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# Optimal Resources for Children's Surgical Care in the United States

From the Task Force for Children's Surgical Care

The Task Force for Children's Surgical Care, an ad hoc group of invited leaders in relevant disciplines, assembled in Rosemont, IL initially from April 30 to May 1, 2012, and subsequently from May 30 to 31, 2013 to consider how to optimize the delivery of children's surgical care in today's competitive national health care environment. Specifically, a mismatch between individual patient needs and available clinical resources for some infants and children receiving surgical care is recognized as a problem in the United States and elsewhere. Although this phenomenon is apparent to most practitioners involved with children's surgical care, comprehensive data are not available and relevant data are imperfect. The scope of this problem is unknown. However, it does periodically, and possibly systematically, result in suboptimal patient outcomes. The composition of the Task Force is detailed in [Appendix 1](#) (2012) and [Appendix 2](#) (2013) (available at: <http://www.journalacs.org>). Support was provided by the Children's Hospital Association and the American College of Surgeons (ACS). The objective was to develop consensus recommendations that would be of use to relevant policy makers and to providers. The group represented key disciplines and perspectives. Published literature and data were used when available and expert opinion when not, as the basis for these recommendations. A research agenda was developed to inform the current situation and to direct providers with regard to improvement. This report details the consensus recommendations of this group. To be clear, the recommendations and opinions presented here reflect the personal views of the participants at present, not all of the various organizations delineated in the appendices. Currently, the Regents of the American College of Surgeons, the Board of Governors and the members of the American Pediatric Surgical Association, and the Board of the Society of Pediatric

Anesthesia have endorsed these recommendations. A process to obtain comprehensive individual organizational endorsement has been initiated and this information will follow.

## PUBLISHED LITERATURE

A summary of selected published data germane to the issue was provided and reviewed.<sup>1-39</sup> Although definitive population-based data are not available, the weight of available evidence suggests differential outcomes in children undergoing surgery in specialized vs nonspecialized environments for neonates,<sup>1,4,5,14,15,18,23,37,38</sup> children requiring intensive care,<sup>3,17,35</sup> seriously injured adolescents and children,<sup>20,21</sup> those with congenital heart disease,<sup>19</sup> and others.<sup>12,13,16,22,24,25</sup> Generally, the benefit of a specialized environment was most apparent in higher-risk patients, such as neonates, infants, and inpatients undergoing more complex procedures, such as cardiac surgery.<sup>19,38,39</sup> For example, assessment of the impact of theoretical regionalization in California for congenital heart disease patients is provided by Chang and Klitzner, who estimated that 83 lives could be saved annually in that state if congenital heart surgery patients from low-volume/higher-mortality centers were cared for in high-volume/lower-mortality institutions.<sup>19</sup> In addition, these outcomes could be achieved in this exercise with only modest additional travel burden for families.

As part of the discussion of environments specialized in pediatric care, the specific topic of anesthesia was addressed in detail. Appropriate pediatric anesthesia expertise, including both relevant training and an adequate level of ongoing clinical pediatric practice, was judged to be critical based on both available data<sup>6-11,26-35</sup> and consensus.

Even among neonates, a surgical cohort known to be at relatively high risk for mortality based on ACS NSQIP pediatrics data, substantial care is delivered in nonspecialized environments. Review of the 2009 Kids' Inpatient Database reveals that, in the United States, approximately 35% of neonates received their surgical care for complex abdominal and thoracic procedures outside of either a children's hospital or a children's unit in a general hospital (unpublished data). Consensus was established that an important opportunity exists to better align resources

**Disclosure Information:** Nothing to disclose.

The 2012 and 2013 members of the Task Force for Children's Surgical Care are listed in [Appendices 1](#) and [2](#), respectively (available at: <http://www.journalacs.org>).

Received August 9, 2013; Revised October 28, 2013; Accepted October 30, 2013.

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with patient needs and therefore better serve patients across the United States. This opportunity is believed to include all children's surgical disciplines.

## RESOURCE STANDARDS

The vision of the Task Force is that every infant and child undergoing surgery in the United States today should receive care in an environment with prospectively defined optimal resources matched to his/her needs. Although there have been noteworthy relevant efforts by various specialty groups, provider organizations, and others previously, there is not currently an accepted delineation of resource standards that insures that an optimal environment is available for an infant or child with a specific level of surgical need.

The following summary represents consensus recommendations of this Task Force to address this need. These recommendations are presented as basic requirements that define minimum resource standards appropriate for infants and children undergoing surgical care today. It is recognized that a variety of approaches can be developed to bring these resources to bear at the local level and that geographic and economic limitations might preclude centers from achieving optimal resource goals. Additionally, highly specialized centers of individual program excellence will develop. The purpose here is to define a contemporary threshold level of expertise and personnel to provide a safe and optimal environment for all pediatric surgical patients. To the extent that it is possible, the Task Force has attempted to incorporate relevant previous work.

