39	40+
• Bronchoscopy	1-249	250-499	500+
<b><i>Patient volume</i></b> (max points = 21)			
• Asthma inpatients	1-399	400-799	800+
• Asthma outpatients in subspecialty care clinics	1-1,499	1,500-2,999	3,000+
• Asthma outpatients in primary care clinics	1-1,499	1,500-2,999	3,000+
• CF patients	1-124	125-249	250+
• Lung disease prematurity	1-59	60-119	120+
• Muscular dystrophy	1-39	40-79	80+
• Ventilator dependent patients	1-29	30-59	60+
<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 = 21)			
• Shock wave lithotripsy	1-7	8-15	16+
• Uteroscopy	1-19	20-39	40+
• Percutaneously nephrolithotripsy	1-3	4-7	8+
• Laparoscopic orchiopexy	1-24	25-49	50+
• Robotic laparoscopic pediatric surgery	1-9	10-19	20+
• Laparoscopic pyeloplasty, nephrectomy, and partial nephrectomy	1-11	12-23	24+
• Ligation of varicocele performed laparoscopically or using surgical robot	1-11	12-23	24+
<b><i>Patient volume</i></b> (max points = 24)			
• Pediatric urology outpatient visits (2 years)	1-7,999	8,000-15,999	16,000+
• Pediatric urology surgical patients	1-999	1,000-1999	2,000+
• Spina bifida program	1-124	125-249	250+
• Voiding dysfunction program	1-599	600-1,199	1,200+
• Comprehensive stone program	1-99	100-199	200+
• Prenatal program	1-99	100-199	200+

(continued)

**Table 7. 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>
• Disorders of sexual differentiation program	1-49	50-99	100+
• Exstrophy/cloaca/GU sinus program	1-49	50-99	100+
<b><i>Surgical volume</i></b> (max points = 27)			
• Open pyeloplasty	1-19	20+	n/a
• Open nephrectomy	1-9	10+	n/a
• Open partial nephrectomy	1-2	3+	n/a
• Laparoscopic pyeloplasty without a robot	1-4	5+	n/a
• Laparoscopic pyeloplasty with a robot	1-9	10+	n/a
• Laparoscopic nephrectomy without a robot	1-4	5+	n/a
• Laparoscopic nephrectomy with a robot	1-2	3+	n/a
• Laparoscopic partial nephrectomy without a robot	1	2+	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	1-8	9+	n/a
• Proximal urethroplasty for hypospadias	1-39	40+	n/a
• Female reconstructive procedures	1-5	6+	n/a

n/a = not applicable.

\* Volume represents procedures, not patients.

<sup>a</sup> Jenkins KJ, Gauvreau K, Newburger JW, Spray TL, Moller JH, & Iezzoni LI. Consensus-based method for risk adjustment for surgery for congenital heart disease. *Journal of Thoracic Cardiovascular Surgery*. 2002; 123:110-118.

<sup>b</sup> Jenkins KJ. Risk adjustment for congenital heart surgery: The RACHS-1 method. *Seminar in Thoracic Cardiovascular Surgery Pediatric Cardiology Surgery Annual*. 2004; 7:180-184.

## **Use of Health Information Technology (All Specialties)**

In each specialty, hospitals received up to 10 points for incorporating and using a computerized physician order entry (CPOE) system and electronic medical records (EMRs). 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 using 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. Normalization

Starting with the 2012 rankings, all structural measures underwent normalization prior to weighting. Normalization is the process of transforming index values into a distribution between 0 and 1 based on the range of possible values for a given measure. The formula for normalization is provided in Equation (1):

$$\text{Equation (1)} \quad \text{Normalized Value} = (X_i - \text{Minimum}_i) / \text{Range}_i$$

where

$X_i$  = the value provided for a measure  $i$ ,

$\text{Minimum}_i$  = the minimum *possible* value available for measure  $i$  (usually 0), and

$\text{Range}_i$  = the range of *possible* values for a measure  $i$ .

For example, the Urology patient volume measure can range from 0 to 24 points. If a given hospital received 18 out of 24 points, the normalized value for Urology patient volume would be 0.75  $((18 - 0)/24)$ . For continuous variables such as the nurse-patient ratio, we used the minimum and maximum *observed* values.

## C. Weighting

For the 2012–13 rankings, we revised the weights of the individual measures. In previous years, factor analysis determined the relative weights of the measures. Our analyses and other healthcare quality research led us to believe, however, that measures of high quality often go hand in hand—improvement in one area often leads to improvement in another area. We sought to develop a new approach to construct ranking weights that reflect the relative significance of each measure on its own rather than its association (or lack of one) with other measures within structure or another Donabedian component.

We convened an expert panel to determine how much weight each of the measures should receive within each of the three major rankings components. The evaluation was done both across specialties to build in a degree of consistency in weighting and within specialties to identify measures that are keys to quality in a particular specialty. Overall, the weights were determined based on how

important each measure was in defining the Donabedian components of quality of care within hospitals. *Table 8* shows the relative weight for each of the measures that make up the structural component of the rankings, by specialty. The sum of the weights is 33.3% for all specialties, the weight allotted to the structural component in the overall score.

**Table 8. Weight (Percentage) of Structural Measures, by Specialty**

Measure	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
Accredited transplant program	2.2									
Adult congenital heart program		1.9								
Advanced clinical services	1.4	1.5	1.8	1.7	1.9	1.6	1.8	1.9	1.5	1.8
Advanced technologies	1.4	1.5	1.8	1.7	1.9	1.6	1.8	1.9	1.5	1.8
Asthma management									1.9	
Bone marrow transplant services	1.4									
Catheter procedure volume		1.5				1.6				
Clinical support services	1.4	1.5	1.8	1.7	1.9	1.6	1.8	1.9	1.5	1.8
Committing to clinical research	1.8	1.9	2.2	2.1	2.3	2.0	2.2	2.3	1.9	2.2
Committing to quality improvement	2.2	2.2	2.7	2.5	2.8	2.4	2.7	2.8	2.3	2.7
Congenital heart program		1.9								
Diabetes options			1.8							
Dialysis patients receiving transplants						2.0				
Dialysis volume						1.6				
ECMO (heart-lung machine)					1.9					
Engaging parents and family	1.8	1.9	2.2	2.1	2.3	2.0	2.2	2.3	1.9	2.2
Epilepsy treatment volume							1.8			
Fellowship programs	1.8	1.9	2.2	2.1	2.3	2.0	2.2	2.3	1.9	2.2
Heart transplant program		1.9								
Kidney biopsy volume						1.6				

(continued)

**Table 8. Weight (Percentage) of Structural Measures, by Specialty (continued)**

<b>Measure</b>	<b>Cancer</b>	<b>Cardiology &amp; Heart Surgery</b>	<b>Diabetes &amp; Endocrinology</b>	<b>Gastroenterology</b>	<b>Neonatology</b>	<b>Nephrology</b>	<b>Neurology &amp; Neurosurgery</b>	<b>Orthopedics</b>	<b>Pulmonology</b>	<b>Urology</b>
Kidney transplant volume						1.6				
Liver transplant program				1.7						
Lung disease of prematurity management									1.9	
Lung transplant program									1.9	
Minimally invasive procedure volume										1.8
Neuromuscular weakness disorder management									1.9	.
New-patient/clinic volume	1.4						1.8			
Norwood surgery volume		1.5								
Nurse Magnet hospital	2.9	2.2	2.7	2.5	2.8	2.4	2.7	2.8	2.3	2.7
Nurse-patient ratio	2.9	3.0	3.6	3.4	3.8	3.2	3.6	3.8	3.1	3.6
Palliative care program	2.2									
Patient and family services	1.4	1.5	1.8	1.7	1.9	1.6	1.8	1.9	1.5	1.8
Patient volume	1.4		1.8	1.7	1.9	1.6		1.9	1.5	1.8
Procedure volume			1.8	1.7				1.9	1.5	
Specialized clinics and programs	1.4	1.5	1.8	1.7	1.9		1.8	1.9		1.8
Subspecialist availability	1.4	1.5	1.8	1.7	1.9	1.6	1.8	1.9	1.5	1.8
Surgical volume	1.4	1.5		1.7			1.8			1.8
Use of health information technology	1.4	1.5	1.8	1.7	1.9	1.6	1.8	1.9	1.5	1.8
<b>Total*</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>

\* The sum of individual measures may not equal 33.3 due to rounding.

## V. Process

Starting in 2012, the process component in Best Children’s Hospitals is represented by three measures—commitment to best practices, an infection-prevention program, and reputation with pediatric specialists—that together are worth one-third of the overall score. Best practices and infection prevention previously were in structural measures. They were moved to the process component because they better reflect the Donabedian concept of process, which focuses on treatment, prevention, and care.

### A. Commitment to Best Practices

This measure evaluates hospitals’ commitment to following and implementing best practices. Best practices were identified for all specialties except for Gastroenterology. *Table 9* identifies the best practices identified for each specialty and the number of points awarded.

### B. Infection-prevention program

The infection-prevention program measure captures the commitment of a hospital to reducing the risk of infection to a child.

#### All-Specialty Infection Prevention Measures

A core set of submeasures for all specialties was worth up to 22 points, as shown in *Table 10*. Specialty-specific measures in all specialties except Urology allowed an additional 4–30 points, depending on the specialty.

#### 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 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 (5 additional points).*** Hospitals received 2 points for formally monitoring surgical site infections (SSIs) for major cardiothoracic procedures. Hospitals also 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  $\geq 90\%$ .

**Table 9. Best Practices, by Specialty**

Cancer (21 points)	Points
Participating in regular morbidity and mortality conferences	1 point
Having multidisciplinary tumor boards that meet at least quarterly to discuss the following patient populations in active treatment:	
<ul style="list-style-type: none"> <li>• Hematologic malignancy</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• Solid tumor</li> </ul>	
<ul style="list-style-type: none"> <li>• Brain tumor</li> </ul>	
Having case managers (comprising nurse practitioners, physician assistants, or clinical nurses) spend 25% or more of their time in care for the following patient populations:	
<ul style="list-style-type: none"> <li>• Hematologic malignancies</li> </ul>	Up to 4 points
<ul style="list-style-type: none"> <li>• Solid tumors</li> </ul>	
<ul style="list-style-type: none"> <li>• Brain tumors</li> </ul>	
<ul style="list-style-type: none"> <li>• Stem cell transplants</li> </ul>	
Percentage of patients presenting with febrile neutropenia who receive intravenous antibiotics within one hour of initial triage	1 pt: $\geq 50\%$ & $< 75\%$ 2 pt: $\geq 75\%$ & $< 90\%$ 3 pt: $\geq 90\%$
Percentage of patients seen in a formally structured late effects of off-therapy clinic within 5 years after the cessation of active treatment	1 pt: $\geq 50\%$ & $< 75\%$ 2 pt: $\geq 75\%$
Promoting ease of access through the following mechanisms	
<ul style="list-style-type: none"> <li>• Satellite offices and/or outreach clinics</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• Affiliate programs to assist patients facing barriers to care/community-based follow-up care</li> </ul>	
<ul style="list-style-type: none"> <li>• Multidisciplinary clinics allowing patients to see multiple care providers in a single visit</li> </ul>	
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

(continued)

**Table 9. Best Practices, by Specialty (continued)**

<b>Cardiology &amp; Heart Surgery (21 points)</b>	<b>Points</b>
Offering the following conferences/programs:	
<ul style="list-style-type: none"> <li>• Multidisciplinary morbidity and mortality conferences</li> </ul>	Up to 4 points
<ul style="list-style-type: none"> <li>• Multidisciplinary maternal/fetal medicine conferences</li> </ul>	
<ul style="list-style-type: none"> <li>• Active home surveillance program for infants after Stage 1 palliation for hypoplastic left heart syndrome</li> </ul>	
<ul style="list-style-type: none"> <li>• A follow-up program for children with or at risk for adverse neurodevelopmental outcomes</li> </ul>	
Engaging in the following surgical safety procedures:	
<ul style="list-style-type: none"> <li>• conventional pre-procedural "time-out"</li> </ul>	Up to 4 points
<ul style="list-style-type: none"> <li>• pre-procedural briefings</li> </ul>	
<ul style="list-style-type: none"> <li>• post-procedural debriefings</li> </ul>	
<ul style="list-style-type: none"> <li>• implementation of a hand-off protocol or briefing</li> </ul>	
Using Clinical Practice Guidelines to manage perioperative and postoperative care for the following patient populations:	
<ul style="list-style-type: none"> <li>• Single ventricle/shunt management</li> </ul>	Up to 4 points
<ul style="list-style-type: none"> <li>• Two ventricle repairs</li> </ul>	
<ul style="list-style-type: none"> <li>• Infant feeding</li> </ul>	
<ul style="list-style-type: none"> <li>• Anticoagulation with Coumadin</li> </ul>	
Routinely tracking and reporting the following surgical admission outcomes parameters:	
<ul style="list-style-type: none"> <li>• Unplanned reoperation during the same hospital admission</li> </ul>	Up to 4 points
<ul style="list-style-type: none"> <li>• Re-exploration for bleeding</li> </ul>	
<ul style="list-style-type: none"> <li>• Deep sternal wound infection/mediastinitis requiring debridement</li> </ul>	
<ul style="list-style-type: none"> <li>• Atrioventricular block requiring placement of a permanent pacemaker</li> </ul>	
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan addressing problems identified during training or simulation</li> </ul>	

(continued)

**Table 9. Best Practices, by Specialty (continued)**

Diabetes & Endocrinology (62 points)	Points
Having 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
Percent of diabetes inpatients admitted to other services, but seen by providers in the pediatric diabetes program	Up to 3 points: 1pt: $\geq 50\%$ & $< 75\%$ 2pt: $\geq 75\%$ & $< 90\%$ 3pt: $\geq 90\%$
Percentage of diabetes patients receiving a written (or electronic) summary of the findings and a treatment plan at the conclusion of their most recent visit:	
<ul style="list-style-type: none"> <li>• Inpatients</li> </ul>	Up to 6 points: 1pt: $\geq 50\%$ & $< 75\%$ 2pt: $\geq 75\%$ & $< 90\%$ 3pt: $\geq 90\%$
<ul style="list-style-type: none"> <li>• Outpatients</li> </ul>	
Having a clinical database of attributes of current, active diabetes patients that is used for quality assessment and improvement	1 point
Having a written plan to review inpatient incidents of insulin-related hypoglycemia requiring IV glucose treatment	1 point
Having written consensus protocols for management of the following patient populations:	
<ul style="list-style-type: none"> <li>• inpatient management of diabetic ketoacidosis</li> </ul>	Up to 7 points
<ul style="list-style-type: none"> <li>• glucagon minidose for families</li> </ul>	
<ul style="list-style-type: none"> <li>• insulin therapy during illness for families</li> </ul>	
<ul style="list-style-type: none"> <li>• periodic screening for complications of diabetes in the outpatient clinic</li> </ul>	
<ul style="list-style-type: none"> <li>• prompting evaluation of hyperglycemia in critically ill inpatients</li> </ul>	
<ul style="list-style-type: none"> <li>• outpatient management of type 2 diabetes patients</li> </ul>	
<ul style="list-style-type: none"> <li>• outpatient management of pre-diabetes patients who typically have obesity and insulin resistance</li> </ul>	
Performing care review for all inpatients with diabetes at an interdisciplinary team prior to discharge	1 point
Having regularly scheduled interdisciplinary care conferences to discuss diabetes patients with poor control	1pt: 1–11 times/year 2pt: 12+ times/year
Point of care testing for:	
<ul style="list-style-type: none"> <li>• Hemoglobin A1c</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• blood glucose</li> </ul>	
<ul style="list-style-type: none"> <li>• blood or urine ketones</li> </ul>	

(continued)

**Table 9. Best Practices, by Specialty (continued)**

Diabetes & Endocrinology (62 points) (continued)	Points
Having a formal written transition program to prepare pediatric patients for the transition to adult endocrinology	1 point
Percentage of primary diabetes care patients with documentation of the following results:	
<ul style="list-style-type: none"> <li>• blood pressure measurement at each visit</li> </ul>	Up to 9 points: 1pt: $\geq 50\%$ & $< 75\%$ 2pt: $\geq 75\%$ & $< 90\%$ 3pt: $\geq 90\%$
<ul style="list-style-type: none"> <li>• hemoglobin A1c measurement, 3 or more times in the past c12 months</li> </ul>	
<ul style="list-style-type: none"> <li>• height and weight at each visit</li> </ul>	
Points were awarded based on the percentage of patients meeting each condition:	
<ul style="list-style-type: none"> <li>• Percentage of primary diabetes care patients treated in the past 12 months attending four or more diabetes outpatient clinic visits</li> </ul>	Up to 12 points: 1pt: $\geq 50\%$ & $< 75\%$ 2pt: $\geq 75\%$ & $< 90\%$ 3pt: $\geq 90\%$
<ul style="list-style-type: none"> <li>• Percentage of type 1 diabetes outpatients with daily glucose blood glucose measurements available for review for the past 2 weeks.</li> </ul>	
<ul style="list-style-type: none"> <li>• Percentage of diabetes patients over age 10 with documentation of microalbumin screening</li> </ul>	
<ul style="list-style-type: none"> <li>• Percentage of diabetes patients over age 10 with documentation of non-mydratic camera examination</li> </ul>	
Providing patient education materials on various conditions in written form or on the hospital website	1 point
Discussing thyroid cancer patient cases in active treatment at a Tumor Board at least once a quarter	1 point
Diabetest staff taking a leadership role in organizing and running a Diabetes Camp	1 point
Using a clinical database used by the program to evaluate performance	1 point
Percentage of patients admitted to the hospital in the past year with an endocrine disorder that were seen by a physician in the pediatric endocrinology program	Up to 2 points: 1pt: $\leq 50\%$ 2pt: $> 50\%$
Recognition status from the American Diabetes Association or the American Association of Diabetes Educators as of Dec. 31, 2011	1 point
Using Harpenden (or wall-mounted) Stadiometers at clinic sites	1 point
Calibrating Harpenden (or wall-mounted) Stadiometers before each use	1 point
Implementing a policy where all bone age films ordered by Pediatric Endocrinologists are personally viewed, interpreted, and documented by a member of the program	1 point

(continued)

