Residency Training Program in Pediatric Surgery, #4450721027

The Children’s Hospital Denver and the

University of Colorado School of Medicine

Training Program Chronologic History:

The pediatric surgery residency training program at The Children’s Hospital (TCH) and the University of Colorado School of Medicine is celebrating the completion of its 16th year. Founded in 1993, after the granting of ACGME provisional accreditation (2/22/93), by then Chairman of the Division of Pediatric Surgery at The University of Colorado, the late Dr. John Lilly, M.D., Program Director, the program has been benefited by simultaneous growth as well as consolidation of the pediatric surgery service at TCH. The program originally was approved for one resident each year for a two year training experience with the hospital base being both the University of Colorado Hospital as well as TCH. Ill-health forced Dr. Lilly’s retirement 21 months later in December, 1994, and Dr. Fritz Karrer was appointed both Program Director as well as Chairman, Department of Pediatric Surgery at TCH.

The second ACGME site visit occurred in July, 1996, and at that time, citations identified case volume limitations that prompted a change in the program to one resident every two years to take effect July, 1998, a status that continued until October 1, 2006, when the program was re-expanded to a two resident training program. In 1997, The St. Joseph’s Hospital became an approved training site while training at University of Colorado Hospital was discontinued.
The third ACGME site visit occurred in 1998, and on March 31, 1999, the ACGME recommended continued provisional accreditation, two years of training and one resident for those two years. A citation at that time revolved around the fact that 60% of the 10-12 Denver pediatric surgeons were not members of the full-time faculty and therefore educational as well as consistency of care issues were identified as problematic. It was also at that time that formalization of the affiliation agreement linking TCH with the University of Colorado School of Medicine was implemented. Since that relationship evolved, physician mortality, retirement, and relocation changed pediatric surgery at TCH: the service has grown to 2700-2800 annual cases, 100% of the cases are done by the consolidated full-time faculty, and the supporting medical and surgical specialties have matured.

The fourth ACGME site visit occurred in 2001, and on August 29, 2001, full accreditation was granted to a two-year program training but one resident. The ACGME subsequently granted an 88 duty hour exception to the program on 12/19/03. The fifth program review was done in September, 2004, and the ACGME response was received on 4/19/05, in which the recommendation was proposed program probation. At that time the program was also approved as a two resident for two years of training. Citations included a lack of pediatric surgery resident experience in the complete care of the critically ill infant and child as well as a lack of effective continuity of care. After appeal, the program probationary status was upheld by the ACGME on 12/12/05, and the duty hour exception was rescinded.
Immediate remedial activities followed to address the citations (see PIF). In addition, **Dr. Moritz Ziegler** was appointed Residency Program Director. Finally, on October 1, 2007, a second pediatric surgery resident was added to the team, expanding the program to two residents for two years of training.

The training program in pediatric surgery has matured in concert with the maturation of TCH over these last 16 years into a formalized academic health center for children. TCH is consistently considered to be a top 10 independent children’s hospital. The Division of Pediatric Surgery at the University of Colorado includes six experienced pediatric surgeons -- Drs. Karrer, Partrick, Bealer, Moulton, Bruny, Hartford, and Ziegler and Dr. Stig Somme will join the department in July, 2009. The previously competing three additional private practice groups who had worked at TCH no longer are present and no longer participate in the training of pediatric surgery residents. Over this 16 year training history a total of 12 pediatric surgeons have trained in Denver and two currently are in the program (See Genealogy for trainees and their current positions). In each case these trainees have successfully achieved certification by the American Board of Surgery in Pediatric Surgery and now devote themselves to the practice of that specialty in either a community or academic setting.
**Residency Training Curriculum:**

**Definitions:** We ascribe to the definition of *pediatric surgery* adopted by the American Board of Surgery and approved by the American Board of Medical Specialties: “the diagnosis, preoperative, operative and postoperative surgical management of congenital and acquired abnormalities and diseases, be they developmental, inflammatory, neoplastic, or traumatic, in the neonatal and pediatric age groups.”

We ascribe to the definition of *resident surgeon:* “this requires the resident to be present for all of the critical portions and must perform the majority of the critical portions of the procedure. Involvement in the preoperative assessment as well as the postoperative management of that patient is an important element of that participation.”

We ascribe to the definition of *primary responsibility* to be that “the pediatric surgical service and its attending faculty and resident trainees are responsible for the preoperative, intraoperative and postoperative care of their patients that includes bedside presence and its documentation in the medical record supported by the appropriate writing of medical orders that define and execute the described plan of care.”
The definition of the pediatric surgical service and their codified responsibility is found in TCH Medical Board Resolution (April 3, 2006) that states the following:

- TCH patients (ambulatory, inpatient, NICU, PICU or floor) with pediatric surgical disease will be cared for by pediatric surgeons. This practice recognizes the transitional nature of much of the care that is delivered—transplant, trauma, and premature neonatal patients among others. Depending on where the patient is in the course of their disease, the pediatric surgeon directs, collaborates in, or transfers care to other surgical, pediatric, neonatal, or intensive care specialties.