## RECOMMENDATIONS

The following classification of centers is recommended as the basis for the optimal resource standards that follow. These are drawn in part from published recommendations of the American Academy of Pediatrics,<sup>5,38</sup> the American Pediatric Surgical Association,<sup>1</sup> and others. Our intent is to consolidate, update, and incorporate contemporary training and certification processes.

## SCOPE OF PRACTICE FOR CHILDREN'S SURGICAL CENTERS BY CENTER CLASSIFICATION

The purpose of center classification is to assure optimal resources to care for infants and children undergoing surgical procedures. The required resources are determined by both patient and procedure characteristics. These classifications define the procedures and patients that are within the typical scope of practice of these centers. It might be appropriate for individual patients to undergo

emergent operations outside the ordinary scope of practice of a center. This should be based on careful consideration of the risks and benefits of transfer to a higher-level center. Performing procedures outside the defined scope of practice should be uncommon.

1. Basic children's surgical centers will demonstrate adequate resources to provide optimal care for healthy children (American Society of Anesthesiologists [ASA] classification 1 and 2) older than 1 year of age.
2. Advanced children's surgical centers will demonstrate adequate resources necessary to care for infants younger than 1 year of age with moderate comorbid conditions (ASA 1 to 3), as well as children older than 1 year of age with moderate comorbid conditions (ASA 1 to 3). Operative procedures would typically be performed by a single specialty and within the typical practice of most surgeons within their pediatric surgical specialty.
3. Comprehensive children's surgical centers will demonstrate adequate resources to provide contemporary surgical care for neonates, infants, children, and adolescents with the most complex congenital and acquired conditions across the entire spectrum of surgical disease, as well as healthy neonates, infants, children, and adolescents who are undergoing either complex or noncomplex surgical procedures.
4. Congenital heart surgery programs require specific additional resources,<sup>39</sup> and will be so designated (Table 1).

## AMBULATORY SURGERY

The safety of performing outpatient surgical procedures in children is considerably dependent on the provision of a safe anesthetic. The major postoperative risk is apnea. Risk factors for postoperative apnea are prematurity, history of apnea, and anemia. In general, younger gestational and post-conceptual ages increase the risk for postoperative apnea. The best relevant data are found in Cote and colleagues' analysis of 255 preterm infants undergoing inguinal herniorrhaphy under general anesthesia.<sup>40</sup> In the nonanemic child with a gestational age of 32 weeks and a post-conceptual age of 56 weeks, the probability of apnea was <1%. With a gestational age of 35 weeks, a post-conceptual age of 54 weeks was the threshold for apnea to be <1%.

A widely accepted guideline is to admit and monitor all infants younger than 50 weeks post-conceptual age for at least 12 hours after anesthesia and surgery. One can safely administer anesthesia on an ambulatory basis for infants with a post-conceptual age older than 50 weeks and who are without other risk factors ([www.asahq.org](http://www.asahq.org)) Ambulatory surgery in infants born before 37 weeks

**Table 1.** Summary of Proposed Children's Surgical Center Designations with Scope of Practice

	Basic	Advanced	Comprehensive
Age	Older than 1 y	Any	Any
ASA classification	1–2	1–3*	1–5
Multidisciplinary management of comorbidities	None	Typically single surgical specialties; neonatology; pediatric anesthesia	Multiple medical and surgical specialties; pediatric anesthesia
Operations <sup>†</sup>	Common, low-risk procedures typically performed by a single specialty	Common anomalies and diseases typically treated by most pediatric surgical specialists and that do not require substantial multispecialty coordination	Major congenital anomalies and complex disease, including those that are uncommon or require substantial multidisciplinary coordination
Ambulatory <sup>‡</sup>	ASA 1–2 Age older than 1 y	ASA 1–3 Full-term and preterm infants can be cared for as ambulatory patients based on written guidelines established by the pediatric anesthesiologist in charge of perioperative care. Institutional guidelines generally require full-term infants younger than 4 weeks or preterm infants younger than 50 post-conceptual weeks to be monitored for at least 12 h postoperatively.	ASA 1–3 Full-term infants and preterm infants can be cared for as ambulatory patients based on written guidelines established by the pediatric anesthesiologist in charge of perioperative care. Institutional guidelines generally require full-term infants younger than 4 weeks or preterm infants younger than 50 post-conceptual weeks to be monitored for at least 12 h postoperatively.