**Table 9. Best Practices, by Specialty (continued)**

<b>Diabetes &amp; Endocrinology (62 points) (continued)</b>	<b>Points</b>
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

<b>Neonatology (33 points)</b>	<b>Points</b>
Patient load per staff person:	
<ul style="list-style-type: none"> <li>Neonatologists</li> </ul>	Up to 6 points: 1 point: > 20 2 points: ≤ 20
<ul style="list-style-type: none"> <li>Social workers</li> </ul>	
<ul style="list-style-type: none"> <li>Nutritionists</li> </ul>	
<ul style="list-style-type: none"> <li>LIP (attending, fellow, resident, or NNP/PA) on the night shift</li> </ul>	Up to 2 points: 1 point: > 15 2 points: ≤ 15
<ul style="list-style-type: none"> <li>Nurse practitioners or Physician assistants</li> </ul>	Up to 2 points: 1 point: > 8 2 points: ≤ 8
Engaging in the following interaction with hospital's NICU	
<ul style="list-style-type: none"> <li>All newborn cardiac patients receiving a neonatology consult</li> </ul>	Up to 2 points
<ul style="list-style-type: none"> <li>Neonatology fellows rotating through NICU</li> </ul>	
Providing a percutaneous intravenous central catheter (PICC) team with specialized training to place and maintain PICC lines in NICU patients	1 point
Providing a simulation/training laboratory with NICU procedures or code simulation programs	1 point

(continued)

**Table 9. Best Practices, by Specialty (continued)**

Neonatology (33 points) (continued)	Points
Offering at least one training on the following protocols for NICU procedures in the simulation/training lab:	
• neonatal code response	Up to 7 points
• chest tube placement	
• intubation	
• neonatal resuscitation	
• ECMO simulation training	
• Exchange transfusion simulation training	
• other trainings	
Having at least 75% of neonatal fellows complete training in the following procedure protocols:	
• Chest tube placement	Up to 3 points
• Intubation	
• Neonatal resuscitation program	
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	Up to 4 points: 1pt: paper-based 2pt: computerized
• nurses	
Engaging in activities designed to ensure high reliability:	
• All clinical staff are trained in code response using simulations or other team trainings	Up to 5 points
• Team trainings include clear instructions and demonstration of roles and lines of communication	
• Team trainings are videotaped to allow for review of performance and needs for improvement	
• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed	
• All team trainings end with the development of an action plan to address problems identified during the training or simulation	
Nephrology (25 points)	Points
Percentage of school-age pediatric dialysis patients enrolled in a school or vocational rehabilitation program	1 point: ≤50% 2 points: > 50%

(continued)

**Table 9. Best Practices, by Specialty (continued)**

Nephrology (25 points) (continued)	Points
Up to 3 points for participating in regular interdisciplinary clinical conferences to review and coordinate the care of patients in the following specialties:	
<ul style="list-style-type: none"> <li>• Urology/uradiology</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• Renal pathology</li> </ul>	
<ul style="list-style-type: none"> <li>• Rheumatology</li> </ul>	
Providing the following services in support of the pediatric dialysis unit:	
<ul style="list-style-type: none"> <li>• designated medical director board-certified in pediatric nephrology</li> </ul>	Up to 6 points
<ul style="list-style-type: none"> <li>• Continuous Quality Improvement activities discussed independently from the adult dialysis service</li> </ul>	
<ul style="list-style-type: none"> <li>• pediatric maintenance dialysis patients receive treatment in a unit independent from adult patients</li> </ul>	
<ul style="list-style-type: none"> <li>• dedicated nursing staff with formal training in pediatric dialysis</li> </ul>	
<ul style="list-style-type: none"> <li>• chronic maintenance hemodialysis at-home program for adolescents</li> </ul>	
<ul style="list-style-type: none"> <li>• ambulatory blood pressure monitoring available for assessment of control of hypertension</li> </ul>	
Offering a formal transition program for kidney transplant patients from pediatric to adult care when needed	1 point
Offering a formal transition program for dialysis patients into adult care when needed	1 point
Percentage of living donor nephrectomies conducted via laparoscopic procedure	1 point: ≤ 50% 2 points: > 50%
Reviewing the care of all kidney transplant inpatients at an interdisciplinary care conference	1 point
Maintaining a database of current kidney transplant patients with clinical data to allow for quality assessment and improvement of care	1 point
Offering the following programs to support pediatric patients undergoing kidney transplant:	
<ul style="list-style-type: none"> <li>• Quality of life assessment</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• Child life program for kidney transplant patients</li> </ul>	
<ul style="list-style-type: none"> <li>• Transplant pharmacist who participates in follow-up clinics to provide education and medication reminders</li> </ul>	
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	

(continued)

**Table 9. Best Practices, by Specialty (continued)**

<b>Nephrology (25 points) (continued)</b>	<b>Points</b>
<ul style="list-style-type: none"> <li>• Team trainings are video-taped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

<b>Neurology &amp; Neurosurgery (15 points)</b>	<b>Points</b>
Conducting pre- and postsurgical neuropsychological evaluations for surgical patients with the following diagnoses:	
<ul style="list-style-type: none"> <li>• benign or malignant brain tumors</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• traumatic brain injury/concussion</li> </ul>	
<ul style="list-style-type: none"> <li>• medically intractable epilepsy</li> </ul>	
Participating in any nationally or regionally audited programs that include a focus on measure-specific outcome metrics related to neurology and neurosurgery	Up to 2 points
Engaging in the following activities	
<ul style="list-style-type: none"> <li>• maintaining a surgical mortality database</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• holding regular mortality and morbidity conferences</li> </ul>	
<ul style="list-style-type: none"> <li>• regularly holding interdisciplinary care conferences</li> </ul>	
Having 75% of EEG tests incorporated into the patients' medical chart within 36 hours:	
<ul style="list-style-type: none"> <li>• Standard EEG medical evaluations for epilepsy</li> </ul>	Up to 2 points
<ul style="list-style-type: none"> <li>• Long-term vEEG evaluations for epilepsy</li> </ul>	
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

(continued)

**Table 9. Best Practices, by Specialty (continued)**

<b>Orthopedics (15 points)</b>	<b>Points</b>
Number of pediatric orthopedic surgeons who are active or candidate members of the Pediatric Orthopaedic Society of North America	1 point: 1-2 2 points: > 2
Performing or offering the following:	
<ul style="list-style-type: none"> <li>• providing a pediatric imaging center that implements pediatric protocols to reduce radiation exposure</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• providing a pediatric imaging center with ultrasonographers with specialized training to perform hip exams</li> </ul>	
<ul style="list-style-type: none"> <li>• participating in a Tumor Board</li> </ul>	
<ul style="list-style-type: none"> <li>• participating in regular, multidisciplinary morbidity and mortality conferences</li> </ul>	
Using the SRS-22 questionnaire with patients both pre- and postoperatively	
Using written checklists and/or evidence based guidelines for managing patients with orthopedic injuries:	
<ul style="list-style-type: none"> <li>• Guidelines by hospital for femur fractures</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• Guidelines by American Academy of Orthopaedic Surgeons for supracondylar femur fractures</li> </ul>	
<ul style="list-style-type: none"> <li>• World Health Organization checklist for management of surgical procedures</li> </ul>	
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

<b>Pulmonology (14 points)</b>	<b>Points</b>
Having written consensus protocols for the following conditions:	
<ul style="list-style-type: none"> <li>• asthma exacerbations</li> </ul>	Up to 6 points
<ul style="list-style-type: none"> <li>• bronchiolitis</li> </ul>	
<ul style="list-style-type: none"> <li>• croup</li> </ul>	

(continued)

**Table 9. Best Practices, by Specialty (continued)**

<b>Pulmonology (14 points) (continued)</b>	<b>Points</b>
<ul style="list-style-type: none"> <li>• cystic fibrosis</li> </ul>	
<ul style="list-style-type: none"> <li>• pneumonia</li> </ul>	
<ul style="list-style-type: none"> <li>• tracheostomy or ventilator-dependent patients</li> </ul>	
Routinely involve pulmonologists in outpatient management of pediatric patients with the following conditions:	
<ul style="list-style-type: none"> <li>• sickle cell anemia</li> </ul>	Up to 3 points
<ul style="list-style-type: none"> <li>• primary immunodeficiency and/or post-bone marrow transplantation</li> </ul>	
<ul style="list-style-type: none"> <li>• Rheumatologic disorders</li> </ul>	
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

<b>Urology (8 points)</b>	<b>Points</b>
Having regular morbidity and mortality conferences to discuss pediatric urology patients	1 point
Having a formal program for tracking surgical site infections for major urological procedures	Up to 2 points
Engaging in activities designed to ensure high reliability:	
<ul style="list-style-type: none"> <li>• All clinical staff are trained in code response using simulations or other team trainings</li> </ul>	Up to 5 points
<ul style="list-style-type: none"> <li>• Team trainings include clear instructions and demonstration of roles and lines of communication</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings are videotaped to allow for review of performance and needs for improvement</li> </ul>	
<ul style="list-style-type: none"> <li>• Team trainings include critical event debriefing or team discussions that focus on identifying what worked well and where improvement is needed</li> </ul>	
<ul style="list-style-type: none"> <li>• All team trainings end with the development of an action plan to address problems identified during the training or simulation</li> </ul>	

**Table 10. Core Infection Prevention Measures—All Specialties (22 services)**

All Specialties (22 points)	Points
Tracking hand hygiene compliance rates	1 point
Percentage of compliant hand hygiene observations in the past 12 months	1 pt: ≥ 80% & < 90% 2 pt: ≥ 90%
Providing at least .50 full-time equivalent (FTE) financial support for a pediatric infectious disease specialist to serve as a dedicated director of the infection prevention program	1 point
Having at least 1.0 FTE infection preventionists	1 point
Receiving certification from the Certification Board in Infection Control of at least 75% of the hospital’s infection preventionists	1 point
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 and mid-level providers</li> </ul>	Up to 3 points
Ensuring that at least 50% of the following staff received an Tdap vaccination: <ul style="list-style-type: none"> <li>• Physicians (including attending, fellows, residents)</li> <li>• Nursing staff and mid-level providers</li> </ul>	Up to 2 points
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>	Up to 2 points
Having the following elements of antimicrobial stewardship program: <ul style="list-style-type: none"> <li>• Publishing a yearly antimicrobial susceptibility summary that is readily available to clinicians</li> <li>• Restricting pharmacy use of selected antimicrobial agents to prevent resistance patterns that may develop from overuse</li> <li>• Implementing prospective audit and feedback</li> <li>• Providing a dedicated pharmacist to the antimicrobial stewardship program (ASP)</li> <li>• FTE support for the role of medical director of the pediatric ASP program</li> <li>• Microbiology laboratory that restricts reporting of susceptibilities to some antimicrobials to prevent overuse</li> <li>• Conducting automatic intravenous (IV) to oral (PO) conversions</li> </ul>	Up to 7 points
Performing surveillance for 1 or more respiratory viruses	1 point
Having a formal program to prevent hospital-acquired pressure ulcers	1 point

*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  $< 90\%$ , and 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  $< 90\%$ , and 3 points for  $\geq 90\%$ .

***Neonatology (1 additional point).*** Hospitals received 1 point for reporting central line-associated bloodstream infection (BSI) rates stratified according to National Healthcare Safety Network (NHSN) guidelines for birth weight.

***Nephrology (25 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  $< 90\%$ , and 3 points for  $\geq 90\%$ . One additional point was awarded for tracking dialysis catheter associated BSI rates using NHSN guidelines for pediatric outpatients on maintenance dialysis.

***Neurology & Neurosurgery (7 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 tracking SSIs for ventricular shunt surgeries. Up to 3 additional points were awarded for 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 (4 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 SSIs using NHSN criteria.

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

## **C. Reputation With Pediatric Specialists**

Reputation 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 physician surveys in 2010, 2011, and 2012.

The 2012 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 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.

### **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 Physician 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.

### **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 ten 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

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<sup>††</sup> For details on the 2010 and 2011 surveys, please see the 2010 and 2011 methodology reports, which are available from [www.rti.org/besthospitals](http://www.rti.org/besthospitals).

were sent a cover letter, a business reply envelope, and a \$2 bill (an incentive since the first Best Hospitals rankings in 1990).

**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
	Psychiatry and Neurology	Child Neurology
	Pediatric Neurological Surgery	Pediatric Neurological Surgery
Orthopedics	Orthopedics	Pediatric Orthopedics**
Pulmonology	Pediatrics	Pediatric Pulmonary
Urology	Urology	Pediatric Urology

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

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

### *Mailings*

The physician survey mailings were conducted in stages over several weeks at the beginning of 2012. 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. **Table 12** summarizes the mailings schedule.

**Table 12. Physician Survey Mailings Schedule**

<b>Materials Mailed</b>	<b>Sent via</b>	<b>Sent to</b>	<b>Date</b>
1st copy of physician survey	USPS, First Class mail	Full physician sample	January 27, 2012
2nd copy of physician survey	USPS, First Class mail	Sample members who did not respond	February 17, 2012
3rd copy of physician survey	USPS, Priority mail	Sample members who did not respond	March 2, 2012
4th copy of physician survey	Federal Express	Sample members who did not respond	March 16, 2012

### *2012 Response Rates*

Of the 1,500 physicians sampled for this year's report, 139 were deemed ineligible after determining that they were no longer actively practicing. Of the remaining 1,361 physicians, more than one-half (736) returned the completed questionnaire by the deadline of April 9, 2012. The final response rate was 54.1%, 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 2012 by region and specialty.

**Table 13. Response Rates (%), by Region and Specialty, 2012**

<b>Specialty</b>	<b>Midwest</b>	<b>Northeast</b>	<b>South</b>	<b>West</b>	<b>Total</b>
Cancer	51.6	50.0	45.7	41.2	<b>47.0</b>
Cardiology & Heart Surgery	68.8	62.5	69.7	64.7	<b>66.4</b>
Diabetes & Endocrinology	54.5	31.4	45.5	47.1	<b>44.4</b>
Gastroenterology	68.6	64.7	44.4	42.9	<b>55.0</b>
Neonatology	45.5	33.3	20.6	38.7	<b>34.4</b>
Nephrology	70.0	46.9	51.4	51.5	<b>54.6</b>
Neurology & Neurosurgery	61.8	50.0	66.7	63.9	<b>60.3</b>
Orthopedics	58.8	58.3	48.6	47.1	<b>54.8</b>
Pulmonology	48.6	65.6	50.0	59.5	<b>55.8</b>
Urology	82.9	74.3	57.9	58.8	<b>68.3</b>
<b>Total</b>	<b>61.1</b>	<b>53.7</b>	<b>50.0</b>	<b>51.8</b>	<b>54.1</b>

## 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.

## Log Transformation

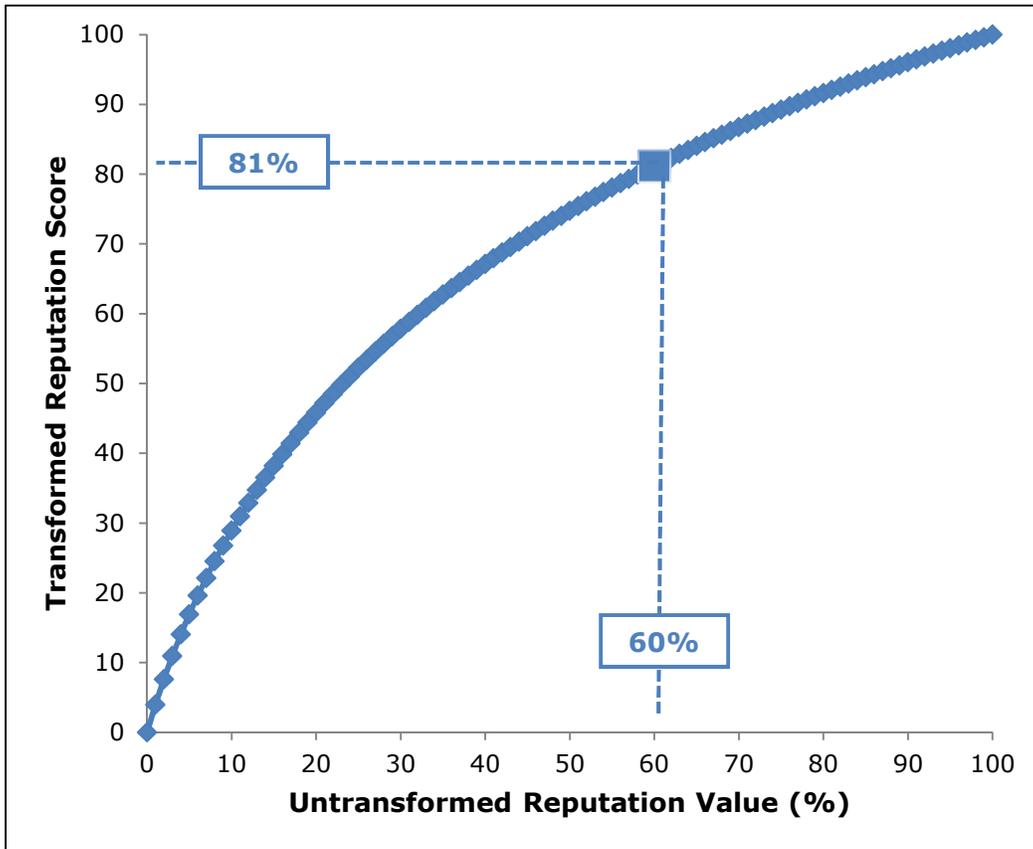
The weighted reputation values are displayed in the ranking tables. However, before being combined into the Index of Hospital Quality (IHQ), we implemented a log transformation of the reputation data to adjust for the large variation in values. By its nature, a survey that solicits recommendations for “best hospitals” will result in data that do not follow a normal distribution—relatively few hospitals will receive even one “best” recommendation, and of the hospitals recommended, 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.

Log transformation reshapes the distribution to more closely match the reputation data to those of the other components in the rankings. The transformation is applied to the weighted reputation data. The transformed data are then normalized and multiplied by 100 to provide a score that ranges from 0 to 100. *Figure 1* demonstrates the impact of this step on reputation data. As is evident, the transformed reputation scores are mostly higher than the untransformed reputation score. However, the degree of inflation is greater for low scores than for high ones. For example, a hospital with a reputation value of 1% has a transformed score of 4% (4 times greater), a hospital with a reputation value of 10% has a transformed score of 29% (2.9 times greater), and a hospital with a reputation value of 60% has a transformed score of 81% (1.35 times greater). Variation is thus reduced, and the impact of the reputation score on hospitals' final standing in the rankings is slightly diminished.