- Team care that optimizes collaboration of surgical, pediatric and nursing expertise will always be encouraged.

- Joint pediatric surgical and neonatal or intensive care team rounds will occur daily in the NICU and PICU and a care plan for the pediatric surgical patient will be defined. The pediatric surgical team will have the responsibility to affect this plan and document this action in medical record orders and progress notes.

- The scope of responsibility of the pediatric surgical team when providing care of the surgical patient includes but is not limited to cardiopulmonary resuscitation, the management of patients on respirators, invasive monitoring techniques and interpretation, nutritional assessment and management, and the recognition and management of coagulation disorders.

**Training Curriculum Content**: The TCH training curriculum in pediatric surgery is modeled after that curriculum more recently codified by the Association of Pediatric Surgery Training Program Directors (See Curriculum), it emphasizes the six competencies defined by the Institute of Medicine and the American College of Graduate Medical Education (ACGME) (See Educational Objectives), and it is aligned with that curriculum previously defined in our department (See Educational Objectives).

**General Surgery Resident Team Responsibilities**: The definition of those policies and procedures of resident selection, evaluation and supervision used by the TCH
Division of Pediatric Surgery are enclosed (See Policies and Procedures). Our compliment of general surgery residents includes those at the PGY-1 and PGY-4 level from the University of Colorado as well as those (6 months) at the PGY-2 level from the St. Josephs Hospital, Denver. Graded clinical experience and decision-making responsibility is assigned to these residents based on observed and verified competencies. Similar gradation in intraoperative responsibility is defined by each faculty mentor, and in every circumstance, attending–resident supervisory interaction is accomplished throughout all procedural activities. The daily resident care team is lead by the chief residents in pediatric surgery on morning and afternoon sign-out rounds as well as in establishing operating room assignments. It is this team that with the assigned faculty attending of the day will also conduct multidisciplinary bedside rounds on each intensive care unit patient (PICU, CICU, and NICU).

This resident team also participates daily in the didactic and clinical teaching curriculum of the Division. A monthly faculty and resident evaluation session is held for the purpose of providing faculty and pediatric surgery resident feedback on individual general surgery resident performance. A written evaluation is completed by each faculty person and a summary document is forwarded to the University of Colorado Department of Surgery Office of Graduate Medical Education for final assessment. Any general surgery resident with an identified deficiency during the pediatric surgery rotation is immediately counseled and advised regarding performance improvement.
Pediatric Surgical Resident Team Responsibilities: Resident selection guidelines are outlined in the Policies and Procedures. Each year the training program will participate in the matching plan sponsored by the Association of Pediatric Surgery Training Program Directors and administered by the National Resident Matching Plan (NRMP). To be eligible to participate in this matching plan, the resident at the time of beginning of training in pediatric surgery will have had to complete an ACGME approved general surgery training program and be eligible for certification by the American Board of Surgery. After an initial candidate review by each faculty member, an evaluation meeting is held and selected applicants are invited for an onsite interview. After completing the evaluation process, a ranked list of candidates is submitted to the NRMP and computer based matching selection is completed. Once the match is completed, the selected resident must verify the successful completion of general surgery training when beginning the pediatric surgical training program about 14 months later.

The first year or Assistant Chief Resident in Pediatric Surgery must complete the curriculum as outlined (See Curriculum and Educational Objectives). The first 6 months of the first year are identified as the time for specialty elective rotations at TCH: neonatology (1 month), pediatric urology (1 month), pediatric intensive care (elective), and anesthesiology (elective). During this time the resident also participates in the call schedule for pediatric surgery. The rest of the first year is devoted to the pediatric surgery service. The second year resident or Chief Resident in Pediatric Surgery also serves as the administrative chief resident devoting the
entire 12 months to the pediatric surgical service. Throughout the training interval, the resident is exposed to increasing case complexity, responsibility, and independent activity.

**Resident Supervision and Lines of Authority:** The hospital has codified guidelines for resident supervision that define an appropriate training environment while assuring patient safety in bedside and procedural care (See Policies and Procedures). These guidelines assure an appropriate resident-faculty interaction in the trauma bay and emergency room, the ambulatory clinic, the inpatient bedside that includes the intensive care units, as well as in the operating room during procedures.