\*Emergent procedures in some patients ASA >3 can be appropriate in neonatal patients, such as those with necrotizing enterocolitis.

<sup>†</sup>Types of anomalies and diseases that require pediatric subspecialty care are delineated in referral guidelines from the American Academy of Pediatrics.<sup>5</sup> Depending on patient age, comorbidities, and need for multidisciplinary surgical approach, these can be appropriate for either advanced or comprehensive centers.

<sup>‡</sup>It is appropriate to include ambulatory sites of care in these recommended levels of institutional designation if the on-site provider team possesses the requisite pediatric training and experience and the site of care is a component of a demonstrably integrated health care delivery system that otherwise does provide these defined resources.

ASA, American Society of Anesthesiologists.

gestation can be done safely after 50 weeks post-conceptual age as long as there is no anemia, earlier apnea, or coexisting disease.

Optimal ambulatory pediatric surgery should be performed in facilities and under the special conditions described:

1. A pediatric anesthesiologist should administer or directly oversee the administration of a general anesthetic and/or sedation to all patients younger than 1 year of age.
2. The preoperative preparation and postoperative recovery of children should occur in an area dedicated for pediatric patients.
3. The special needs of a child's social and emotional comfort should be considered in the construction and protocols of a pediatric ambulatory surgery facility.
4. Anesthesia equipment, including resuscitation devices and appropriate pharmacologic supplies and drug doses for all sizes of children, should be readily available in the operating room and recovery areas of a pediatric ambulatory surgery facility.
5. One or more persons certified in pediatric advanced life support must be present and available to the pediatric patient who is sedated, tranquilized, anesthetized, recovering from anesthesia, or under the influence of narcotics in a pediatric ambulatory surgery facility.
6. Admission and monitoring should be planned for all full-term infants younger than 4 weeks of age and preterm infants younger than 50 weeks post-conceptual age for at least 12 hours after anesthesia and surgery. To be safely managed on an ambulatory basis in advanced or comprehensive facilities, preterm infants should be older than 50 weeks post-conceptual age without anemia, ongoing apnea, or other substantial medical problems. Healthy full-term infants older than 4 weeks of age should be monitored at least 2 to 4 hours after surgery and should be scheduled early in the day.
7. These policies are associated with a <1% incidence of postoperative apnea.

8. Formal transfer agreement should be in place to allow planned processes and prompt transfer to an appropriate inpatient children's facility when medically necessary.

### **APPROPRIATE RESOURCES FOR DELIVERING OPTIMAL CARE TO CHILDREN UNDERGOING SURGERY**

The resources needed to optimize surgical care in children are dependent on having available properly trained specialty and subspecialty personnel to handle the preoperative, perioperative, and postoperative needs of neonates, children, and their families. This includes not only pediatric general surgeons and subspecialty surgeons with pediatric expertise, but also pediatric personnel with expertise in neonatology, pediatric critical care, anesthesiology, radiology, emergency medicine, nursing, and transport services. This pediatric expertise in comprehensive centers extends to the fields of pathology, respiratory therapy, physical therapy, occupational therapy and child life services. The ability to respond to a pediatric emergency is paramount at any institution performing surgery in children. Personnel with expertise in pediatric resuscitation must be available at all times and reciprocal relationships need to be in place for provision of a higher level of care if transfer is deemed necessary. It is also believed that institutions will need to participate in peer performance assessments to assure that quality patient care is being provided.

Table 2 defines the terms for these optimal resources and Table 3 outlines, in grid format, the optimal resources necessary to be in place for provision of quality care based on center designation.

### **RESEARCH AGENDA**

Crucial to the success of this initiative is the ability to generate data demonstrating that the outcomes of clinical care for an individual patient are likely to be improved if resources are matched to individual need. With this in mind, a research agenda was developed to examine several relevant questions. The first objective is to clearly characterize the current environment by identifying where infants and children receive their surgical care and to define patient and institutional characteristics associated with differentiated outcomes. Assessment will be done of clinical outcomes to include survival as well as conventional measures of morbidity and functional outcomes. It is also necessary to consider the potential travel burden to patients and families, particularly in locations without geographic proximity to an advanced or comprehensive

children's surgical center. In this time of substantial projected physician staffing shortfall, it is also important to assess the workforce implications if these recommendations are to be widely adopted. Lastly, it is our hypothesis that higher-quality care will be cost effective at a population level. This is based on ACS NSQIP type of analysis attributing fiscal savings to complications averted and a healthier population. The anticipated outcomes are that higher-quality care will reduce overall expenditure of health care dollars. These data will be generated and presented as promptly as possible. Obviously, it is not currently possible to anticipate all findings. The intent is to identify resources that yield optimal patient outcomes. There will be certain conditions and/or comorbidities where better outcomes are realized through referral and others where this might not follow. This need for data is the basis for the recommendation that centers at all 3 levels of participation be required to formally track and report outcomes on a prospective basis. The Task Force anticipates that this will be an ongoing data-driven process necessarily involving revision and refinement of this Optimal Resources document on a regular basis. An additional goal is to establish benchmarks against which participating as well as nonparticipating institutions can be measured. The anticipated effect is improvement in the outcomes of surgical care for infants and children across the United States.