## D. Normalization and Weighting

The process component in each specialty is worth one-third (33.3%) of the overall score. For all specialties except for Gastroenterology, commitment to best practices and having an infection-prevention program were each worth 12.5% of the process score (4.2% of the overall score). Reputation is worth 75% of the process score (25% of the overall score). Gastroenterology did not include the best practices measure; therefore, infection prevention received double weight, 25% of the process score.

**Figure 1. Impact of Log Transformation on Reputation Data**



As with the other components, individual process measures were normalized before being combined in the Index of Hospital Quality (IHQ). Normalization, as described in **Section IV.B**, transforms index values into a distribution between 0 and 1 based on a measure's range of *possible* values. The possible values for reputation score range from 0% (no surveyed physicians nominated the hospital) to 100% (every surveyed physician nominated the hospital). For the 2012–13 rankings, the normalized reputation score determined the number of points hospitals received for reputation. If the highest reputation score in a given specialty was 80%, for example, the hospital with that score received a normalized score of 0.80, and since reputation was worth 25% of the overall score, the hospital received  $0.80 \times 25$ , or 20 points, for reputation. This marks a significant difference from previous years, when the hospital with highest reputation score received the full point total (i.e., 25 points).

## **VI. Outcomes**

For the Best Hospitals adult specialty rankings, risk-adjusted mortality 30 days after admission is a key outcome measure. 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.<sup>##</sup>

Because of the absence of comprehensive national sources of pediatric outcomes data comparable to the Medicare Provider Analysis and Review (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 (BSI) 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 2012–13 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**

Outcome measures are listed below, by specialty. Scoring rules used to assign points to hospitals for these outcomes are also described below. For all outcomes measures, a higher number of points indicates better outcomes (e.g., higher survival, lower mortality, fewer complications).

### **Cancer**

***100-Day BMT Survival (9 points).*** This measure assessed the percentage of pediatric patients aged 16 years or younger receiving allogeneic blood marrow (including cord blood and stem cell) transplants (BMTs) who survived for at least 100 days following the transplant. Hospitals could receive up to 3 points for each of the past 3 reporting years. Points were awarded as follows: 1 point for  $\geq 70\%$  and  $< 85\%$  100-day survivors, 2 points for  $\geq 85\%$  and  $< 95\%$  100-day survivors, and 3 points for  $\geq 95\%$  100-day survivors.

***Five-Year Cancer Survival (9 points).*** This measure evaluated the percentage of pediatric patients with standard risk acute lymphoblastic leukemia, acute myeloid leukemia, and Stage IV neuroblastoma (at least 18 months old) who were alive after 5 years of treatment in the pediatric cancer program. For each of the three measures, hospitals could receive up to 3 points for having a high percentage of 5-year survivors as follows: 1 point for  $\geq 50\%$  and  $< 75\%$  survivors, 2 points for  $\geq 75\%$  and  $< 90\%$  survivors, and 3 points for  $\geq 90\%$  survivors.

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<sup>##</sup>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/>.

***Success in Reducing ICU Infections (12 points).*** The rate of infections in intensive care units (ICUs) is considered a good benchmark of patient safety and outcome because such infections in hospital-based care should be minimal. Rates for three types of infections were tracked: central-line associated blood-stream infections (CLABSIs), catheter-associated urinary tract infections (CAUTIs), and ventilator-associated pneumonia (VAP). CLABSI rates were calculated as the number of BSIs per 1,000 central-line days during the previous 12 months, CAUTI rates were calculated as the number of infections per 1,000 catheter days during the previous 12 months, and VAP rates were calculated as the number of infections per 1,000 ventilator days during the previous 12 months.

CLABSI, CAUTI, and VAP rates were tracked for critical care patients. CLABSI rates were also tracked for all oncology/stem cell transplant patients. Hospitals were rewarded for lower rates of infections. For each of the four categories, hospitals received up to 3 points per group as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

## **Cardiology & Heart Surgery**

***Success in Reducing ICU Infections (9 points).*** The rate was calculated as the number of CLABSI, CAUTI, and VAP infections per 1,000 device-days (i.e., central-line days, catheter-days, ventilator-days) in critical care patients during the previous 12 months. Hospitals were rewarded for lower rates of infections. For each of the three types of infections, hospitals received up to 3 points, as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 central-line days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

***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 (18 points).*** Hospitals received up to 18 points based on survival rate of patients who received the Norwood Stage 1 procedure. To receive points, hospitals had to report data for each of the three most recent reporting periods for both surgical and 1-year survival. Up to 3 points were awarded for each reporting year 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 each of the three reporting years, 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 (18 points).*** This measure represents the rate of patient deaths following moderately complex to very difficult heart surgery procedures (Risk-adjusted classification for congenital heart surgery [RACHS-1] categories 3 to 6<sup>§§</sup>) at pediatric hospitals in the three most recent reporting periods. To receive points, a 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 3 years, a mortality ratio was computed. In each of the nine conditions (Categories 3, 4, and 5 and 6 combined in years 1–3), 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 five 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; 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 three conditions for maintaining lower mean A1c values. Points were awarded as follows: 1 point for mean hemoglobin A1c values that were  $> 8\%$  and  $\leq 10\%$ ; 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

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

21 days of age. Points were awarded as follows for each group: 1 point for  $\geq 50\%$  and  $< 75\%$  of patients in each condition; 2 points for  $\geq 75\%$  of patients in each condition.

## **Gastroenterology**

***Success in Reducing ICU Infections (9 points).*** The rate was calculated as the number of CLABSI, CAUTI, and VAP infections per 1,000 device-days (i.e., central-line days, catheter-days, ventilator-days) in critical care patients during the previous 12 months. Hospitals were rewarded for lower rates of infections. For each of the three types of infections, hospitals received up to 3 points as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 central-line/catheter/ventilator days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

***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  $\geq 90\%$ .

## **Neonatology**

***Success in Reducing ICU Infections (15 points).*** The rate was calculated as the number of BSIs per 1,000 central-line days during the previous 12 months. In neonatology, BSI rates were calculated overall and 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 3 points in each of the 5 conditions as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 central-line days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

## **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 three 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 2010 and 2011 for each of the three outcomes, as follows: 1 point for desirable outcome rates  $\geq 80\%$  and  $< 90\%$ ; 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, and 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 (3 points).*** This 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  $\leq 10\%$ , 2 points for complication rates  $> 2$  and  $\leq 5\%$ , and 3 points for  $\leq 2\%$ .

***Success in Reducing ICU Infections (6 points).*** The rate was calculated as the number of CLASBI and CAUTI infections per 1,000 device-days (i.e., central-line days and catheter-days) in critical care patients during the previous 12 months. Hospitals were rewarded for lower rates of infections. To receive points, hospitals had to report data for both CLASBI and CAUTI infections. For each of the two types of infections, hospitals received up to 3 points, as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 central-line days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

***Success in Preventing Dialysis-Related Infections (9 points).*** Hospitals received 6 points based on having a lower peritonitis rate (months of dialyses/cases of peritonitis) for patients on chronic peritoneal dialysis for the last 2 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, and 3 points for a rate of  $\geq 20$  months between peritonitis cases. Hospitals could receive an additional 3 points for having lower hemodialysis catheter associated BSIs for outpatients on maintenance hemodialysis in the previous 2 years. Hospitals received points as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1000 central line days; 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  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 rates 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 three specific treatments for epilepsy (temporal lobe epilepsy surgery, extra-temporal lobe epilepsy surgery, and functional hemispherectomy surgery) who were seizure-free after six months. 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; 2 points for  $\leq 3\%$  of patients having an adverse event.

***Preventing Surgical Complications (7 points).*** This measure rewards hospitals for having lower readmission rates for surgical complications. Hospitals received up to 2 points total for having fewer patients readmitted for cerebrospinal fluid leaks within 90 days of surgical procedures including craniotomy, spinal surgery for dysraphism, Chiari decompression, or shunt placement. Points were awarded as follows: 1 point for  $> 5$  and  $\leq 10$  readmitted patients within 90 days in the past 12 months; 2 points for  $> 0$  and  $\leq 5$  readmitted patients.

Hospitals received up to 2 points for having a lower 90-day readmission rates for patients receiving an intrathecal baclofen pump insertion procedure. Points were awarded, as follows: 1 point for  $> 5\%$  and  $\leq 15\%$  readmission rate; 2 points for  $\leq 5\%$  readmission rate.

Hospitals received up to 3 points for having lower 90-day readmission rates for patients receiving new neurosurgical shunt placements. Points were awarded as follows: 1 point for  $> 9\%$  and  $\leq 15\%$  readmission rate, 2 points for  $> 3\%$  and  $\leq 9\%$ , and 3 points for  $\leq 3\%$  readmission rate.

***Surgical Survival (12 points).*** Hospitals received up to 12 points for surgical survival rates for six significant neurological disorders or procedures, including brain tumors, craniosynostosis, hydrocephalus patient shunts, 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 (12 points).*** Hospitals received up to 12 points based on the rate of adverse outcomes for patients who received surgical correction for two types of scoliosis: idiopathic scoliosis, and neuromuscular scoliosis. Two adverse outcomes were measured for each type of scoliosis: unplanned admissions within 30 days of procedure, and returns to the operating room for equipment or mechanical issues within 90 days. Hospitals received up to 3 points for each of the four categories, with more points for better performance (i.e., lower levels of adverse events), as follows: 1 point for a complication rate  $> 7\%$  and  $\leq 10\%$ , 2 points for a complication rate  $> 3\%$  and  $\leq 7\%$ , and 3 points for a complication rate  $\leq 3\%$ .

## 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 4–5 days; 2 points for a stay of 0–3 days. For observation stay points, hospitals were also rewarded for shorter stays: 1 point for a stay of 2 days; 2 points for a stay of 0–1 days.

Hospitals were also awarded up to 6 points based on the percentage of inpatient deaths attributable to asthma, and the 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 rates  $> 3\%$  and  $\leq 5\%$ , 2 points for rates  $> 1\%$  and  $\leq 3\%$ , and 3 points for rates  $\leq 1\%$ .

***Cystic Fibrosis Management (12 points).*** This measure is comprised of six items representing better outcomes for patients with cystic fibrosis. Hospitals could receive up to 6 points for improving the functional status of cystic fibrosis patients' mean body mass index (BMI) and mean forced expiratory volume ( $FEV_1$ ). 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  $FEV_1$  measure, points were awarded, as follows: 1 point for mean  $FEV_1 \geq 80$  and  $< 90\%$ , 2 points for mean  $FEV_1 \geq 90\%$  and  $< 100\%$ , and 3 points for mean  $FEV_1 \geq 100\%$ .

Hospitals received up to 2 additional points for meeting performance benchmarks for cystic fibrosis. One point for having  $< 10\%$  quantity not sufficient for infants 0–3 months of age tested by pilocarpine iontophoresis; 1 point for having  $< 5\%$  quantity not sufficient for children over 3 months.

Hospitals received up to 2 points for having higher rates of patients with cystic fibrosis, over the age of 13, who completed an oral glucose tolerance test in the previous 12 months. One point was awarded for  $> 50\%$  and  $\leq 75\%$  of patients completing the test; 2 points were awarded for  $> 75\%$  of patients completing the test.

Mean hemoglobin A1c percentages were evaluated for patients with cystic fibrosis–related diabetes. Increases in A1c values increase the risk of microvascular complications in patients. Hospitals received up to 2 points for maintaining lower mean A1c values. Points were awarded as follows: 1 point for mean hemoglobin A1c values that were  $> 8\%$  and  $\leq 10\%$ ; 2 points for values  $\geq 4\%$  and  $\leq 8\%$ .

***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  $> 3\%$  and  $\leq 5\%$ , 2 points for mortality rate  $> 1\%$  and  $\leq 3\%$ , and 3 points for mortality rate  $\leq 1\%$ .

***Success in Reducing ICU Infections (9 points).*** The rate was calculated as the number of CLASBI, CAUTI, and VAP infections per 1,000 device-days (i.e., central-line days, catheter-days, ventilator-days) in critical care patients during the previous 12 months. Hospitals were rewarded for lower rates of infections. For each of the three types of infections, hospitals received up to 3 points as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 central-line days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

## **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 intra-abdominal 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  $\leq 1\%$ .

***Success in Reducing Urinary Tract Infections (3 points).*** The rate was calculated as the number of CAUTI infections per 1,000 catheter-days in critical care patients during the previous

12 months. Hospitals were rewarded for lower rates of infections. Hospitals received up to 3 points as follows: 1 point for  $> 3$  and  $\leq 6$  infections per 1,000 central-line days, 2 points for  $> 1$  and  $\leq 3$  infections, and 3 points for  $> 0$  and  $\leq 1$  infection.

## B. Normalization and Weighting

As with structural and process measures, individual outcomes measures were normalized to have a distribution between 0 and 1. Within each specialty, the individual outcomes measures were given equal weight. The overall outcomes component was worth one-third (33.3%) of the overall score. *Table 14* shows the weight of each measure on the total outcomes score for that specialty. The sum of the weights for each specialty is 33.3, which reflects the weight of the outcomes component in the overall score.

**Table 14. Weight (Percentage) of Outcomes Measures, by Specialty**

Measure	Cancer	Cardiology & Heart Surgery	Diabetes & Endocrinology	Gastroenterology	Neonatology	Nephrology	Neurology & Neurosurgery	Orthopedics	Pulmonology	Urology
100-day blood marrow transplant (BMT) survival	11.1									
Asthma inpatient care									8.3	
Cystic fibrosis management									8.3	
Diabetes management			16.7							
Epilepsy management							11.1			
Five-year cancer survival	11.1									
Hypothyroid management			16.7							
Managing dialysis patients						6.7				
Preventing biopsy complications						6.7				
Preventing deaths of patients on ventilators									8.3	
Preventing surgical complications							11.1	33.3		
Success in preventing dialysis-related infections						6.7				
Success in preventing surgical complications										16.7
Success in reducing infections	11.1	8.3		16.7	33.3	6.7			8.3	16.7
Surgical survival		8.3					11.1			
Survival after Norwood surgery		8.3								
Survival after heart transplant		8.3								
Survival after kidney transplant						6.7				
Survival after liver transplant				16.7						
<b>Total*</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>	<b>33.3</b>

\* The sum of individual measures may not equal 33.3 due to rounding.

## VII. U.S. News Score

The weights of the components used to make up the *U.S. News* ranking scores were revised. For the 2012–13 rankings each component—structure, outcomes, and process—was worth exactly one-third of the overall score.

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 components 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 2012–13 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 shown in Equation (2). The score can be thought of as a simple weighted sum of structural, process, and outcome measures as shown below:

Equation (2)  $Score = (\sum_{i=1}^{n_s} wts_i * s_i) + (\sum_{i=1}^{n_p} wtp_i * p_i) + (\sum_{i=1}^{n_o} wto_i * o_i)$ ,  
where

$Score$  = raw score for pediatrics,

$wts_i$  = weight assigned to structure measure  $i$ ,

$wtp_i$  = weight assigned to process measure  $i$ ,

$wto_i$  = weight assigned to outcomes measure  $i$ ,

$s_i$  = normalized value for structural measure  $i$ ,

$p_i$  = normalized value for process measure  $i$ , and

$o_i$  = normalized value for outcomes measure  $i$ .

Please note that the Index of Hospital Quality (IHQ) formula is meant for illustrative purposes only; it *cannot* be used to directly calculate a score for an individual hospital. 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 is shown in Equation (3):

Equation (3)  $U.S. News Score_j = (score_j) / maximum\ score$ ,

where the raw score is divided by the maximum score of any hospital.

## VIII. Pediatric Honor Roll

This year, 83 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. Starting this year, hospitals received 2 points for being ranked in the top 5% in a specialty and 1 point for being ranked in the top 6%–10% in a specialty. Hospitals were included in the final Honor Roll only if they received points in at least three specialties. For 2012–13, 12 hospitals qualified, based on points assigned by specialty. *Appendix D* lists the 2012–13 Honor Roll hospitals.

## IX. Future Improvements

Over the next 3–5 years, we plan to continue refining the measures used in the current pediatric specialties and to 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 health care.
- **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.

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 [PediatricHospSurvey@rti.org](mailto:PediatricHospSurvey@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 MRI.

**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 a registered nurse coordinator (or pain management clinical nurse specialist).

**Neonatal intensive care unit (NICU).** An 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 (PET/CT) scanning.** 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 (for situation, background, assessment, recommendation) method to communicate such a change in condition effectively and efficiently (i.e., escalation policy); and (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 controlled environments that protect 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 an NICU or a 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**  
**2012–13 Sample Physician Questionnaire**



# Best Children's Hospitals

Your nominations will be reflected in the 2012–13  
*U.S. News & World Report* «specialty» rankings.

Please name ten hospitals in the U.S., considering neither location nor cost, that you believe provide the best inpatient care in «specialty» for especially challenging medical conditions and surgical procedures. (Name individual hospitals, not hospital systems or medical schools.)

	Hospital	City	State
a.			
b.			
c.			
d.			
e.			
f.			
g.			
h.			
i.			
j.			

**Fax response to (800) 476-9721  
or return in postpaid envelope.**

**Appendix C**  
**2012–13 Pediatric Rankings**

**Pediatric Rankings 2012--Cancer**

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Five-year cancer survival	100-day BMT survival	Success in reducing ICU infections	Patient volume	New-patient volume	Surgical volume	Nurse-patient ratio	Nurse Magnet hospital	Bone marrow transplant services	Accredited transplant program	Palliative care program	Advanced clinical services	Clinical support services	Advanced technologies	Specialized clinics and programs	Patient and family services	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship programs	Committing to clinical research
1	Children's Hospital of Philadelphia	100.0	75.2	24	19	4	7	9	9	3	6	3.4	1	16	1	3	18	10	14	9	8	6	9	10	13	2	12
2	Dana-Farber Cancer Center/Boston Children's Hospital	95.7	77.0	24	20	4	6	7	9	2	6	3.7	1	16	1	3	18	10	14	9	8	6	9	10	14	2	12
3	Cincinnati Children's Hospital Medical Center	92.8	45.4	21	20	4	7	10	7	2	5	3.4	1	16	1	3	18	10	14	9	8	6	9	10	13	2	12
4	Texas Children's Hospital	88.6	45.1	24	21	4	5	8	9	3	5	2.9	1	16	1	3	18	10	14	9	8	6	9	10	14	2	12
5	Children's Hospital Los Angeles	86.9	32.9	21	20	4	7	9	9	3	5	3.0	1	16	1	3	18	10	13	9	8	6	9	10	14	1	11
6	St. Jude Children's Research Hospital	84.2	62.2	23	21	3	5	7	9	3	5	5.4	0	15	1	3	17	10	14	9	8	6	9	10	14	1	12
7	Seattle Children's Hospital	82.4	30.1	24	17	3	7	8	9	2	3	2.9	1	16	1	3	16	10	13	9	8	6	9	10	14	2	12
8	Children's Hospital Colorado	76.0	16.3	22	20	4	9	3	8	2	4	3.2	1	15	1	3	18	10	13	9	8	6	9	10	14	2	12
9	Children's National Medical Center	74.9	12.9	22	20	4	7	8	8	2	2	3.2	1	16	1	3	18	10	14	9	8	6	9	10	14	1	12
10	Ann and Robert H. Lurie Children's Hospital of Chicago	73.7	9.8	19	21	4	8	9	3	2	2	3.2	1	16	1	2	18	10	13	9	7	6	9	10	13	2	12
11	Memorial Sloan-Kettering Cancer Center	72.7	27.4	17	20	3	7	7	4	3	3	3.2	0	16	1	2	17	10	14	9	8	6	9	10	14	2	12
12	Rainbow Babies and Children's Hospital	71.0	2.7	17	21	5	8	9	6	3	4	2.8	1	16	1	3	18	10	14	8	8	6	9	10	14	1	12
13	St. Louis Children's Hospital-Washington University	70.0	5.9	19	18	5	9	7	5	1	3	2.9	1	14	1	3	18	10	14	8	8	6	9	10	13	1	12
14	Children's Hospital Cleveland Clinic	68.7	1.7	26	21	8	6	9	6	3	4	3.1	1	10	0	3	18	10	14	9	8	6	9	10	13	1	11
15	M.D. Anderson Children's Cancer Hospital	68.3	9.3	17	13	3	6	9	7	3	6	3.6	1	16	1	3	17	10	14	9	8	6	8	7	14	1	11
15	Johns Hopkins Children's Center	68.3	24.6	17	20	3	4	6	5	2	3	3.5	1	15	1	3	18	10	13	9	8	6	9	7	14	1	11
17	Children's Medical Center Dallas	68.2	10.2	20	20	4	8	7	4	2	2	3.1	1	16	1	1	17	10	13	9	8	6	8	10	14	1	11
18	Mayo Eugenio Litta Children's Hospital	64.8	2.3	20	15	4	9	6	6	3	4	3.4	1	14	1	3	17	10	14	9	8	5	9	10	13	1	11
19	Miami Children's Hospital	64.4	1.2	16	15	9	8	7	5	3	5	3.1	1	14	1	1	18	10	12	8	8	6	8	4	13	0	10
20	NY-Presby. Morgan Stanley-Komansky Children's Hospital	64.3	4.9	18	21	8	4	7	6	2	3	2.9	0	16	1	3	18	10	14	9	8	6	9	10	13	2	12
21	Kosair Children's Hospital	64.2	0.8	22	21	5	9	8	5	1	3	2.9	1	12	1	3	18	10	13	9	8	6	9	9	14	0	8
22	Children's Healthcare of Atlanta	63.0	9.8	19	18	2	5	9	9	3	5	3.5	0	16	1	3	17	10	14	9	8	6	9	10	14	1	12
23	Nationwide Children's Hospital	62.3	5.6	21	18	3	4	10	7	2	3	2.5	1	15	1	2	18	10	9	9	8	6	9	10	13	2	11
24	University of Minnesota Amplatzer Children's Hospital	61.5	5.1	17	18	5	4	8	3	1	2	2.7	1	16	1	3	16	10	13	9	8	6	9	10	13	2	11
25	Lucile Packard Children's Hospital at Stanford	61.4	9.2	18	21	4	6	8	6	1	5	3.1	0	16	1	1	18	10	13	9	8	6	9	10	13	1	12
26	North Carolina Children's Hospital at UNC	61.2	0.6	13	21	7	9	6	5	1	3	2.7	1	13	1	3	14	10	11	7	7	6	5	10	13	1	9
27	Duke Children's Hospital and Health Center	61.0	6.5	18	16	4	7	6	5	1	2	2.4	1	16	1	3	18	10	13	9	8	6	8	10	14	1	7
28	Mattel Children's Hospital UCLA	60.8	2.0	19	20	5	7	6	4	3	3	2.4	1	16	1	3	18	10	13	9	8	6	9	6	13	1	8
28	Riley Hospital for Children Indiana University Health	60.8	1.1	20	18	3	6	8	6	2	5	3.5	1	16	1	3	18	10	14	9	8	6	9	4	13	2	12
30	Children's Mercy Hospitals and Clinics	59.8	3.1	22	20	4	6	5	6	2	2	3.8	1	16	1	3	18	10	11	8	8	6	9	10	14	1	11
31	Children's Hospital of Pittsburgh of UPMC	59.4	4.2	16	16	4	6	9	6	1	4	3.0	0	16	1	3	18	10	14	9	8	6	8	10	14	2	9
32	Mount Sinai Kravis Children's Hospital	58.8	0.5	22	13	7	9	7	2	1	1	1.9	1	13	1	3	15	10	14	8	8	6	8	10	12	0	3
33	American Family Children's Hospital	58.3	0.0	18	17	6	6	7	5	1	3	3.6	1	13	1	1	18	10	14	9	8	6	8	10	13	2	11
34	Levine Children's Hospital	57.7	1.1	22	17	6	9	10	3	1	2	2.7	0	12	1	1	14	10	12	8	8	6	9	9	14	0	8
35	Akron Children's Hospital	57.4	0.0	24	21	4	9	8	3	1	2	3.3	1	13	0	3	18	10	11	9	8	6	9	9	14	1	4
36	Monroe Carell Jr. Children's Hospital at Vanderbilt	56.5	0.4	13	16	4	7	8	4	1	3	3.5	1	16	1	2	16	10	13	9	7	6	9	10	13	1	11
37	Rady Children's Hospital	56.2	1.2	22	21	4	4	11	8	1	2	3.0	0	14	1	3	18	10	14	9	8	6	8	10	13	1	12
38	Children's Hospital of Orange County	56.0	0.4	22	19	3	5	9	4	1	2	2.4	1	16	1	3	17	10	14	9	8	6	9	10	13	1	12
39	UCSF Benioff Children's Hospital	55.8	7.8	21	20	2	7	7	3	1	2	3.5	0	15	1	3	17	10	14	9	8	6	9	1	13	1	12
40	Cook Children's Medical Center	55.7	1.5	23	18	4	5	8	8	1	4	3.4	1	16	1	1	18	10	14	9	8	6	9	10	12	0	9
41	University of Michigan C.S. Mott Children's Hospital	55.6	3.2	25	20	6	4	5	3	1	2	3.8	0	16	1	3	18	10	14	9	8	6	9	10	13	2	10
42	Penn State Hershey Children's Hospital	55.1	0.5	14	18	5	6	9	5	1	2	2.7	1	14	1	1	18	10	12	9	8	6	8	10	12	1	8
43	Doernbecher Children's Hospital	54.7	1.1	20	20	3	8	7	5	1	3	3.4	0	16	1	3	17	10	14	8	8	6	8	10	13	1	10
43	Primary Children's Medical Center	54.7	2.5	20	20	4	8	5	3	1	2	4.8	0	16	1	3	18	10	14	9	8	6	9	4	13	1	9
45	Children's Hospital of Michigan	54.1	1.8	20	14	5	4	8	4	1	2	2.4	1	14	1	1	16	10	12	8	8	6	9	10	13	2	11
46	Helen DeVos Children's Hospital	53.7	1.7	20	18	3	6	9	4	1	3	2.5	1	13	0	3	18	9	13	9	8	6	9	10	13	1	9
47	Alfred I. duPont Hospital for Children	52.8	0.6	26	18	5	8	6	3	1	2	3.3	0	13	0	3	18	10	13	9	8	6	9	10	14	1	12
47	Children's Hospital and Medical Center	52.8	0.0	18	13	9	9	5	3	1	2	3.6	1	0	0	1	14	10	13	7	8	6	9	10	13	0	7
49	Wolfson Children's Hospital	52.2	0.8	13	17	3	4	10	4	1	4	3.4	1	13	1	3	17	10	12	9	8	6	9	10	13	0	10
50	Steven and Alexandra Cohen Children's Medical Center	51.0	0.5	20	19	6	4	8	6	1	2	3.3	0	15	1	3	15	10	13	8	8	6	9	10	14	1	4
51	Children's Hospital of Alabama at UAB	49.5	0.6	13	17	3	5	6	6	2	3	2.7	1	16	1	1	17	10	12	9	8	6	8	9	13	2	11
52	University of Iowa Children's Hospital	49.4	0.9	22	18	5	4	2	6	1	2	2.5	1	13	1	3	18	10	12	9	8	6	9	10	14	2	8

Top 5%  
Top 10%

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

## Pediatric Rankings 2012--Cardiology & Heart Surgery

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Survival after surgery	Survival after heart transplant	Survival after Norwood surgery	Success in reducing ICU infections	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship programs	Committing to clinical research
1	Boston Children's Hospital	100.0	89.2	25	21	15	4	17	5	27	30	9	3.7	1	18	10	4	18	9	5	11	8	6	9	10	14	2	9
2	Children's Hospital of Philadelphia	95.2	84.1	25	21	14	4	12	6	27	23	9	3.4	1	16	10	4	18	9	5	11	8	6	9	10	14	2	9
3	Texas Children's Hospital	93.5	49.5	27	21	16	4	16	6	25	23	9	2.9	1	18	10	4	18	9	5	11	8	6	9	10	14	2	10
4	University of Michigan C.S. Mott Children's Hospital	82.5	51.8	27	19	13	4	14	3	27	22	9	3.8	0	17	10	4	17	9	5	11	8	6	9	10	13	2	10
5	Nationwide Children's Hospital	80.8	17.9	23	21	15	5	11	8	16	24	9	2.5	1	18	10	4	18	9	5	11	8	6	9	10	13	2	8
6	Children's Healthcare of Atlanta	80.4	23.9	20	20	16	4	15	6	27	25	9	3.5	0	18	10	4	18	9	5	11	8	6	9	10	14	2	10
7	NY-Presby. Morgan Stanley-Komansky Children's Hospital	80.0	25.7	19	20	15	5	15	6	24	21	9	2.9	0	18	10	4	18	9	5	11	8	6	9	10	13	2	7
8	Cincinnati Children's Hospital Medical Center	79.0	30.0	22	21	15	4	13	6	15	15	6	3.4	1	18	9	3	18	9	5	11	8	6	9	10	11	1	10
9	Children's Hospital Los Angeles	78.3	13.5	22	20	17	5	17	6	27	19	9	3.0	1	17	9	3	14	9	5	11	8	6	9	10	14	1	7
10	Lucile Packard Children's Hospital at Stanford	76.8	39.6	19	21	13	5	10	6	24	17	6	3.1	0	15	10	4	18	9	5	11	8	6	9	10	12	1	7
11	Seattle Children's Hospital	76.7	6.4	25	17	15	6	16	7	17	21	9	2.9	1	18	9	4	15	9	5	11	8	6	9	10	14	2	8
12	Children's Hospital of Pittsburgh of UPMC	75.9	12.0	21	21	15	5	17	8	16	15	7	3.0	0	18	10	4	18	9	5	11	8	6	8	10	14	2	6
13	St. Louis Children's Hospital-Washington University	72.9	10.5	21	20	16	4	15	5	15	22	8	2.9	1	16	10	4	18	9	5	11	8	6	9	10	13	2	9
14	Children's Medical Center Dallas	69.2	7.3	22	19	14	4	15	6	19	17	9	3.1	1	15	10	4	17	9	5	11	8	6	8	10	14	2	5
15	Medical University of South Carolina Children's Hospital	68.3	8.1	25	21	18	3	18	6	18	15	8	2.9	0	18	10	4	16	9	5	11	8	4	9	10	12	1	9
16	Children's Hospital Cleveland Clinic	68.2	2.5	27	20	15	5	14	7	9	14	4	3.1	1	14	10	4	18	9	5	11	8	6	9	10	14	2	8
16	Johns Hopkins Children's Center	68.2	4.1	18	21	18	6	14	4	15	12	3	3.5	1	15	10	4	18	9	5	11	8	6	9	7	11	2	10
18	Primary Children's Medical Center	67.8	4.0	21	20	15	5	18	5	22	19	8	4.8	0	18	10	4	18	9	5	11	8	6	9	4	13	2	7
19	Riley Hospital for Children Indiana University Health	66.6	3.3	24	20	14	6	13	6	19	12	6	3.5	1	15	9	3	17	9	5	11	8	6	9	4	13	2	8
20	Monroe Carell Jr. Children's Hospital at Vanderbilt	65.9	7.2	18	18	13	4	8	7	22	19	9	3.5	1	16	10	4	18	9	5	11	7	6	9	10	13	2	8
21	Children's Hospital Colorado	65.2	9.5	23	20	13	5	14	2	18	18	7	3.2	1	18	10	4	17	9	5	11	8	6	9	10	13	1	5
22	Ann and Robert H. Lurie Children's Hospital of Chicago	63.9	7.3	20	21	13	5	10	6	12	11	3	3.2	1	18	10	4	18	9	5	11	7	6	9	10	12	1	7
23	Mayo Eugenio Litta Children's Hospital	63.5	7.7	23	21	14	3	12	6	12	13	3	3.4	1	13	10	3	18	9	5	11	8	5	9	10	14	2	8
24	Duke Children's Hospital and Health Center	62.8	5.0	20	19	13	3	15	6	15	24	7	2.4	1	18	10	3	18	9	5	11	8	6	8	10	14	1	10
25	Shands Hospital for Children at the University of Florida	62.1	0.5	19	20	16	6	16	7	10	6	4	2.2	1	12	10	4	17	8	5	10	8	6	9	10	13	1	2
26	Mattel Children's Hospital UCLA	61.8	6.4	20	19	14	4	14	4	11	21	4	2.4	1	15	10	4	15	9	5	11	8	6	9	6	12	2	8
27	UCSF Benioff Children's Hospital	59.3	8.8	22	19	17	NA	18	7	20	18	8	3.5	0	13	10	0	17	9	5	11	8	6	9	1	14	2	7
28	Rady Children's Hospital	58.6	2.5	23	21	17	NA	17	9	18	20	7	3.0	0	17	10	0	16	9	5	11	8	6	8	10	13	2	9
29	University of Iowa Children's Hospital	58.0	0.7	23	18	16	6	16	2	9	16	3	2.5	1	11	9	3	18	9	5	11	8	6	9	10	11	2	5
30	Children's National Medical Center	57.2	8.9	23	21	12	NR	12	6	18	21	9	3.2	1	13	10	1	18	9	5	11	8	6	9	10	14	1	9
31	Miami Children's Hospital	56.2	7.6	18	21	17	NA	18	4	15	18	4	3.1	1	18	10	0	18	9	5	11	8	6	8	4	12	1	10
32	Children's Hospital of Michigan	55.9	1.9	23	20	11	5	10	5	14	19	4	2.4	1	18	10	4	17	9	5	11	8	6	9	10	10	1	5
33	Levine Children's Hospital	53.9	0.0	23	19	13	6	11	7	12	12	7	2.7	0	16	10	3	15	9	5	11	8	6	9	9	11	0	6
34	Advocate Hope Children's Hospital	51.3	0.5	25	19	14	NA	15	7	22	16	9	2.8	1	15	7	0	16	9	5	11	8	6	9	10	14	1	8
35	Alfred I. duPont Hospital for Children	51.2	0.9	27	21	14	4	14	5	9	12	4	3.3	0	15	8	2	16	9	5	10	8	6	9	10	12	0	8
36	Children's Hospital of Alabama at UAB	50.2	0.5	16	21	10	6	11	4	17	16	6	2.7	1	16	10	3	14	9	5	11	8	6	8	9	9	0	4
37	All Children's Hospital	47.9	1.6	22	20	12	4	11	5	14	12	6	2.8	0	16	8	4	18	9	5	10	7	6	9	7	12	0	5
38	Wolfson Children's Hospital	45.8	0.0	17	17	14	NA	16	8	9	13	3	3.4	1	14	9	0	12	9	5	11	8	6	9	10	11	1	3
39	Arkansas Children's Hospital	45.0	3.6	18	21	12	3	NR	8	18	17	6	3.2	0	17	9	4	18	9	5	10	8	5	7	0	13	1	6
40	Kosair Children's Hospital	44.8	0.5	24	20	13	1	8	6	12	13	5	2.9	1	17	10	3	14	9	5	11	8	6	9	9	11	0	6
41	Children's Mercy Hospitals and Clinics	44.5	0.8	25	18	13	NA	12	4	19	18	7	3.8	1	16	9	0	18	9	5	10	8	6	9	10	11	1	6
42	Rainbow Babies and Children's Hospital	44.3	1.6	18	21	15	NA	10	8	10	10	3	2.8	1	10	9	0	15	9	5	10	8	6	9	10	12	1	2
43	Children's Hospitals and Clinics of Minnesota	43.4	1.1	19	21	17	NA	18	2	19	13	7	3.8	0	15	9	0	13	9	5	11	8	6	9	10	12	0	9
44	Children's Hospital and Medical Center	42.9	0.8	19	21	14	NA	16	3	13	14	6	3.6	1	16	8	0	11	9	5	11	8	6	9	10	10	0	9
45	Holtz Children's Hospital at UM-Jackson Memorial Hospital	42.8	0.0	17	16	10	3	10	7	9	10	3	2.2	0	14	10	3	17	9	5	10	8	6	8	10	14	2	2
46	North Carolina Children's Hospital at UNC	42.7	0.2	18	21	9	5	5	6	9	9	3	2.7	1	13	7	2	15	9	5	10	7	6	9	10	12	0	5
47	Arnold Palmer Medical Center	42.4	1.0	19	20	16	NA	16	6	10	11	7	1.7	0	11	9	0	14	9	5	11	8	6	9	10	11	0	8
48	Le Bonheur Children's Hospital	41.7	0.0	20	21	13	NR	12	7	9	11	2	2.6	0	15	10	1	17	9	5	10	8	6	9	10	13	2	4
49	Akron Children's Hospital	41.4	0.0	25	21	14	NA	12	6	9	12	3	3.3	1	13	9	0	13	9	5	10	8	6	9	9	11	0	5
50	Doernbecher Children's Hospital	40.6	1.7	21	17	9	3	7	5	10	14	6	3.4	0	14	10	2	15	9	5	11	8	6	8	10	11	1	4