### **VERIFICATION**

To insure that prospectively defined standards are met, an institutional site visit with verification by an external authority is necessary. This is currently the approach of the Joint Commission and for a number of specific areas of clinical care such as transplantation, trauma, and others.

For example, the ACS trauma verification program was developed and refined during the last several decades. Patients are triaged based on injury severity and medical need to institutions prospectively identified as having appropriate resources. A key feature is that updated and specific recommendations about optimal resources are published on a regular basis. These recommendations are based on evidence when available and expert consensus when not. Participation is voluntary, however, participant centers are required to demonstrate compliance with the relevant resource requirements and these are verified at periodic site visits by the ACS trauma verification program. The administration and costs of this process are covered by a fee paid by the applicant organization. Processes are in place to insure transparent and objective expert external evaluation. This process has resulted in Trauma Center designation on a widespread but not

**Table 2.** Definitions and Terms

General surgeon with pediatric expertise	General surgeon with pediatric expertise is defined as a surgeon either eligible for certification or certified by the American Board of Surgery, or equivalent in general surgery. In addition, this individual will demonstrate ongoing pediatric clinical engagement and expertise as evidenced by 25 or more annual cases in patients younger than 18 years of age, as well as 10 or more relevant category 1 CME credit hours annually.
Pediatric surgeon	Pediatric surgeon is an individual certified or eligible for certification in pediatric surgery by the Pediatric Surgery Board of the American Board of Surgery or equivalent body.
Pediatric surgeon available	A pediatric surgeon as defined here is available on a consultant basis to care for a patient in the relevant institution within 60 min of such a request.
Pediatric surgeons 24/7	Pediatric surgeons 24/7 is defined as 2 or more pediatric surgeons on the medical staff of the relevant institution with 1 available to respond to the bedside within 60 min of request 24 hours a day, 7 days a week.
Anesthesiologist with pediatric expertise	Anesthesiologist with pediatric expertise is defined as an anesthesiologist either eligible to certify or with a current certificate of the American Board of Anesthesiology, or equivalent. In addition, this individual will demonstrate ongoing pediatric clinical engagement in patients younger than 18 years of age, as well as 10 relevant category 1 CME credit hours annually.
Pediatric anesthesiologist	Pediatric anesthesiologist is defined as an individual certified in anesthesia by the American Board of Anesthesia or equivalent, in addition to being certified or eligible for certification in pediatric anesthesia by the American Board of Anesthesia or equivalent organization. Such an individual must demonstrate adequate ongoing engagement in the practice of pediatric anesthesia in patients younger than 18 years of age.
Pediatric anesthesiologist available	A pediatric anesthesiologist as defined here is available on a consultant basis to see a patient and provide care in the relevant institution within 60 min of such a request.
Pediatric anesthesiologists 24/7	Pediatric anesthesiologists 24/7 is defined as 2 or more pediatric anesthesiologists on the medical staff of the relevant institution with 1 available to respond to the bedside and provide care within 60 min 24 hours a day, 7 days a week.
Radiologist with pediatric expertise	Radiologist with pediatric expertise is defined as a radiologist with certification by the American Board of Radiology or equivalent, demonstrable pediatric experience to support the scope of actual practice, and 10 or more relevant category 1 CME hours annually. This individual must be available within 60 min of request.
Pediatric radiologist	Pediatric radiologist is defined as an individual certified by the American Board of Radiology or equivalent in addition to being certified or eligible for certification in pediatric radiology by the American Board of Radiology or equivalent. Electronic image analysis is a permissible adjunct, however, individuals trained and skilled in hands on imaging such as fluoroscopy must be physically available within 60 min. In an advanced center, coverage for this immediate availability can be provided by a combination of pediatric radiologists and radiologists with pediatric expertise (as defined here). In addition to 24/7 pediatric radiologist coverage, interventional radiology availability 24/7 is required for designation as a comprehensive children's surgical center.
Level I, II, III, or IV NICU	Neonatal ICU (NICU) designations are consistent with current American Academy of Pediatrics recommendations <sup>38</sup> comprehensive children's surgical center designation requires 24/7 neonatologist coverage. A neonatologist is defined as an individual who is either sub-board eligible, certified by the American Board of Pediatrics in Neonatal-Perinatal Medicine or equivalent. Level III NICUs must provide prompt and readily available access to a full range of pediatric medical subspecialists, pediatric surgeons, pediatric anesthesiologists, and pediatric ophthalmologists (this can be done at the site or at a closely related institution by prearranged consultative agreement). <sup>38</sup> Level IV NICUs must maintain a full range of pediatric medical subspecialists, children's surgical subspecialists, and pediatric anesthesiologists on site (index institution is the primary site of practice). <sup>38</sup>
Patient transfer	The ability to stabilize and transfer critically ill children must be demonstrated at all levels of designation; this can include transfer agreements to a receiving hospital or within the index institution. This includes critically ill children and neonates whose care might be initiated at a site distinct from definitive care.