Top 5%

Top 10%

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

## Pediatric Rankings 2012--Diabetes & Endocrinology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Diabetes management	Hypothyroid management	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Committing to clinical research
1	Children's Hospital of Philadelphia	100.0	70.1	24	61	13	4	36	30	3.4	1	4	19	9	10	7	8	6	9	10	11	1	1
2	Boston Children's Hospital	89.6	57.3	23	56	16	2	28	22	3.7	1	4	18	9	10	8	8	6	9	10	11	1	1
3	Yale-New Haven Children's Hospital	87.0	25.7	20	60	16	4	23	24	2.5	1	4	19	8	10	8	8	6	9	10	11	1	1
4	Children's Hospital Colorado	83.6	40.0	20	52	12	3	26	24	3.2	1	4	19	9	10	8	8	6	9	10	11	1	1
5	Cincinnati Children's Hospital Medical Center	82.4	23.0	19	55	13	4	23	19	3.4	1	4	18	9	10	8	8	6	9	10	11	1	1
6	Children's Hospital of Pittsburgh of UPMC	81.0	33.6	20	60	13	4	30	24	3.0	0	4	18	9	10	7	8	6	8	10	11	1	1
7	Children's Hospital Los Angeles	78.8	28.3	18	51	15	3	29	13	3.0	1	4	17	9	8	6	8	6	9	10	11	1	1
8	Johns Hopkins Children's Center	78.0	17.4	17	58	15	4	22	14	3.5	1	4	15	9	9	7	8	6	9	7	10	1	1
9	Mattel Children's Hospital UCLA	73.2	10.7	19	58	14	4	17	21	2.4	1	4	17	9	10	8	8	6	9	6	11	1	1
10	NY-Presby. Morgan Stanley-Komansky Children's Hospital	72.7	12.7	17	60	15	4	27	21	2.9	0	4	18	9	10	7	8	6	9	10	11	1	1
11	Rainbow Babies and Children's Hospital	72.5	8.3	16	61	13	4	24	20	2.8	1	4	18	9	10	8	8	6	9	10	10	1	1
12	Nationwide Children's Hospital	68.6	3.1	21	54	13	4	28	26	2.5	1	4	18	9	10	7	8	6	9	10	11	1	1
13	Shands Hospital for Children at the University of Florida	67.7	14.1	16	57	12	3	15	16	2.2	1	4	18	9	10	7	8	6	9	10	11	1	1
14	Texas Children's Hospital	67.6	15.6	23	55	15	1	32	21	2.9	1	4	17	9	10	7	8	6	9	10	11	1	1
15	Mayo Eugenio Litta Children's Hospital	67.2	3.4	19	52	14	4	17	17	3.4	1	4	16	9	10	8	8	5	9	10	10	1	1
16	Children's Healthcare of Atlanta	66.9	3.3	18	54	16	4	33	19	3.5	0	4	17	9	10	8	8	6	9	10	11	1	1
17	University of Michigan C.S. Mott Children's Hospital	66.8	7.1	26	59	12	4	23	22	3.8	0	3	18	9	10	7	8	6	9	10	11	1	1
18	Monroe Carell Jr. Children's Hospital at Vanderbilt	66.7	5.4	17	53	13	3	30	24	3.5	1	4	18	9	10	8	7	6	9	10	11	1	1
19	Seattle Children's Hospital	66.2	5.8	22	49	13	3	22	23	2.9	1	4	17	9	10	8	8	6	9	10	11	1	1
20	Rady Children's Hospital	65.8	3.7	21	58	15	4	27	25	3.0	0	4	18	9	10	7	8	6	8	10	11	1	1
21	Riley Hospital for Children Indiana University Health	65.0	12.4	22	52	13	2	29	16	3.5	1	4	18	9	10	7	8	6	9	4	11	1	1
22	Children's National Medical Center	64.3	2.0	18	50	13	4	26	14	3.2	1	4	17	9	9	7	8	6	9	10	10	1	1
23	Mount Sinai Kravis Children's Hospital	63.9	2.3	22	60	13	4	21	18	1.9	1	4	16	9	10	6	8	6	8	10	10	1	1
24	Children's Medical Center Dallas	63.7	8.1	19	52	13	2	32	27	3.1	1	4	18	9	10	6	8	6	8	10	11	1	1
25	Winthrop University Hospital Children's Medical Center	63.4	2.1	22	62	16	4	20	17	4.1	0	4	16	9	10	6	8	6	9	6	10	1	1
26	Children's Hospital Cleveland Clinic	63.1	3.2	26	61	14	3	32	21	3.1	1	4	18	9	10	8	8	6	9	10	11	0	1
27	UCSF Benioff Children's Hospital	62.4	11.9	21	52	12	4	13	13	3.5	0	4	16	9	10	6	8	6	9	1	11	1	1
28	Duke Children's Hospital and Health Center	62.3	4.5	17	50	13	3	23	19	2.4	1	4	18	9	10	8	8	6	8	10	11	1	1
29	Children's Hospital of Alabama at UAB	62.2	1.3	15	58	13	4	24	15	2.7	1	4	16	9	10	7	8	6	8	9	11	1	1
30	Lucile Packard Children's Hospital at Stanford	61.7	15.2	14	50	14	3	18	10	3.1	0	4	18	9	10	2	8	6	9	10	10	1	1
31	Ann and Robert H. Lurie Children's Hospital of Chicago	61.1	2.8	18	53	13	3	30	14	3.2	1	4	17	9	10	6	7	6	9	10	11	1	1
32	North Carolina Children's Hospital at UNC	60.1	0.9	17	59	11	4	17	14	2.7	1	4	16	9	10	8	7	6	9	10	11	1	1
33	Cook Children's Medical Center	59.6	2.0	24	56	13	3	28	24	3.4	1	4	18	9	10	7	8	6	9	10	11	0	1
34	Children's Mercy Hospitals and Clinics	58.9	1.3	22	54	13	2	29	19	3.8	1	4	19	9	10	8	8	6	9	10	11	1	1
35	St. Louis Children's Hospital-Washington University	58.6	6.7	16	46	13	2	26	15	2.9	1	4	16	9	10	7	8	6	8	10	11	1	1
36	Holtz Children's Hospital at UM-Jackson Memorial Hospital	58.3	2.5	16	57	13	4	23	19	2.2	0	4	19	9	10	7	8	6	8	10	10	1	1
37	Connecticut Children's Medical Center	57.1	2.8	16	49	15	4	19	20	2.2	0	4	17	9	10	2	6	6	9	10	11	1	1
38	Children's Hospital at Montefiore	56.6	1.5	23	56	9	4	21	23	3.1	0	4	17	9	10	8	8	6	9	10	11	1	1
39	Wolfson Children's Hospital	55.9	3.4	16	56	15	1	23	21	3.4	1	4	16	9	10	8	8	6	9	10	10	1	1
40	Massachusetts General Hospital for Children	55.8	6.6	18	58	12	2	14	10	1.9	1	4	18	9	10	6	8	6	9	10	10	1	1
41	American Family Children's Hospital	54.8	0.9	17	48	13	3	18	9	3.6	1	4	16	9	10	5	8	6	7	10	10	1	1
42	University of Iowa Children's Hospital	53.6	0.9	21	54	13	3	15	17	2.5	1	4	16	9	10	8	8	6	9	10	11	0	1
43	Helen DeVos Children's Hospital	50.4	0.6	19	49	13	3	24	21	2.5	1	4	17	8	10	4	8	6	8	10	10	0	1
44	Doernbecher Children's Hospital	50.2	1.7	19	52	12	3	21	12	3.4	0	4	18	9	9	4	8	6	8	10	10	1	1
45	University of Minnesota Amplatz Children's Hospital	49.9	0.9	17	50	13	2	16	12	2.7	1	4	16	9	10	4	8	6	9	10	10	1	1
46	Penn State Hershey Children's Hospital	49.5	0.0	13	40	13	4	16	11	2.7	1	3	18	9	10	4	8	6	8	10	9	0	1
47	Steven and Alexandra Cohen Children's Medical Center	49.3	1.6	20	58	13	2	24	18	3.3	0	4	17	9	10	4	8	6	9	10	11	1	1
48	University of California Davis Children's Hospital	47.5	0.0	16	57	14	2	16	11	4.2	0	4	17	9	10	6	8	6	9	10	10	1	1
49	Children's Hospital of Orange County	47.0	2.6	18	46	12	2	29	19	2.4	1	4	16	9	10	4	8	6	8	10	10	0	1
50	Miami Children's Hospital	46.9	3.3	18	58	14	2	30	12	3.1	1	3	15	9	6	6	8	6	8	4	9	0	1

Top 5%

Top 10%

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

**Pediatric Rankings 2012--  
Gastroenterology**

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Survival after liver transplant	Success in reducing ICU infections	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Committing to clinical research
1	Children's Hospital of Philadelphia	100.0	78.7	26	3	7	59	5	16	3.4	1	4	8	10	10	9	8	6	7	10	8	1	4
2	Boston Children's Hospital	95.6	72.9	26	3	5	54	7	16	3.7	1	4	8	10	10	9	8	6	7	10	8	1	4
3	Cincinnati Children's Hospital Medical Center	93.6	81.3	23	2	7	53	7	15	3.4	1	4	8	10	10	9	8	6	8	10	8	1	4
4	Texas Children's Hospital	92.5	43.1	29	3	6	46	8	17	2.9	1	4	8	10	10	9	8	6	8	10	8	1	4
5	Nationwide Children's Hospital	88.6	36.5	26	3	8	53	8	14	2.5	1	NA	8	10	10	9	8	6	5	10	8	1	4
6	Children's Hospital of Pittsburgh of UPMC	79.8	31.3	20	3	7	45	6	8	3.0	0	4	8	10	10	8	8	6	6	10	8	1	4
7	Children's Hospital Los Angeles	78.0	13.2	23	3	7	51	6	12	3.0	1	4	8	10	10	9	8	6	5	10	8	1	4
8	Ann and Robert H. Lurie Children's Hospital of Chicago	76.9	15.2	23	3	6	47	5	12	3.2	1	4	8	10	10	9	7	6	6	10	8	1	4
9	Children's Hospital Cleveland Clinic	75.1	7.1	30	3	7	48	4	12	3.1	1	3	8	10	10	9	8	6	7	10	8	1	3
10	Children's Hospital Colorado	73.0	44.3	24	2	2	45	6	11	3.2	1	3	8	10	9	8	8	6	8	10	8	1	4
11	Children's Healthcare of Atlanta	70.9	7.4	18	3	7	55	8	14	3.5	0	4	8	10	10	8	8	6	8	10	8	1	4
12	Lucile Packard Children's Hospital at Stanford	69.6	12.0	22	3	6	39	7	12	3.1	0	4	8	10	10	9	8	6	6	10	7	1	3
13	Mattel Children's Hospital UCLA	68.9	14.7	23	3	4	33	4	12	2.4	1	4	8	10	10	9	8	6	5	6	8	1	4
14	Seattle Children's Hospital	68.1	9.0	26	2	7	48	5	4	2.9	1	4	7	10	10	9	8	6	6	10	8	1	4
15	Children's Medical Center Dallas	67.4	3.5	20	3	6	45	5	12	3.1	1	4	8	10	10	9	8	6	6	10	8	1	4
16	Children's National Medical Center	63.3	2.5	26	2	6	39	7	10	3.2	1	4	8	10	10	9	8	6	8	10	8	1	4
17	Alfred I. duPont Hospital for Children	62.4	5.3	30	3	4	39	5	6	3.3	0	3	8	10	10	9	8	6	8	10	8	1	3
18	NY-Presby. Morgan Stanley-Komansky Children's Hospital	62.1	10.3	22	2	5	47	8	12	2.9	0	4	8	10	10	9	8	6	7	10	8	1	4
18	St. Louis Children's Hospital-Washington University	62.1	8.6	22	2	5	32	6	8	2.9	1	4	8	10	10	7	8	6	8	10	8	1	3
20	UCSF Benioff Children's Hospital	60.8	9.5	22	3	5	30	1	5	3.5	0	4	7	10	9	9	8	6	7	1	8	1	4
21	Mount Sinai Kravis Children's Hospital	59.7	3.4	25	2	7	33	7	5	1.9	1	3	7	10	8	8	8	6	5	10	8	1	4
22	Riley Hospital for Children Indiana University Health	56.0	3.8	26	1	6	49	7	15	3.5	1	2	8	10	10	9	8	6	7	4	8	1	4
22	Yale-New Haven Children's Hospital	56.0	0.7	21	2	8	16	2	5	2.5	1	4	8	9	9	5	8	6	6	10	8	1	4
24	Johns Hopkins Children's Center	55.2	15.1	16	1	4	45	5	9	3.5	1	2	8	10	10	9	8	6	7	7	8	1	4
25	North Carolina Children's Hospital at UNC	55.1	0.5	21	3	6	34	2	11	2.7	1	2	6	10	10	9	7	6	5	10	8	0	4
26	Levine Children's Hospital	54.9	0.0	26	3	7	20	5	10	2.7	0	3	7	10	10	6	8	6	6	9	8	0	4
27	Shands Hospital for Children at the University of Florida	53.3	1.8	14	2	7	26	6	8	2.2	1	3	5	9	9	8	8	6	5	10	8	1	4
28	Children's Mercy Hospitals and Clinics	52.8	1.2	22	2	4	47	3	11	3.8	1	2	8	10	10	9	8	6	7	10	8	1	3
29	Massachusetts General Hospital for Children	52.7	3.9	22	3	1	37	4	8	1.9	1	2	7	10	10	8	8	6	6	10	8	1	4
30	Rady Children's Hospital	52.5	1.1	26	1	9	39	5	10	3.0	0	2	8	10	10	9	8	6	4	10	8	1	4
31	Arnold Palmer Medical Center	52.4	0.5	19	3	7	35	4	9	1.7	0	NA	7	10	8	7	8	6	6	10	7	1	3
32	American Family Children's Hospital	52.3	0.2	20	3	6	18	2	5	3.6	1	3	8	10	9	6	8	6	5	10	8	0	2
33	Monroe Carell Jr. Children's Hospital at Vanderbilt	51.5	2.2	21	1	6	39	5	11	3.5	1	2	8	10	10	9	7	6	6	10	8	1	4
34	University of Michigan C.S. Mott Children's Hospital	51.4	1.1	30	2	3	46	8	12	3.8	0	4	6	10	10	8	8	6	7	10	8	1	3
35	University of Iowa Children's Hospital	51.0	1.0	22	3	2	24	4	7	2.5	1	2	8	10	10	9	8	6	4	10	8	1	4
36	Children's Memorial Hermann Hospital	50.3	0.0	11	3	6	27	7	11	5.2	0	2	6	10	9	5	8	6	4	4	7	1	4
37	University of Chicago Comer Children's Hospital	49.8	2.5	11	3	6	41	7	8	2.0	0	3	7	10	9	8	8	3	2	6	7	1	4
38	Rush Children's Hospital	49.7	0.0	19	3	6	22	6	4	2.4	1	2	6	10	8	9	8	4	4	10	7	0	3
39	Holtz Children's Hospital at UM-Jackson Memorial Hospital	48.9	0.0	19	2	7	26	7	6	2.2	0	4	8	10	8	7	8	6	3	10	8	1	4
40	University of Minnesota Amplatz Children's Hospital	48.7	0.7	13	2	5	31	5	7	2.7	1	3	7	10	10	7	8	6	6	10	7	1	4
41	University of Rochester-Golisano Children's Hospital	48.4	0.3	14	3	5	19	2	8	2.3	1	2	7	10	10	5	6	6	4	10	8	1	2
42	Duke Children's Hospital and Health Center	47.5	1.1	15	2	6	35	5	9	2.4	1	4	7	10	10	7	8	6	2	10	8	0	4
43	Mayo Eugenio Litta Children's Hospital	47.3	2.5	20	1	5	35	4	12	3.4	1	2	8	10	10	7	8	5	6	10	7	1	4
44	Children's Hospital of Alabama at UAB	46.9	0.8	15	2	3	28	6	11	2.7	1	3	8	10	9	9	8	6	6	9	8	1	4
45	Primary Children's Medical Center	46.6	1.0	20	2	3	38	6	9	4.8	0	4	7	10	10	8	8	6	7	4	8	1	4
46	Miami Children's Hospital	46.2	2.6	15	3	4	32	2	11	3.1	1	NA	8	10	9	8	8	6	3	4	7	0	3
47	Vermont Children's Hospital at Fletcher Allen Health Care	44.4	0.0	20	3	7	18	1	5	1.3	0	NA	6	9	9	4	8	6	7	10	7	0	3
48	Women and Children's Hospital of Buffalo	41.7	0.6	15	3	5	21	0	5	2.8	0	NA	7	10	8	7	8	6	3	1	7	1	4
49	Medical University of South Carolina Children's Hospital	41.1	0.4	24	3	5	11	5	7	2.9	0	2	5	10	10	3	8	4	4	10	7	0	0
50	Rainbow Babies and Children's Hospital	39.1	2.5	13	NR	8	27	4	10	2.8	1	NA	7	10	10	8	8	6	4	10	8	1	1
51	Children's Hospital of Orange County	37.7	0.7	22	NR	7	36	5	11	2.4	1	NA	7	10	10	8	8	6	5	10	7	0	4
52	Maria Fareri Children's Hospital at Westchester Medical Center	37.6	0.0	15	3	2	22	4	6	2.2	0	2	6	9	9	8	8	4	4	6	7	1	4