(Continued)

**Table 2.** Continued

ICU	ICU capacity with pediatric critical care is defined as a critical care unit with designated providers who have demonstrable expertise in the critical care of children whose ages correspond to the level of center designation. For example, infrastructure and providers would be in place in an advanced center to provide mechanical ventilation to a child after a surgical procedure, within the designated scope of service if necessary. Advanced centers that limit the scope of practice to neonatal patients are not required to have ICU services beyond that of the Level III NICU. Critical care physicians, respiratory therapists, and other providers with demonstrable pediatric experience will be available.
Pediatric ICU	A pediatric ICU with pediatric intensivists requires coverage 24/7 with individuals certified in critical care medicine by the American Board of Pediatrics, the American Board of Anesthesia, the American Board of Surgery, or equivalent.
Emergency physician with pediatric experience/pediatric emergency physician	Emergency physician with pediatric expertise is defined as an individual certified by the American Board of Emergency Medicine, the American Board of Pediatrics, or equivalent and who has demonstrable pediatric experience to support actual emergency medicine practice, as well as 10 h annually of relevant category I CME. A pediatric emergency physician is an individual who is board certified or eligible either in pediatrics or emergency medicine with ACGME-approved or equivalent pediatric fellowship for this specialized designation. In addition to pediatric emergency physician coverage 24/7, similar children's specific emergency department resources must be in place to support the level of designation to include facilities, equipment, and nonphysician personnel. Advanced centers that limit the scope of practice to neonatal patients are not required to have emergency physicians with pediatric experience or pediatric emergency physicians.
Pediatric resuscitation	Pediatric resuscitation in all areas for Basic, Advanced, and Comprehensive designation requires that pediatric specific rapid response and resuscitation teams must be in place 24/7 to respond to any site within a designated facility; 24/7 physical presence of a certified pediatric provider to include PALS certification, in the leadership role for the resuscitation team is required for Advanced and Comprehensive designation. Reciprocal relationship in place with higher level of care for transfer.
Database participation	Participation is required in databases or programs that yield peer-performance assessments against which an individual program can be measured. Examples include American College of Surgeons NSQIP, Pediatric Health Information System, and others that address the quality of patient care provided, not simply administrative or process measures.
Pediatric surgical nurse	A pediatric surgical nurse is defined as a licensed registered nurse accredited by a State Board of Nursing who is involved in the protection, promotion, and optimization of health and abilities for children of newborn age through young adulthood, before, during, and after surgery, including prevention of illness and injury. PALS or equivalent training is required.
Pediatric specialty consultation	Pediatric medical and surgical specialists must be promptly and readily available for consultation. Here and elsewhere pediatric medical and surgical specialists are defined as those who are either eligible for or board certified after relevant specialty fellowship training (either medical or surgical) and recognized by the relevant Board of the American Board of Medical Specialties or equivalent. For the Advanced designation, a specialist must be available for consultation within 60 min; for Comprehensive designation specialists must be on the medical staff and readily available (within 60 min) 24/7 to provide care at the bedside. Relevant surgical specialists (as defined here) will be available to support the entire scope of institutional surgical practice in children.

Where pediatric specific training and experience are designated as "available," the expectation is that the care of patients will be demonstrably provided as detailed by these specialized providers for patients of ages consistent with these recommendations.  
CME, continuing medical education; PALS, pediatric advanced life support.

universal basis across the United States. This has been demonstrably successful in stimulating individual and regional strategic planning and trauma systems

development. It is now clear that similarly injured adult trauma patients cared for in a verified trauma center environment with optimal resources benefit from a

**Table 3.** Optimal Resources by Center Designation

	<b>Basic</b>	<b>Advanced</b>	<b>Comprehensive</b>
General surgeon with pediatric expertise	X		
Pediatric surgeon available		X	
Pediatric surgeons 24/7			X
Anesthesiologist with pediatric expertise	X		
Pediatric anesthesiologist available		X	
Pediatric anesthesiologists 24/7			X
Radiologist with pediatric expertise	X		
Pediatric radiologist		X	X
Pediatric diagnostic and interventional radiology 24/7			X
Level I or higher NICU	X		
Level III or higher NICU		X	
Level IV NICU			X
Ability to stabilize and transfer critically ill children	X	X	X
ICU capacity with pediatric critical care		X	X
Pediatric ICU with pediatric intensivists			X
Emergency physician with pediatric expertise 24/7	X	X	
Pediatric emergency physician 24/7			X
Pediatric resuscitation in all areas	X	X	X
In house physician with PALS certification or equivalent and pediatric resuscitation	X	X	X
Reciprocal relationship with higher level for transfer	X	X	
Required database participation	X	X	X
Pediatric surgical nursing expertise	X	X	X
Pediatric medical and surgical specialists available for consultation		X	X
Pediatric medical and surgical specialists 24/7			X
Pediatric ancillary staff 24/7		X	X
Transfer team			X
Pediatric rapid response team 24/7	X	X	X

NICU, neonatal ICU; PALS, pediatric advanced life support.

considerable improvement in survival probability, generally in the range of 20% to 25%.<sup>20</sup> It is the hope and belief of this Task Force that a similar process initiated now can yield similar improvement in children's surgical outcomes in the future. The ACS, with the support of Children's Hospital Association and other organizations, is working to develop such a verification process for children's surgical care.

### ENDORSEMENT BY SPECIALTY PROVIDER GROUPS

It is the recommendation of this Task Force that these optimal resource recommendations be delineated, discussed, and endorsed by relevant specialty provider groups and other organizations to establish a similar verification process. The standards put forth here are recommendations that institutions will voluntarily accept and implement depending on local needs, institutional mission, and strategic vision. This is a patient-centered

proposal. For providers, it does offer standards that can be used to help obtain and organize necessary resources. An additional goal is to begin to establish benchmarks against which participating as well as nonparticipating institutions can be measured. The anticipated effect is improvement in the outcomes of surgical care for infants and children across the United States.

### SUMMARY

In summary, the Task Force does understand that change is difficult and, in the circumstance of the US health care environment, quite complex. Having acknowledged this, the Task Force firmly believes that if optimal resource standards are clear, providers will act in the best interests of their patients, infants, and children undergoing surgery in this circumstance. We intend to provide evidence to this point, to define optimal resources, and to facilitate this process. The hope and the underlying intent of these recommendations is to insure that every infant and child

undergoing a surgical procedure in the United States will receive his or her care in an environment that offers all of the facilities, equipment, and, most especially, access to the professional providers who have the appropriate background and training to provide optimal care. This must be done while balancing the issues of access, staff, and the need to improve the value proposition. The Task Force is unanimous in its intent to advocate for this agenda.

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**Appendix 1.** 2012 Task Force Membership

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Credentials</b>
Fizan Abdullah, MD, PhD, FACS, FAAP	Associate Professor of Surgery and International Health	Johns Hopkins University	APSA Outcomes Committee Chair APSA Quality Committee, ACS NSQIP Pediatric Measurement and Evaluation Committee ABS Pediatric Surgery Board
Marjorie Judith Arca, MD	Clinical Director of Pediatric Surgical Critical Care; Associate Professor, Pediatric Surgery	Children's Hospital of Wisconsin, Milwaukee	APSA Outcomes Committee
Douglas C Barnhart, MD, MSPH	Associate Professor, Pediatric Surgery	Primary Children's Medical Center, Salt Lake City	APSA Outcomes Committee ACS NSQIP Pediatric, Chair of Measurement and Evaluation Committee, Vice Chair Steering Committee
Stuart Berger, MD	Professor and Chief, Division of Cardiology	Children's Hospital of Wisconsin, Milwaukee	AAP Cardiology and Cardiac Surgery Subcommittees Member at Large AHA Cardiology Committee ACC Wisconsin Chapter Board of Governors
Kirsten M M Beyer, PhD, MPH, MS	Assistant Professor; Director, Epidemiology Data Resource Center	Medical College of Wisconsin	
Mary L Brandt, MD	Professor of Surgery, Pediatric Surgery Division; Associate Dean, Student Affairs	Texas Children's Hospital	AAP Section on Surgery, Chair APSA Board of Governors
Deirdre Byrne	Independent Consultant	Children's Hospital Association	
Laura Cassidy, PhD, MS	Associate Professor; Director, Epidemiology/Clinical Outcomes/Public and Community Health	Medical College of Wisconsin	
Clinton Moore Cavett II, MD	Pediatric Surgeon, Medical Director	Community Health Network- Indiana	Community Practice, Pediatric Surgery
Li Ern Chen, MD	Assistant Professor, Surgery	Children's Medical Center, Dallas	APSA Outcomes Committee AAP Section on Surgery Committee for the Delivery of Surgical Care
Jacquelyn Evans, MD, FRCP(c), FAAP	Medical Director, NICU; Associate Division Chief, Neonatology; Clinical Professor of Pediatrics, UPenn	The Children's Hospital of Philadelphia	Children's Hospital Neonatal Database Consortium, Chair
Keith E Georgeson, MD	Pediatric General Surgeon	Providence Medical Group, Spokane, WA	ABS Pediatric Surgery Board past Chair APSA, past President
Adam Bradley Goldin, MD	Associate Professor Pediatric Surgery	Seattle Children's Hospital	APSA Outcomes Committee
David B Hoyt, MD, FACS	Executive Director	American College of Surgeons	
Bruce Kaufman, MD	Professor and Chief, Pediatric Neurosurgery	Children's Hospital of Wisconsin, Milwaukee	American Society of Pediatric Neurosurgeons, past President Joint Section of Pediatric Neurosurgery AANS/CNS, Chair Elect