Top 5%

Top 10%

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

## Pediatric Rankings 2012--Neonatology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Success in reducing ICU infections	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship programs	Committing to clinical research
1	Cincinnati Children's Hospital Medical Center	100.0	39.8	18	28	13	18	3.5	1	4	5	7	5	12	17	7	10	10	15	13	4
2	Texas Children's Hospital	97.5	30.8	23	30	13	16	3.0	1	4	5	7	5	12	16	7	10	10	15	15	4
3	Boston Children's Hospital	94.9	54.5	21	33	10	17	3.7	1	4	5	7	5	12	16	7	10	10	15	15	3
4	Children's Hospital of Philadelphia	94.7	64.9	21	32	9	20	3.3	1	4	5	7	5	11	17	7	10	10	15	15	4
5	Rainbow Babies and Children's Hospital	91.4	31.1	14	30	13	10	2.5	1	4	5	7	5	12	17	7	10	10	15	10	4
6	Children's National Medical Center	89.3	16.4	19	29	14	18	2.9	1	4	5	7	5	12	17	7	8	10	15	10	4
7	Children's Hospital Los Angeles	87.0	11.6	19	32	14	15	3.7	1	3	5	7	5	12	17	7	10	10	15	10	4
8	Monroe Carell Jr. Children's Hospital at Vanderbilt	84.7	8.3	14	30	14	20	4.1	1	4	5	7	5	12	16	7	10	10	15	11	4
9	Children's Hospital of Pittsburgh of UPMC	84.6	11.3	17	31	15	15	3.2	0	4	5	7	5	12	17	7	9	10	15	14	4
10	Johns Hopkins Children's Center	80.9	18.0	14	28	13	10	2.8	1	4	5	7	5	11	14	6	8	7	15	13	4
11	Duke Children's Hospital and Health Center	79.9	5.6	16	31	15	12	2.6	1	4	5	7	5	12	16	7	9	10	15	6	4
12	NY-Presby. Morgan Stanley-Komansky Children's Hospital	79.7	24.8	15	29	12	15	2.4	0	4	5	7	5	12	16	7	10	10	15	12	4
13	Nationwide Children's Hospital	79.0	9.4	19	31	12	20	2.5	1	4	5	7	5	12	17	7	10	10	15	15	4
14	St. Louis Children's Hospital-Washington University	78.9	16.7	17	30	11	15	2.7	1	4	5	7	5	12	17	7	10	10	15	13	4
15	Ann and Robert H. Lurie Children's Hospital of Chicago	78.0	12.0	16	29	12	13	2.6	1	4	5	7	5	12	15	7	10	10	15	14	4
16	Lucile Packard Children's Hospital at Stanford	76.9	23.2	15	31	12	13	1.8	0	4	5	7	5	12	16	7	10	10	14	10	4
17	Seattle Children's Hospital	75.8	12.4	21	30	11	18	3.6	1	4	4	7	5	11	15	6	10	10	15	14	3
18	Cook Children's Medical Center	72.8	1.3	22	24	15	14	3.7	1	4	5	7	4	9	17	7	9	10	15	0	4
19	University of Iowa Children's Hospital	72.7	4.1	19	30	13	13	2.2	1	4	5	7	5	12	17	7	10	10	15	9	4
20	Children's Hospital Colorado	72.4	14.7	19	29	10	16	3.2	1	3	5	7	4	12	17	7	9	10	15	12	4
21	Rady Children's Hospital	71.1	3.6	19	31	13	16	4.9	0	4	5	7	5	12	17	7	8	10	15	12	4
22	University of Minnesota Amplatz Children's Hospital	70.6	1.7	14	29	14	11	2.6	1	4	4	7	5	11	16	7	10	10	14	11	4
23	University of Michigan C.S. Mott Children's Hospital	70.0	5.8	23	29	12	16	3.2	0	4	5	7	5	12	17	7	10	10	15	14	4
24	Miami Children's Hospital	69.3	6.2	15	23	14	7	3.9	1	4	5	7	4	12	15	6	9	4	14	3	3
25	Advocate Hope Children's Hospital	68.4	1.2	21	20	15	11	2.2	1	4	5	7	4	10	16	7	10	10	14	2	3
26	Children's Medical Center-Parkland Memorial Hospital	64.8	5.6	18	32	10	15	2.6	1	4	5	7	5	12	17	7	9	10	15	12	4
27	University of Rochester-Golisano Children's Hospital	64.7	2.7	15	28	13	10	2.9	1	4	3	7	4	11	14	7	10	10	15	9	3
28	American Family Children's Hospital	62.4	0.0	16	24	15	5	2.0	1	4	5	7	5	9	16	7	8	10	15	6	1
29	Children's Mercy Hospitals and Clinics	61.5	2.8	21	29	10	19	3.2	1	4	5	7	5	10	16	7	10	10	15	8	4
30	Akron Children's Hospital	61.4	0.5	21	27	13	10	2.3	1	3	5	7	4	12	16	7	10	9	15	1	4
31	Mattel Children's Hospital UCLA	61.0	8.9	16	27	9	11	3.4	1	4	5	7	4	12	16	7	10	6	15	11	4
32	Riley Hospital for Children Indiana University Health	60.9	3.3	21	29	10	18	2.8	1	4	5	7	5	12	17	7	10	4	15	11	4
33	Mayo Eugenio Litta Children's Hospital	60.2	1.2	19	32	12	7	3.2	1	4	5	7	4	10	16	6	8	10	15	8	3
34	Alfred I. duPont Hospital for Children	60.1	0.8	23	28	13	10	2.7	0	4	5	7	5	11	17	7	10	10	15	6	3
35	Steven and Alexandra Cohen Children's Medical Center	59.7	0.7	17	31	13	11	2.2	0	4	5	7	5	11	16	7	10	10	15	8	4
36	Children's Hospitals and Clinics of Minnesota	59.3	3.6	15	25	12	18	2.8	0	4	4	7	5	11	17	7	10	10	15	5	4
37	North Carolina Children's Hospital at UNC	59.2	1.9	14	28	12	9	3.1	1	3	4	7	5	12	15	7	9	10	15	6	3
37	Shands Hospital for Children at the University of Florida	59.2	0.0	15	31	13	11	2.6	1	3	4	6	4	10	16	7	9	10	15	8	3
39	Children's Healthcare of Atlanta	58.8	2.9	16	27	11	18	2.8	0	4	5	7	5	12	16	7	10	10	15	13	4
40	UCSF Benioff Children's Hospital	57.9	13.8	18	31	9	16	3.1	0	4	4	7	5	12	15	6	9	1	15	12	4
41	Holtz Children's Hospital at UM-Jackson Memorial Hospital	57.5	4.7	13	27	12	7	2.0	0	3	4	7	5	12	16	7	9	10	15	11	4
42	Doernbecher Children's Hospital	57.3	0.7	17	28	13	9	2.3	0	4	5	7	5	11	16	7	9	10	15	5	4
43	Levine Children's Hospital	57.0	0.8	19	25	14	11	2.4	0	3	3	7	5	9	16	7	10	9	15	0	4
44	Children's Hospital Cleveland Clinic	56.6	2.0	23	33	9	13	2.9	1	4	5	7	5	12	17	7	9	10	15	8	4
45	Rush Children's Hospital	56.3	0.0	12	19	14	5	2.2	1	3	4	7	5	10	16	5	10	10	14	4	3
46	Children's Hospital of Michigan	55.8	1.4	19	30	10	13	2.5	1	4	5	7	5	11	16	7	8	10	15	8	4
47	Yale-New Haven Children's Hospital	55.0	1.3	17	27	10	8	2.8	1	4	5	7	5	7	16	7	10	10	15	12	4
48	Children's Hospital of Alabama at UAB	54.7	3.4	12	30	9	20	2.7	1	3	5	7	5	12	17	7	9	9	15	10	4
49	University of Chicago Comer Children's Hospital	54.4	1.7	12	25	13	11	2.7	0	4	5	7	5	12	16	4	7	6	15	9	4
50	Phoenix Children's Hospital	53.9	0.0	18	24	13	14	2.8	0	3	5	7	4	12	16	5	9	10	15	4	4
51	Connecticut Children's Medical Center	53.1	0.5	17	25	14	10	2.4	0	3	5	7	4	9	14	7	8	10	15	4	3

Top 5%

Top 10%

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

## Pediatric Rankings 2012--Nephrology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Survival after kidney transplant	Managing dialysis patients	Preventing biopsy complications	Success in reducing ICU infections	Success in preventing dialysis-related infections	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Committing to clinical research	
1	Boston Children's Hospital	100.0	68.1	41	25	22	20	3	8	28	7	10	4	5	3.7	1	8	7	9	1	12	6	9	10	8	1	8		
2	Children's Hospital of Philadelphia	94.8	46.7	45	24	23	19	3	4	6	28	10	7	8	3	3.4	1	6	8	9	1	11	6	9	10	8	1	9	
3	Cincinnati Children's Hospital Medical Center	92.9	60.7	38	24	22	18	2	4	8	18	9	11	4	5	3.4	1	4	8	9	1	12	6	9	10	7	1	9	
4	Seattle Children's Hospital	92.6	61.1	44	21	24	16	2	4	8	21	7	11	8	5	2.9	1	3	6	9	1	12	6	9	10	8	1	9	Top 5%
5	Texas Children's Hospital	82.1	34.5	40	24	24	13	2	3	8	20	9	14	7	4	2.9	1	4	8	9	1	12	6	9	10	8	1	6	
6	Children's Mercy Hospitals and Clinics	76.7	22.0	45	24	24	18	2	1	8	23	8	8	8	3	3.8	1	2	8	9	1	12	6	9	10	8	1	8	
7	Ann and Robert H. Lurie Children's Hospital of Chicago	74.2	12.5	40	25	22	18	3	3	5	25	10	13	5	4	3.2	1	5	8	9	1	11	6	9	10	8	1	6	
8	Children's Medical Center Dallas	74.1	8.8	41	24	23	17	3	3	7	24	10	17	5	5	3.1	1	3	8	9	1	12	6	8	10	8	1	6	Top 10%
9	Nationwide Children's Hospital	73.9	14.9	43	24	22	19	3	5	4	20	9	11	3	2	2.5	1	3	8	9	1	12	6	9	10	7	1	6	
10	Mattel Children's Hospital UCLA	72.2	24.2	37	22	23	14	3	NR	8	10	10	12	7	3	2.4	1	6	8	9	1	11	6	9	6	8	1	7	
11	Children's Hospital of Pittsburgh of UPMC	71.8	12.9	41	25	20	19	3	5	8	19	6	9	4	4	3.0	0	7	8	9	1	12	6	8	10	7	1	3	
12	Children's Healthcare of Atlanta	71.6	11.1	30	22	21	11	3	4	8	33	7	12	8	6	3.5	0	6	7	9	1	12	6	9	10	8	1	10	
12	Lucile Packard Children's Hospital at Stanford	71.6	34.1	29	23	24	11	2	3	7	18	9	12	7	5	3.1	0	5	6	9	1	12	6	9	10	7	1	6	
14	Children's National Medical Center	67.9	7.4	36	25	21	15	3	3	8	18	9	13	5	3	3.2	1	3	6	9	1	12	6	9	10	8	1	5	
15	Rainbow Babies and Children's Hospital	65.6	5.9	36	22	22	18	3	5	5	15	9	10	2	2	2.8	1	5	6	9	1	12	6	9	10	7	1	6	
16	Johns Hopkins Children's Center	65.1	20.1	37	23	21	17	3	NR	7	14	5	8	3	2	3.5	1	3	6	9	1	11	6	9	7	8	1	6	
17	Rady Children's Hospital	63.5	2.2	43	24	22	18	3	6	7	19	8	11	4	3	3.0	0	5	8	9	1	12	6	8	10	7	1	4	
18	Riley Hospital for Children Indiana University Health	62.3	4.0	43	23	22	19	3	4	6	24	9	15	3	4	3.5	1	2	8	9	1	12	6	9	4	8	0	5	
19	University of Minnesota Amplatz Children's Hospital	62.2	10.6	26	21	22	18	1	3	9	20	7	12	5	3	2.7	1	6	7	9	1	10	6	9	10	8	1	2	
20	University of Iowa Children's Hospital	60.4	3.6	43	25	22	18	3	1	6	21	4	8	3	3	2.5	1	8	7	9	1	12	6	9	10	8	1	8	
21	Children's Hospital Los Angeles	60.0	6.6	32	23	22	12	3	4	7	20	9	14	4	3	3.0	1	2	8	9	1	11	6	9	10	8	0	3	
22	Children's Hospital of Alabama at UAB	59.4	2.9	33	25	24	18	2	2	4	24	10	9	8	5	2.7	1	7	8	9	1	12	6	8	9	7	1	8	
23	UCSF Benioff Children's Hospital	59.2	5.2	36	24	24	15	3	3	6	27	6	13	7	5	3.5	0	8	5	9	1	12	6	9	1	8	1	4	
24	Children's Hospital at Montefiore	58.4	11.2	43	24	21	10	3	2	6	14	7	12	3	2	3.1	0	5	8	9	1	12	6	9	10	8	1	7	
25	Children's Memorial Hermann Hospital	57.0	1.6	29	24	24	20	3	3	7	31	8	13	3	2	5.2	0	1	8	9	1	11	6	9	4	7	1	3	
26	Holtz Children's Hospital at UM-Jackson Memorial Hospital	55.8	2.7	35	24	22	16	3	4	8	16	9	12	2	2	2.2	0	1	8	9	1	12	6	8	10	7	1	5	
27	Shands Hospital for Children at the University of Florida	55.4	3.1	22	21	22	13	3	4	7	17	6	7	4	3	2.2	1	2	6	8	1	12	6	9	10	7	1	5	
28	Mayo Eugenio Litta Children's Hospital	55.1	1.4	27	21	23	20	3	5	3	29	4	10	5	2	3.4	1	11	6	9	1	10	5	9	10	7	0	3	
29	Mount Sinai Kravis Children's Hospital	54.9	2.5	43	23	20	18	3	4	4	17	3	5	2	3	1.9	1	9	7	9	1	12	6	8	10	7	1	2	
30	Yale-New Haven Children's Hospital	54.6	0.4	37	20	24	18	3	5	7	12	4	5	2	1	2.5	1	4	6	8	1	10	6	9	10	7	1	1	
31	Akron Children's Hospital	54.5	1.0	43	21	24	18	3	3	9	13	8	8	2	2	3.3	1	4	4	9	1	12	6	9	9	7	0	2	
32	Duke Children's Hospital and Health Center	54.2	1.9	40	19	24	20	3	4	9	15	6	6	2	2	2.4	1	1	5	9	1	12	6	6	10	8	0	2	
33	Cook Children's Medical Center	53.8	1.2	31	18	21	13	3	4	9	17	8	8	3	2	3.4	1	5	8	9	1	12	6	9	10	8	0	1	
34	St. Louis Children's Hospital-Washington University	53.7	4.9	40	25	22	12	3	NR	6	17	4	8	3	2	2.9	1	6	6	9	1	12	6	9	10	8	1	7	
35	North Carolina Children's Hospital at UNC	52.7	1.4	31	21	19	15	3	4	4	15	7	8	5	3	2.7	1	3	5	9	1	11	6	9	10	8	1	6	
36	Children's Hospital Cleveland Clinic	51.6	0.6	47	23	12	20	3	4	6	29	7	6	5	1	3.1	1	2	6	9	1	12	6	9	10	8	0	4	
37	NY-Presby. Morgan Stanley-Komansky Children's Hospital	50.4	3.1	36	25	24	17	3	2	7	14	6	6	3	4	2.9	0	7	8	9	1	12	6	8	10	8	0	3	
37	University of Michigan C.S. Mott Children's Hospital	50.4	7.7	43	22	23	14	2	NR	6	16	7	9	4	2	3.8	0	5	7	9	1	11	6	9	10	8	1	6	
39	Phoenix Children's Hospital	50.0	2.5	41	22	24	16	3	NR	8	28	10	13	6	2	3.7	0	3	8	9	1	12	5	8	10	7	0	5	
40	Le Bonheur Children's Hospital	49.9	2.1	38	22	24	13	3	5	4	13	6	6	4	1	2.6	0	4	8	9	1	12	6	9	10	7	1	3	
41	Levine Children's Hospital	49.6	0.9	41	22	19	14	3	4	8	17	9	12	6	2	2.7	0	4	5	9	1	11	6	9	9	7	0	7	
42	Children's Hospital of Michigan	49.2	1.6	37	23	16	15	3	3	3	22	11	11	4	2	2.4	1	0	6	9	1	10	6	9	10	7	1	6	
43	Helen DeVos Children's Hospital	48.0	1.5	35	23	24	14	3	4	5	18	6	7	4	1	2.5	1	1	6	8	1	12	6	9	10	7	0	3	
44	Monroe Carell Jr. Children's Hospital at Vanderbilt	47.2	1.8	31	21	21	18	2	3	6	21	6	11	3	2	3.5	1	3	6	9	1	9	6	9	10	8	0	3	
45	Primary Children's Medical Center	46.7	2.7	33	24	16	16	3	2	7	24	8	8	3	3	4.8	0	6	8	9	1	11	6	9	4	8	0	3	
46	Children's Hospital Colorado	44.4	1.3	36	21	22	13	3	NR	6	30	8	7	2	3	3.2	1	1	8	9	1	12	6	9	10	7	0	4	
46	University of California Davis Children's Hospital	44.4	1.2	22	17	18	17	3	3	9	21	5	9	5	2	4.2	0	6	6	9	1	11	6	7	10	7	0	0	
48	Steven and Alexandra Cohen Children's Medical Center	42.3	2.4	41	19	NR	20	3	3	8	17	7	7	2	2	3.3	0	9	7	9	1	11	6	9	10	7	0	4	
49	Miami Children's Hospital	42.1	0.4	36	19	12	19	3	4	5	15	10	11	5	1	3.1	1	2	7	9	1	8	6	8	4	7	0	1	
50	Alfred I. duPont Hospital for Children	40.7	0.4	47	25	24	18	3	NR	4	17	6	7	2	2	3.3	0	7	8	9	1	12	6	9	10	8	0	2	
51	Kosair Children's Hospital	40.2	0.0	39	17	23	16	2	4	2	19	8	7	2	2	2.9	1	2	8	9	1								