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**Appendix 1.** Continued

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Credentials</b>
Jacqueline Kueser	Vice President, Strategic Relations	Children's Hospital Association	
Lynn D Martin, MD, MBA	Director, Department of Anesthesiology and Pain Medicine	Seattle Children's Hospital	Society for Pediatric Anesthesia, President
R Lawrence Moss, MD	Surgeon in Chief	Nationwide Children's Hospital, Columbus	AAP Surgical Section Executive Committee ACS NSQIP Pediatrics Steering Committee
Keith T Oldham, MD	Surgeon in Chief	Children's Hospital of Wisconsin, Milwaukee	APSA President OCHSiC Chair ACS NSQIP Pediatrics, Chair Steering Committee APSTPD, past President
Shawn J Rangel, MD, MSCE	Staff Surgeon, Department of Surgery	Children's Hospital Boston	APSA Outcomes Committee APSA Quality Committee AAP Section on Surgery Committee for the Delivery of Surgical Care
Thomas C Ricketts III, PhD, MPH	Health Policy and Management	University of North Carolina at Chapel Hill	ACS Health Policy Institute Co-Director
Marshall Z Schwartz, MD	Surgeon in Chief Professor of Surgery and Pediatrics	St Christopher's Hospital for Children	ACS Regent APSA, past President ABS Pediatric Surgery Board past Chair Surgery RRC Member
Thomas F Tracy, MD	Vice Chairman, Department of Surgery, Professor of Surgery and Pediatrics	Hasbro Children's Hospital	ACS Advisory Council Chair ABS Pediatric Surgery Board Chair APSTPD past President
Mark Wietecha	President and CEO	Children's Hospital Association	

AANS, American Association of Neurological Surgeons; AAP, American Academy of Pediatrics; ABS, American Board of Surgery; ACC, American College of Cardiology; ACS, American College of Surgeons; AHA, American Heart Association; APSA, American Pediatric Surgical Association; APSTPD, Association of Pediatric Surgery Training Program Directors; CNS, Congress of Neurological Surgeons; OCHSiC, Organization of Children's Hospitals Surgeons in Chief.