## Pediatric Rankings 2012--Neurology & Neurosurgery

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Surgical survival	Epilepsy management	Preventing surgical complications	Clinic 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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship programs	Committing to clinical research
1	Boston Children's Hospital	100.0	74.6	27	15	12	6	3	42	27	14	3.7	1	18	9	7	15	8	6	9	10	12	2	4
2	Children's Hospital of Philadelphia	90.4	58.4	26	13	11	5	3	40	27	12	3.4	1	13	9	7	14	8	6	9	10	11	2	4
3	Children's Hospital Cleveland Clinic	89.5	24.2	28	15	12	6	5	37	28	15	3.1	1	18	9	7	15	8	6	9	10	11	2	4
4	Cincinnati Children's Hospital Medical Center	88.6	26.2	24	15	12	6	5	28	21	14	3.4	1	18	9	7	15	8	6	9	10	12	2	4
5	Johns Hopkins Children's Center	88.3	47.9	20	15	12	4	5	21	22	10	3.5	1	17	9	6	15	8	6	9	7	12	2	4
5	Texas Children's Hospital	88.3	30.7	28	15	12	6	4	30	21	14	2.9	1	18	9	7	15	8	6	9	10	11	2	4
7	St. Louis Children's Hospital-Washington University	88.1	26.1	22	15	12	7	5	33	21	10	2.9	1	17	9	6	15	8	6	9	10	12	2	4
8	Seattle Children's Hospital	87.0	15.5	27	13	12	7	7	29	23	12	2.9	1	16	9	7	13	8	6	9	10	11	2	4
9	Children's National Medical Center	86.0	18.4	25	15	12	7	6	33	22	13	3.2	1	17	9	6	15	8	6	9	10	12	1	4
10	Nationwide Children's Hospital	82.2	7.5	25	15	12	8	6	35	20	14	2.5	1	18	9	6	15	8	6	9	10	12	2	4
11	Miami Children's Hospital	76.5	11.6	21	15	12	6	6	32	23	14	3.1	1	17	9	6	15	8	6	8	4	11	1	4
12	Children's Medical Center Dallas	76.1	4.8	24	15	12	5	7	31	27	10	3.1	1	17	9	6	15	8	6	8	10	12	2	4
13	Ann and Robert H. Lurie Children's Hospital of Chicago	75.4	16.9	22	14	11	5	2	43	28	14	3.2	1	18	9	7	15	7	6	9	10	11	2	4
14	Riley Hospital for Children Indiana University Health	74.5	1.6	26	15	12	8	6	29	31	15	3.5	1	17	9	6	12	8	6	9	4	12	2	3
15	Children's Hospital of Pittsburgh of UPMC	73.4	15.5	22	15	12	3	6	29	27	12	3.0	0	18	9	7	14	8	6	8	10	12	2	4
16	Mayo Eugenio Litta Children's Hospital	72.4	10.3	25	15	12	6	4	22	17	11	3.4	1	18	9	5	15	8	5	9	10	11	1	4
17	NY-Presby. Morgan Stanley-Komansky Children's Hospital	71.9	18.1	21	15	10	4	6	23	22	9	2.9	0	17	9	6	13	8	6	9	10	12	2	4
18	Children's Hospital Los Angeles	71.3	13.4	25	10	12	2	6	25	24	9	3.0	1	13	9	6	12	8	6	9	10	11	2	4
19	Children's Hospital Colorado	70.6	9.8	23	14	10	6	3	23	18	12	3.2	1	15	9	7	14	8	6	9	10	12	2	4
20	Mattel Children's Hospital UCLA	70.5	7.7	22	14	12	8	3	20	18	9	2.4	1	16	9	6	14	8	6	9	6	11	2	4
21	University of Michigan C.S. Mott Children's Hospital	70.4	3.4	29	14	12	7	6	27	20	6	3.8	0	17	9	6	14	8	6	9	10	11	2	4
22	Children's Hospital at Montefiore	69.0	3.4	25	15	12	6	7	20	11	7	3.1	0	18	9	7	14	8	6	9	10	12	2	4
23	Le Bonheur Children's Hospital	67.7	4.6	22	15	12	7	5	23	16	12	2.6	0	13	9	7	15	8	6	9	10	12	2	4
24	University of Iowa Children's Hospital	66.8	0.4	25	13	10	8	6	18	14	6	2.5	1	14	9	6	15	8	6	9	10	11	2	4
25	Joseph M. Sanzari Children's Hospital	66.7	0.6	19	13	12	8	5	16	22	10	4.2	1	18	8	7	15	8	6	9	10	12	1	2
25	Rainbow Babies and Children's Hospital	66.7	10.1	20	15	10	5	4	22	17	13	2.8	1	17	9	6	15	8	6	9	10	11	1	3
27	Rady Children's Hospital	66.6	1.1	25	15	12	8	4	28	28	14	3.0	0	15	9	7	15	8	6	8	10	12	2	4
28	Cook Children's Medical Center	66.2	0.8	28	15	12	6	5	27	22	14	3.4	1	17	9	6	14	8	6	9	10	12	0	4
29	Kosair Children's Hospital	66.1	0.8	25	14	11	6	7	13	17	11	2.9	1	18	9	7	12	8	6	9	9	12	1	3
30	Children's Hospital of Alabama at UAB	65.3	12.0	17	15	12	5	1	20	20	12	2.7	1	12	9	7	14	8	6	8	9	11	2	4
31	Children's Hospital of Michigan	64.0	1.8	24	15	12	7	2	27	23	16	2.4	1	17	9	7	14	8	6	9	10	11	1	4
32	Children's Healthcare of Atlanta	63.8	4.0	22	12	12	5	5	33	28	14	3.5	0	14	9	7	14	8	6	9	10	12	1	4
33	Primary Children's Medical Center	61.5	16.3	22	14	10	5	0	19	22	13	4.8	0	16	9	7	12	8	6	9	4	12	2	4
34	Duke Children's Hospital and Health Center	61.4	1.2	21	12	12	5	6	18	23	7	2.4	1	15	9	6	12	8	6	8	10	11	1	4
35	Lucile Packard Children's Hospital at Stanford	60.8	5.8	21	15	11	5	6	13	16	6	3.1	0	17	9	6	8	8	6	9	10	11	1	4
36	UCSF Benioff Children's Hospital	60.3	16.5	22	13	12	3	5	13	13	6	3.5	0	12	9	7	12	8	6	8	1	11	1	4
37	Akron Children's Hospital	59.6	0.4	27	14	12	6	3	37	16	8	3.3	1	16	9	7	15	8	6	9	9	11	0	4
38	Wolfson Children's Hospital	59.4	0.0	19	14	12	6	4	17	11	10	3.4	1	17	9	4	15	8	6	9	10	12	1	4
39	Gillette Children's Specialty Healthcare	59.3	1.2	24	15	12	2	6	33	21	5	4.2	1	18	9	6	15	8	6	8	10	12	0	3
40	Phoenix Children's Hospital	58.7	1.5	23	11	11	6	5	31	24	11	3.7	0	16	9	6	13	8	5	8	10	12	1	4
41	Monroe Carell Jr. Children's Hospital at Vanderbilt	58.4	0.5	19	14	12	4	2	33	15	12	3.5	1	18	9	7	15	7	6	9	10	12	2	4
42	Children's Mercy Hospitals and Clinics	57.5	0.0	25	13	11	5	4	14	14	9	3.8	1	17	9	7	13	8	6	9	10	11	1	3
43	Children's Hospital of Orange County	57.1	2.3	25	14	10	4	5	20	18	16	2.4	1	15	9	6	13	8	6	9	10	11	1	1
44	University of Rochester-Golisano Children's Hospital	56.2	2.8	14	12	12	4	5	19	10	7	2.3	1	14	9	6	14	6	6	8	10	11	1	4
45	Alfred I. duPont Hospital for Children	54.2	0.2	29	12	12	4	7	21	12	9	3.3	0	14	9	5	14	8	6	9	10	11	0	3
46	Doernbecher Children's Hospital	52.7	2.1	22	13	11	5	3	19	17	8	3.4	0	18	9	7	12	8	6	8	10	11	1	4
47	North Carolina Children's Hospital at UNC	51.9	1.3	17	12	9	2	5	25	17	7	2.7	1	16	9	7	15	7	6	9	10	11	1	4
48	Steven and Alexandra Cohen Children's Medical Center	49.8	2.5	23	15	6	4	5	15	24	11	3.3	0	18	9	7	11	8	6	9	10	12	1	2
49	Massachusetts General Hospital for Children	48.8	5.2	24	11	9	2	2	14	13	9	1.9	1	14	9	7	13	8	6	9	10	11	1	4
49	Shands Hospital for Children at the University of Florida	48.8	0.5	21	13	12	3	3	11	13	8	2.2	1	17	8	7	9	8	6	9	10	11	1	3

Top 5%  
Top 10%

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

### Pediatric Rankings 2012--Orthopedics

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Preventing surgical complications	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Committing to clinical research
1	Children's Hospital of Philadelphia	100.0	63.7	24	15	9	22	45	3.4	1	6	9	3	8	8	6	9	10	16	1	1
2	Rady Children's Hospital	99.2	51.9	22	15	12	22	40	3.0	0	6	9	3	8	8	6	8	10	16	1	1
3	Boston Children's Hospital	98.7	73.1	24	15	8	26	36	3.7	1	6	9	3	8	8	6	9	10	15	1	1
4	Cincinnati Children's Hospital Medical Center	97.7	30.4	21	15	12	12	37	3.4	1	6	9	3	8	8	6	9	10	16	1	1
5	Children's Medical Center-Texas Scottish Rite Hospital for Children	97.3	63.1	21	15	9	21	38	3.1	1	6	9	3	8	8	6	8	10	15	1	1
6	Children's Hospital Los Angeles	94.2	32.0	22	14	12	23	35	3.0	1	6	9	3	8	8	6	9	10	16	0	1
7	Alfred I. duPont Hospital for Children	87.4	22.2	26	15	11	17	38	3.3	0	6	9	3	8	8	6	9	10	16	1	1
8	St. Louis Children's-Washington University-Shriners Hospital	87.2	16.8	20	15	11	19	30	2.9	1	5	9	3	8	8	6	9	10	16	1	1
9	Children's Hospital Colorado	84.2	13.4	20	14	10	24	39	3.2	1	6	9	3	8	8	6	9	10	16	1	1
10	Ann and Robert H. Lurie Children's Hospital of Chicago	83.0	8.0	19	14	12	13	26	3.2	1	6	9	3	8	7	6	9	10	15	1	1
10	Rainbow Babies and Children's Hospital	83.0	10.9	17	15	11	15	31	2.8	1	6	9	3	8	8	6	9	10	16	1	1
12	Gillette Children's Specialty Healthcare	80.5	3.0	21	14	12	23	26	4.2	1	5	9	3	8	8	6	8	10	15	1	1
13	NY-Presby. Morgan Stanley-Komansky Children's Hospital	78.7	8.0	18	15	12	19	26	2.9	0	6	9	3	8	8	6	9	10	16	1	1
14	University of Michigan C.S. Mott Children's Hospital	77.8	4.0	26	15	12	18	29	3.8	0	6	9	3	8	8	6	9	10	15	1	1
15	Children's Healthcare of Atlanta	77.7	21.5	19	14	8	25	48	3.5	0	6	9	3	8	8	6	9	10	16	1	1
16	Children's National Medical Center	76.1	2.5	22	14	12	25	29	3.2	1	6	9	3	8	8	6	9	10	16	0	1
17	Primary Children's Medical Center	74.8	7.5	17	11	12	14	31	4.8	0	6	9	3	6	8	6	9	4	13	1	1
18	University of Iowa Children's Hospital	73.4	3.8	22	13	12	11	17	2.5	1	6	9	3	8	8	6	9	10	16	0	1
19	Johns Hopkins Children's Center	72.5	8.9	17	13	9	16	22	3.5	1	5	9	3	7	8	6	9	7	16	1	1
20	Riley Hospital for Children Indiana University Health	71.5	3.2	24	15	11	21	25	3.5	1	6	9	3	7	8	6	9	4	16	0	1
21	Children's Hospital Cleveland Clinic	71.3	2.2	26	13	12	19	37	3.1	1	6	9	3	8	8	6	9	10	16	0	0
22	Seattle Children's Hospital	71.0	9.8	24	13	9	15	26	2.9	1	5	9	3	8	8	6	9	10	16	0	1
23	American Family Children's Hospital	68.1	0.0	19	12	12	13	15	3.6	1	6	9	3	7	8	6	8	10	16	0	1
24	Kosair Children's Hospital	67.7	0.7	23	11	12	9	12	2.9	1	6	9	3	6	8	6	9	9	16	0	1
25	Children's Hospital of Alabama at UAB	67.4	0.6	15	13	12	18	25	2.7	1	5	9	3	7	8	6	8	9	15	0	1
25	Le Bonheur Children's Hospital	67.4	1.1	19	14	11	18	33	2.6	0	6	9	3	7	8	6	9	10	15	1	1
27	Arnold Palmer Medical Center	66.7	8.3	18	13	12	6	27	1.7	0	6	9	3	3	8	6	8	10	14	1	0
28	Duke Children's Hospital and Health Center	66.6	0.4	19	11	12	12	29	2.4	1	5	9	3	7	8	6	8	10	15	0	1
29	North Carolina Children's Hospital at UNC	66.1	0.0	17	13	12	6	19	2.7	1	5	9	3	8	7	6	9	10	16	0	1
30	Monroe Carell Jr. Children's Hospital at Vanderbilt	64.4	3.1	17	14	9	18	32	3.5	1	5	9	3	7	7	6	9	10	16	0	1
31	Children's Mercy Hospitals and Clinics	64.0	1.3	24	11	9	17	29	3.8	1	6	9	3	8	8	6	9	10	15	0	1
32	Children's Hospital of Michigan	62.5	0.0	22	12	10	18	16	2.4	1	6	9	3	8	8	6	9	10	15	0	1
33	Texas Children's Hospital	62.1	7.6	26	13	5	14	24	2.9	1	6	9	3	8	8	6	9	10	15	1	1
34	Penn State Hershey Children's Hospital	61.8	0.5	11	10	12	5	21	2.7	1	5	9	3	4	8	6	8	10	14	0	1
35	Akron Children's Hospital	61.3	1.4	24	15	8	14	29	3.3	1	6	9	3	8	8	6	9	9	16	0	1
36	Nationwide Children's Hospital	61.2	2.9	22	14	6	23	31	2.5	1	6	9	3	8	8	6	9	10	15	1	1
37	Lucile Packard Children's Hospital at Stanford	61.0	1.0	18	14	12	5	19	3.1	0	6	9	3	2	8	6	9	10	15	0	1
38	University of Rochester-Golisano Children's Hospital	60.9	0.7	18	11	12	11	17	2.3	1	5	9	3	7	6	6	9	10	16	0	0
39	Children's Hospital at Montefiore	60.6	0.4	23	15	9	9	26	3.1	0	6	9	3	7	8	6	9	10	16	1	1
40	UC Davis Children's Hospital-Shriners Hospitals for Children	60.4	0.6	19	14	9	13	36	4.2	0	5	9	3	4	8	6	9	10	16	1	1
41	Levine Children's Hospital	60.0	1.4	22	15	11	5	26	2.7	0	4	9	3	6	8	6	9	9	16	0	1
42	Yale-New Haven Children's Hospital	59.4	0.0	20	12	12	7	14	2.5	1	5	8	3	5	8	6	9	10	14	0	0
43	Miami Children's Hospital	58.4	0.7	18	15	11	13	17	3.1	1	5	9	3	7	8	6	8	4	14	0	0
44	Children's Hospital of Orange County	57.9	1.2	21	12	9	13	16	2.4	1	4	9	3	6	8	6	9	10	15	0	1
45	Doernbecher Children's Hospital	56.6	0.8	20	11	12	9	20	3.4	0	5	9	3	7	8	6	7	10	14	0	0
46	Helen DeVos Children's Hospital	55.6	0.3	20	14	8	12	25	2.5	1	6	8	3	6	8	6	9	10	15	0	1
47	Holtz Children's Hospital at UM-Jackson Memorial Hospital	55.5	0.0	15	10	12	1	10	2.2	0	5	9	3	7	8	6	7	10	16	0	1
48	Mayo Eugenio Litta Children's Hospital	54.7	3.9	22	12	6	11	17	3.4	1	6	9	3	8	8	5	9	10	16	0	1
49	Bristol-Myers Squibb Children's Hospital at RWJ Univ. Hosp.	53.4	0.2	18	10	12	3	16	3.7	1	3	9	3	1	8	6	7	4	14	0	0
50	Mattel Children's Hospital UCLA	53.3	5.5	19	14	6	10	23	2.4	1	6	9	3	5	8	6	9	6	16	0	1