**Appendix 2.** 2013 Task Force Membership

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Credentials</b>
Rick Abbott, MD	Professor of Clinical Neurosurgery, Director of Surgical Neuro-oncology	Albert Einstein College of Medicine, The Children's Hospital at Montefiore	American Society of Pediatric Neurosurgeons President
Fizan Abdullah, MD	Associate Professor of Surgery and International Health	Johns Hopkins University	APSA Outcomes Committee Chair APSA Quality Committee, ACS NSQIP Pediatric Measurement and Evaluation Committee ABS Pediatric Surgery Board
Marjorie Judith Arca, MD	Clinical Director of Pediatric Surgical Critical Care; Associate Professor, Pediatric Surgery	Children's Hospital of Wisconsin, Milwaukee	APSA Outcomes Committee AAP Section on Critical Care Medicine
Douglas C Barnhart, MD	Associate Professor, Pediatric Surgery	Primary Children's Medical Center, Salt Lake City	APSA Outcomes Committee ACS NSQIP Pediatric, Chair of Measurement and Evaluation Committee, Vice Chair Steering Committee
Stuart Berger, MD	Professor and Chief, Division of Cardiology	Children's Hospital of Wisconsin, Milwaukee	AAP Cardiology and Cardiac Surgery Subcommittees AHA Cardiology Committee, Member at Large ACC Wisconsin Chapter Board of Governors
Mary L Brandt, MD	Professor of Surgery, Pediatric Surgery Division; Associate Dean, Student Affairs	Texas Children's Hospital	ABS Pediatric Surgery Board Member AAP Section on Surgery, Immediate past Chair APSA Board of Governors
Laura Cassidy, PhD, MS	Associate Professor; Director, Epidemiology/Clinical Outcomes/Public and Community Health	Medical College of Wisconsin	
Clinton Moore Cavett II, MD	Pediatric Surgeon, Medical Director	Community Health Network-Indiana	Community Practice, Pediatric Surgery
Li Ern Chen, MD	Assistant Professor, Surgery	Children's Medical Center, Dallas	APSA Outcomes Committee AAP Section on Surgery Committee for the Delivery of Surgical Care
Craig S Derkay, MD	Professor and Vice Chairman, Otolaryngology Health and Neck Surgery	Eastern Virginia Medical School Children's Hospital of the King's Daughters	American College of Surgeons Otolaryngology Advisory Council, Chair ASPO Safety and Quality Committee, Chair
Jayant Deshpande, MD	Senior Vice President, Chief Quality Officer	Arkansas Children's Hospital	Society of Pediatric Anesthesia, AAP Section on Anesthesia, past President
Jacquelyn Evans, MD	Medical Director, NICU; Associate Division Chief, Neonatology; Clinical Professor of Pediatrics, UPenn	The Children's Hospital of Philadelphia	Children's Hospital Neonatal Database Consortium, Chair
Mary E Fallat, MD	Chief of Pediatric Surgery	University of Louisville School of Medicine	ACS, Advisory Council, Chair

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**Appendix 2.** Continued

<b>Name</b>	<b>Title</b>	<b>Organization</b>	<b>Credentials</b>
Keith E Georgeson, MD	Pediatric General Surgeon	Providence Medical Group, Spokane, WA	ABS Pediatric Surgery Board past Chair APSA, past President
Constance S Houck, MD	Associate Professor of Anesthesia	Harvard Medical School	AAP Section on Anesthesia and Pain Medicine
Adam Bradley Goldin, MD	Associate Professor Pediatric Surgery	Seattle Children's Hospital	APSA Outcomes Committee
David B Hoyt, MD	Executive Director	American College of Surgeons	
Bruce Kaufman, MD	Professor and Chief, Pediatric Neurosurgery	Children's Hospital of Wisconsin, Milwaukee	American Society of Pediatric Neurosurgeons, past President Joint Section of Pediatric Neurosurgery AANS/CNS, Chair Elect
Michael D Klein, MD	AI Philippart Chair, Pediatric Surgical Research Surgeon in Chief	Wayne State University School of Medicine, Children's Hospital of Michigan	OCHSiC, past Chair AAP Section on Surgery, past Chair AAP Chair, Joint Committee of Surgical Chairs APSA President Elect
Thomas M Krummel, MD	Surgeon in Chief	Stanford University School of Medicine Lucile Packard Children's Hospital	American Pediatric Surgical Association, President
Jacqueline Kueser	Vice President, Strategic Relations	Children's Hospital Association	
Lynn D Martin, MD, MBA	Director, Department of Anesthesiology and Pain Medicine	Seattle Children's Hospital	Society for Pediatric Anesthesia, past President
R Lawrence Moss, MD	Surgeon in Chief	Nationwide Children's Hospital, Columbus	AAP Surgical Section Executive Committee ACS NSQIP Pediatrics Steering Committee
Keith T Oldham, MD	Surgeon in Chief	Children's Hospital of Wisconsin, Milwaukee	APSA Immediate past President OCHSiC, Immediate past Chair ACS NSQIP Pediatrics, Chair Steering Committee APSTPD, past President
Shawn J Rangel, MD, MSCE	Staff Surgeon, Department of Surgery	Children's Hospital Boston	APSA Outcomes Committee APSA Quality Committee AAP Section on Surgery Committee for the Delivery of Surgical Care
Robert Sawin, MD	Surgeon in Chief, Vice Chairman Department of Surgery	Seattle Children's Hospital University of Washington School of Medicine	OCHSiC Vice Chair
Mark Wietecha	President and CEO	Children's Hospital Association	

AANS, American Association of Neurological Surgeons; AAP, American Academy of Pediatrics; ABS, American Board of Surgery; ACC, American College of Cardiology; ACS, American College of Surgeons; AHA, American Heart Association; APSA, American Pediatric Surgical Association; APSTPD, Association of Pediatric Surgery Training Program Directors; ASPO, American Society of Pediatric Otolaryngology; CNS, Congress of Neurological Surgeons; OCHSiC, Organization of Children's Hospitals Surgeons in Chief.