Top 5%

Top 10%

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

## Pediatric Rankings 2012--Pulmonology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Asthma inpatient care	Asthma management	Cystic fibrosis management	Lung disease of prematurity management	Neuromuscular weakness management	Preventing deaths of patients on ventilators	Success in reducing ICU infections	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Committing to clinical research	
1	Children's Hospital of Philadelphia	100.0	63.1	41	13	9	13	11	7	6	3	7	19	14	3.4	1	5	11	9	1	8	6	9	10	10	1	1	
2	Cincinnati Children's Hospital Medical Center	93.7	64.5	33	14	9	13	11	5	3	3	7	18	13	3.4	1	NA	11	9	1	8	6	9	10	10	1	1	
3	Texas Children's Hospital	88.1	47.0	40	14	10	10	9	3	4	3	6	18	10	2.9	1	4	10	9	1	8	6	9	10	8	1	1	
4	Boston Children's Hospital	87.5	49.3	35	14	9	12	8	6	5	3	5	17	10	3.7	1	4	11	9	1	8	6	9	10	10	1	1	
5	Rainbow Babies and Children's Hospital	81.9	26.0	34	14	9	13	8	7	4	3	8	15	8	2.8	1	1	11	9	1	8	6	9	10	10	1	1	Top 5%
6	Nationwide Children's Hospital	79.1	7.2	39	14	10	14	9	7	6	3	8	20	10	2.5	1	6	11	9	1	8	6	9	10	10	1	1	
7	Children's Hospital Colorado	78.9	56.1	37	13	10	11	8	1	2	3	2	15	12	3.2	1	NA	11	9	1	8	6	9	10	9	1	1	
8	North Carolina Children's Hospital at UNC	78.3	24.8	33	13	9	11	10	6	3	3	6	9	9	2.7	1	4	8	9	1	7	6	9	10	9	1	1	
9	St. Louis Children's Hospital-Washington University	74.4	29.8	29	12	9	15	5	5	4	3	5	12	8	2.9	1	4	9	9	1	8	6	9	10	10	1	1	Top 10%
10	Riley Hospital for Children Indiana University Health	72.4	8.4	41	14	9	14	10	7	6	3	6	17	14	3.5	1	NA	9	9	1	8	6	9	4	10	1	1	
11	Johns Hopkins Children's Center	72.0	31.2	25	14	8	9	10	4	0	3	4	13	9	3.5	1	1	11	9	1	8	6	9	7	9	1	1	
11	Seattle Children's Hospital	72.0	25.0	36	13	10	3	10	1	3	2	7	11	9	2.9	1	NA	10	9	1	8	6	9	10	10	1	1	
13	Children's Hospital of Pittsburgh of UPMC	71.8	24.8	28	14	8	12	7	7	6	2	7	20	12	3.0	0	5	10	9	1	8	6	8	10	9	1	1	
14	Children's Hospital Los Angeles	68.9	12.0	35	12	10	7	6	4	3	3	7	15	7	3.0	1	4	9	9	1	8	6	9	10	9	1	1	
15	Ann and Robert H. Lurie Children's Hospital of Chicago	66.7	6.1	36	14	10	8	9	3	5	3	6	14	11	3.2	1	NA	11	9	1	7	6	9	10	10	1	1	
16	NY-Presby. Morgan Stanley-Komansky Children's Hospital	65.3	10.4	32	14	7	7	10	5	6	3	5	15	5	2.9	0	6	11	9	1	8	6	9	10	10	1	1	
17	Children's Healthcare of Atlanta	64.8	3.9	33	13	8	14	11	7	6	3	7	18	7	3.5	0	NA	11	9	1	8	6	9	10	10	1	1	
17	Children's Hospital Cleveland Clinic	64.8	0.8	43	14	10	14	9	3	6	3	7	17	8	3.1	1	5	11	9	1	8	6	9	10	10	0	1	
19	Lucile Packard Children's Hospital at Stanford	64.1	12.8	29	14	8	3	8	3	6	3	6	14	10	3.1	0	3	11	9	1	8	6	9	10	9	1	1	
20	Yale-New Haven Children's Hospital	63.1	2.5	27	11	9	8	11	7	5	3	8	7	3	2.5	1	NA	10	8	1	8	6	9	10	9	1	1	
21	Monroe Carell Jr. Children's Hospital at Vanderbilt	62.2	3.1	20	13	10	9	10	5	5	3	6	12	7	3.5	1	NA	11	9	1	7	6	9	10	9	1	1	
22	Rady Children's Hospital	60.3	2.5	39	14	10	9	8	7	1	3	9	12	6	3.0	0	NA	9	9	1	8	6	8	10	9	1	1	
23	Children's Hospital of Alabama at UAB	58.5	2.4	22	11	9	12	10	7	6	3	3	17	13	2.7	1	NA	10	9	1	8	6	8	9	10	1	1	
24	Kosair Children's Hospital	57.9	0.7	38	13	9	7	9	7	6	3	6	13	11	2.9	1	NA	11	9	1	8	6	9	9	10	0	1	
25	Miami Children's Hospital	57.6	1.6	35	14	10	15	10	7	6	3	4	15	5	3.1	1	NA	11	9	1	8	6	8	4	9	0	1	
26	Children's National Medical Center	57.1	3.0	31	13	7	15	8	1	5	3	6	16	5	3.2	1	NA	9	9	1	8	6	9	10	10	1	1	
27	American Family Children's Hospital	57.0	1.8	31	10	10	7	9	7	2	3	6	10	4	3.6	1	NA	9	9	1	8	6	8	10	8	1	1	
28	Akron Children's Hospital	56.6	1.9	37	9	10	12	8	6	6	3	6	15	4	3.3	1	NA	9	9	1	8	6	9	9	8	0	1	
29	Le Bonheur Children's Hospital	56.5	1.8	28	14	9	9	9	1	3	3	8	15	10	2.6	0	NA	11	9	1	8	6	9	10	9	1	1	
30	Steven and Alexandra Cohen Children's Medical Center	55.7	0.4	36	14	10	15	11	7	3	3	6	11	5	3.3	0	NA	10	9	1	8	6	9	10	9	0	1	
31	Wolfsong Children's Hospital	54.9	0.3	26	13	8	9	8	7	6	3	8	10	5	3.4	1	NA	9	9	1	8	6	9	10	9	0	1	
32	Shands Hospital for Children at the University of Florida	53.9	0.4	23	14	9	6	6	4	5	3	7	7	8	2.2	1	1	10	8	1	8	6	9	10	10	1	1	
33	Mayo Eugenio Litta Children's Hospital	53.7	0.5	34	14	10	12	10	3	3	3	5	8	5	3.4	1	1	8	9	1	8	5	9	10	9	0	1	
34	Mount Sinai Kravis Children's Hospital	53.6	0.0	39	13	8	15	10	7	6	3	7	7	4	1.9	1	NA	10	9	1	8	6	8	10	9	0	0	
35	University of Michigan C.S. Mott Children's Hospital	53.5	3.0	38	12	8	7	11	2	5	3	3	13	11	3.8	0	NA	11	9	1	8	6	9	10	9	1	1	
36	Massachusetts General Hospital for Children	52.3	1.0	39	14	8	15	7	7	6	3	1	9	8	1.9	1	1	10	9	1	8	6	9	10	9	1	1	
37	Children's Hospital of Michigan	51.8	0.3	31	13	9	15	8	2	6	3	5	15	7	2.4	1	NA	8	9	1	8	6	9	10	9	0	1	
38	Children's Medical Center Dallas	51.5	2.4	26	14	7	8	7	5	3	3	6	14	10	3.1	1	NA	11	9	1	8	6	8	10	10	0	1	
39	Holtz Children's Hospital at UM-Jackson Memorial Hospital	51.3	0.0	26	12	10	9	6	7	6	3	7	9	5	2.2	0	NA	10	9	1	8	6	8	10	8	1	1	
40	Cook Children's Medical Center	51.2	1.8	33	14	10	8	6	7	4	2	6	17	5	3.4	1	NA	10	9	1	8	6	9	10	9	0	1	
41	Alfred I. duPont Hospital for Children	50.9	1.5	41	14	8	15	7	2	4	3	4	16	6	3.3	0	NA	11	9	1	8	6	9	10	10	1	1	
42	University of Iowa Children's Hospital	49.9	1.7	36	14	9	9	9	7	1	3	2	10	7	2.5	1	NA	11	9	1	8	6	9	10	9	0	1	
43	UCSF Benioff Children's Hospital	49.8	0.9	24	11	10	12	9	7	4	3	5	7	4	3.5	0	NA	9	9	1	8	6	9	1	9	1	1	
44	Duke Children's Hospital and Health Center	49.6	5.3	16	9	9	6	6	0	3	3	6	9	6	2.4	1	4	9	9	1	8	6	8	10	9	0	1	
45	Bristol-Myers Squibb Children's Hospital at RWJ Univ. Hosp.	48.7	0.0	30	12	9	8	11	2	6	3	5	8	4	3.7	1	NA	8	9	1	8	6	7	4	8	0	1	
46	All Children's Hospital	48.4	0.0	28	12	10	10	10	7	6	3	5	15	4	2.8	0	NA	4	9	1	7	6	9	7	8	0	1	
47	Phoenix Children's Hospital	48.0	1.0	24	12	10	8	9	1	6	3	5	14	11	3.7	0	NA	9	9	1	8	5	8	10	9	0	1	
48	Children's Mercy Hospitals and Clinics	47.8	0.0	29	13	10	9	8	1	1	3	4	14	11	3.8	1	NA	9	9	1	8	6	9	10	10	0	1	
48	Helen DeVos Children's Hospital	47.8	0.3	24	14	9	11	9	1	4	2	7	11	8	2.5	1	NA	8	8	1	8	6	9	10	9	0	1	
48	University of Chicago Comer Children's Hospital	47.8	0.3	28	11	10	6	9	2	6	3	6	9	4	2.0	0	NA	10	9	1	8	3	8	6	10	1	1	
51	Vermont Children's Hospital at Fletcher Allen Health Care	46.6	0.0	25	12	9	0	9	7	6	3	7	7	4	1.3	0	NA	8	8	1	8	6	9	10	8	0	1	

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

## Pediatric Rankings 2012--Urology

Rank	Hospital Name	U.S. News Hospital Score	Reputation with specialists	Infection-prevention program	Committing to best practices	Success in preventing surgical complications	Success in reducing urinary tract infections	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	Engaging parents and family	Committing to quality improvement	Use of health information technology	Subspecialist availability	Fellowship program	Committing to clinical research
1	Children's Hospital of Philadelphia	100.0	74.4	20	8	17	2	24	19	13	3.4	1	8	9	4	6	8	6	9	10	11	1	3
2	Boston Children's Hospital	95.9	87.3	20	8	16	1	22	23	16	3.7	1	8	9	4	6	8	6	9	10	11	1	3
3	Riley Hospital for Children Indiana University Health	94.2	56.5	20	8	19	2	20	18	12	3.5	1	8	9	4	6	8	6	9	4	12	1	2
4	Cincinnati Children's Hospital Medical Center	84.6	33.0	17	8	19	1	19	22	15	3.4	1	8	9	4	6	8	6	9	10	11	1	3
5	Seattle Children's Hospital	78.4	20.4	20	7	14	2	13	15	14	2.9	1	7	9	4	6	8	6	9	10	12	1	3
6	Ann and Robert H. Lurie Children's Hospital of Chicago	75.8	15.4	15	8	21	1	17	18	11	3.2	1	8	9	4	6	7	6	9	10	11	1	3
7	Texas Children's Hospital	74.7	18.3	22	8	17	1	16	21	13	2.9	1	6	9	3	6	8	6	9	10	12	1	3
8	Monroe Carell Jr. Children's Hospital at Vanderbilt	71.7	25.9	13	7	17	0	23	19	14	3.5	1	8	9	4	6	7	6	9	10	12	1	3
9	Rady Children's Hospital	71.2	4.9	18	8	19	3	18	15	7	3.0	0	7	9	2	6	8	6	8	10	12	1	3
10	Children's Hospital of Pittsburgh of UPMC	67.3	3.8	16	8	14	3	15	16	12	3.0	0	8	9	4	6	8	6	8	10	11	1	3
11	Nationwide Children's Hospital	66.7	2.2	18	8	16	2	23	15	12	2.5	1	7	9	3	6	8	6	9	10	12	1	3
12	Children's Hospital Los Angeles	64.6	4.3	18	7	16	2	17	25	11	3.0	1	8	9	4	6	8	6	9	10	12	0	2
12	Children's Hospital at OU Medical Center	64.6	4.6	11	7	16	3	20	17	15	2.1	0	8	8	4	6	5	3	9	9	12	1	3
14	Children's National Medical Center	63.9	3.2	18	8	17	1	16	18	13	3.2	1	8	9	4	6	8	6	9	10	11	1	3
15	Children's Healthcare of Atlanta	63.5	8.4	15	7	16	1	17	23	20	3.5	0	8	9	4	6	8	6	9	10	12	1	3
16	Steven and Alexandra Cohen Children's Medical Center	63.4	4.4	16	8	21	1	13	24	17	3.3	0	8	9	4	5	8	6	9	10	11	1	3
17	Mayo Eugenio Litta Children's Hospital	62.4	4.5	18	8	16	2	16	12	7	3.4	1	8	9	4	6	8	5	9	10	11	0	2
18	Yale-New Haven Children's Hospital	61.4	0.8	16	8	16	3	7	13	9	2.5	1	8	8	4	4	8	6	9	10	12	0	2
19	Children's Medical Center Dallas	61.3	5.2	17	8	13	1	19	20	16	3.1	1	8	9	4	6	8	6	8	10	12	1	2
20	Johns Hopkins Children's Center	60.7	22.3	13	6	16	NR	13	10	6	3.5	1	7	9	3	6	8	6	7	7	11	1	3
21	Children's Hospital Cleveland Clinic	59.1	0.7	22	8	21	2	7	13	12	3.1	1	8	9	4	3	8	6	9	10	12	0	0
22	Children's Hospital of Michigan	57.6	1.6	18	8	19	1	12	20	10	2.4	1	8	9	4	6	8	6	9	10	12	0	3
23	Mount Sinai Kravis Children's Hospital	56.6	0.1	18	7	19	3	6	8	5	1.9	1	7	9	4	4	8	6	8	10	11	0	0
24	Akron Children's Hospital	55.9	1.4	20	8	16	1	18	13	10	3.3	1	8	9	4	6	8	6	9	9	12	0	3
25	Wolfson Children's Hospital	55.2	0.1	12	7	17	2	11	16	13	3.4	1	7	9	3	5	8	6	9	10	11	0	2
26	Rainbow Babies and Children's Hospital	54.7	0.1	13	6	14	3	9	10	8	2.8	1	8	9	3	5	8	6	9	10	11	0	1
27	Duke Children's Hospital and Health Center	54.2	0.0	15	4	21	2	9	12	6	2.4	1	8	9	4	4	8	6	8	10	11	0	2
28	Children's Hospital of Orange County	53.9	0.0	18	7	18	1	15	18	16	2.4	1	7	9	4	6	8	6	9	10	10	0	3
29	UCSF Benioff Children's Hospital	53.7	3.0	17	8	14	2	10	9	5	3.5	0	6	9	3	6	8	6	9	1	12	1	3
30	UC Davis Children's Hospital-Shriners Hospitals for Children	52.9	0.7	15	8	16	2	10	13	8	4.2	0	8	9	4	6	8	6	9	10	11	0	2
31	Kosair Children's Hospital	52.5	0.0	19	8	21	2	6	11	0	2.9	1	1	9	4	3	8	6	9	9	12	0	1
32	Children's Mercy Hospitals and Clinics	52.1	1.4	20	7	19	0	16	16	9	3.8	1	8	9	4	6	8	6	9	10	11	0	3
33	Lucile Packard Children's Hospital at Stanford	50.5	2.2	14	8	14	1	15	11	7	3.1	0	8	9	4	5	8	6	9	10	11	1	3
34	Miami Children's Hospital	49.4	1.3	14	8	13	1	13	20	12	3.1	1	7	9	2	6	8	6	8	4	10	1	2
35	Bristol-Myers Squibb Children's Hospital at RWJ Univ. Hosp.	48.4	0.0	14	7	16	1	11	14	14	3.7	1	7	9	4	6	8	6	7	4	12	0	3
36	Alfred I. duPont Hospital for Children	48.3	0.8	22	8	18	NR	12	17	10	3.3	0	8	9	4	6	8	6	9	10	11	1	2
36	North Carolina Children's Hospital at UNC	48.3	1.3	13	6	13	2	5	10	8	2.7	1	7	9	4	3	7	6	9	10	11	0	2
38	Children's Hospital Colorado	48.0	0.1	18	7	13	NR	14	16	11	3.2	1	8	9	4	6	8	6	9	10	11	1	3
39	American Family Children's Hospital	47.6	0.0	15	5	18	2	8	9	4	3.6	1	7	9	4	4	8	6	5	10	11	0	0
39	Holtz Children's Hospital at UM-Jackson Memorial Hospital	47.6	0.0	12	8	13	2	8	20	12	2.2	0	7	9	2	5	8	6	8	10	10	1	2
41	All Children's Hospital	47.4	3.6	17	7	21	2	7	15	10	2.8	0	7	9	3	3	7	6	3	7	10	0	0
41	University of Michigan C.S. Mott Children's Hospital	47.4	2.3	22	8	18	NR	13	20	11	3.8	0	7	9	4	5	8	6	9	10	11	0	3
43	St. Louis Children's Hospital-Washington University	47.3	0.9	16	8	17	NR	14	14	9	2.9	1	8	9	4	6	8	6	9	10	11	0	3
44	Helen DeVos Children's Hospital	47.0	0.0	16	8	14	1	11	12	11	2.5	1	8	8	4	6	8	6	9	10	11	0	2
45	University of Minnesota Amplatz Children's Hospital	46.8	0.7	13	8	14	1	10	11	9	2.7	1	7	9	4	6	8	6	9	10	11	0	2
46	Primary Children's Medical Center	45.1	0.8	16	8	18	0	14	22	14	4.8	0	8	9	4	6	8	6	9	4	11	0	3
47	Children's Hospital of Alabama at UAB	45.0	0.9	11	8	17	0	18	18	11	2.7	1	8	9	4	6	8	6	8	9	12	0	2
48	Winthrop University Hospital Children's Medical Center	44.7	0.0	18	5	21	3	5	5	3	4.1	0	4	9	3	1	8	6	3	6	10	0	0
49	Dell Children's Medical Center of Central Texas	43.2	0.0	13	8	12	2	8	13	9	2.5	1	8	7	4	1	7	6	9	10	11	0	0
50	University of Iowa Children's Hospital	42.9	0.1	18	8	18	0	13	10	5	2.5	1	8	9	4	6	8	6	9	10	12	0	1

Top 5%

Top 10%

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

**Appendix D**  
**2012–13 Pediatric Honor Roll**

### Pediatric Honor Roll 2012–13

<b>Rank</b>	<b>Hospital</b>	<b>Points</b>	<b>Specialties</b>
1	Boston Children's Hospital	20	10
1	Children's Hospital of Philadelphia	20	10
3	Cincinnati Children's Hospital Medical Center	19	10
4	Texas Children's Hospital, Houston	13	8
5	Children's Hospital Los Angeles	6	5
6	Seattle Children's Hospital	5	4
7	Nationwide Children's Hospital, Columbus, Ohio	4	3
7	Children's Hospital Colorado, Aurora	4	3
9	Children's Hospital of Pittsburgh of UPMC	3	3
9	Johns Hopkins Children's Center, Baltimore	3	3
9	Ann and Robert H. Lurie Children's Hospital of Chicago	3	3
9	St. Louis Children's Hospital-Washington University	3	3