**The Didactic Curriculum:** The daily as well as weekly lecture series content includes a combination of basic science as well as clinical science didactic lecture topics, and the latter also include sessions that address the core competencies (See Educational Objectives and Lecture Series content). Core pediatric surgical clinical topic lectures are delivered frequently to accommodate the changing general surgery resident (PGY-1, PGY-2, and PGY-4) complement. The basic sciences as well as the complete pediatric surgical curriculum topics are spaced such that they are rotated every two years to assure exposure of the pediatric surgical residents in the two-year program. Lectures are delivered by the pediatric surgical faculty as well as guest lecturers with special topic expertise.
In addition to the didactic curriculum delivered in Denver, each pediatric surgical resident also attends over a two year period the following scholarly activities:

1. Basic as well as Advanced Course in Minimally Invasive Surgery-under the auspices of the Association of Pediatric Surgery Training Program Directors
2. Anorectal Malformations Course- under the auspices of Alberto Pena, M.D., course director
3. Course in Pediatric Surgical Oncology, St. Jude’s Children’s Hospital
4. American Pediatric Surgical Association- annual meeting
5. Surgical Section American Academy of Pediatrics-annual meeting
6. Pediatric Surgery Resident’s Conference-annual meeting

**Preoperative and Postoperative Clinical Care Curriculum:** All patients on the pediatric surgical service are reviewed by both the resident team and faculty on a daily basis and appropriate documentation in the electronic medical record follows. Beginning in December, 2005, daily intensive care unit rounds have occurred by a team that includes a faculty person, the pediatric surgery resident and often the PGY-4 resident representing the surgical service; and the appropriate PICU, CICU, or NICU medical team of residents and attending pediatrician is engaged at the bedside (See PIF). Clinical review and information exchange ensues, and a management plan for the day is defined. Such a plan includes nutritional care, ventilator management, cardiopulmonary support strategies, pain management, as well as other pharmacologic or care plan adjustments. This has proved to be both an excellent teaching as well as communication mechanism; and it has served to empower the
surgical resident team, in the presence of their medical and nursing peers, to appropriately direct the surgical care of surgical patients independent of their site of location in the hospital.

The surgical faculty ambulatory office practice occurs five days of each week in the TCH Multi-Specialty Surgical Clinic. There each pediatric surgical resident spends one-half day each week devoted to ambulatory surgical practice office activity under the direct supervision of the attending faculty. The resident will see both preoperative patients as well as postoperative follow-up cases. The resident will learn assessment, appropriate medical record electronic documentation, and there will also be an opportunity to learn appropriate clinical coding and billing activity. Resident participation is a documented and recorded activity.

Emergency room and trauma care evaluation includes the traditional hierarchy of the pediatric surgical team; namely, surgical intern evaluation, senior general or pediatric surgery resident assessment, followed by faculty person assessment. A plan of care for evaluation and treatment is defined and it is then effected by the surgical care team. Trauma patients are evaluated simultaneously by the resident team and faculty person of the day. As an American College of Surgeons designated level I Regional Pediatric Trauma Center, we comply with those requirements of attending faculty presence within 15 minutes of a call for all Trauma Red and 30 minutes for Trauma Level I activations. The senior surgical resident (PGY-4 or Pediatric Surgery
Resident) leads all trauma evaluations and resuscitations as “Dr. Right” along with surgical faculty attending and emergency medicine colleagues.

**Operative Surgical Activity:** Utilizing the definitions described above and the operative case log provided by the ACGME and the RRC for Surgery, our residents record their operative activity on a monthly basis. These data are then cataloged and reviewed as a part of the resident’s 360 degree evaluation completed every 6 months. We strive to exceed minimum two-year activity numbers for each resident that include 800 total operative cases, 90 non-operative trauma cases, 25 tumor cases, 55 important pediatric surgical cases, and 75 major neonatal cases. Operative resident and pediatric surgical service case volume logs record that data for the pediatric surgical training experience at TCH (See PIF). The nationally reported data of our most recent trainee as well as the national case volume norms that represent all other pediatric surgical resident trainees from that same year are recorded (See Case Volume Activity).

**Resident Performance Evaluation:**

**Resident Evaluation:** General surgery rotating residents (see above) are evaluated monthly in a joint meeting of attending faculty and pediatric surgical residents. A summary evaluation is then submitted to the appropriate program director office and the University of Colorado GME Office (See appropriate evaluation templates for the University of Colorado and the St. Joseph Hospital Departments of Surgery).
Pediatric surgical residents are evaluated by a 360 degree written evaluation every 6 months. Evaluation forms (See Resident Dossier) are circulated to all faculty members in pediatric surgery, and to selected individuals representing the specialties of anesthesiology, gastroenterology, neonatology, emergency medicine, urology, pediatric intensive care, and nursing members from the Division, the perioperative area, the emergency department, the intensive care units, as well as the surgical inpatient units. The combined evaluations are tabulated and presented to the resident by the Program Director. Performance strengths and weaknesses are discussed, any remedial plan needed is outlined, and both parties are signatory to a final document that is made a part of the residents performance dossier. Additional information included as a part of this review process is the Annual In-service Examination in Pediatric Surgery where resident performance is assessed in aggregate and by disease category from an exam administered annually under the auspices of the Pediatric Surgery Board of the American Board of Surgery. The resident’s operative case log is also evaluated and assessed against national norms.

Faculty and training program evaluation by the resident team-general surgery and pediatric surgery-is done annually and reported to the Department of Surgery GME office. Reports are then returned to the appropriate specialty head, program director and individual faculty persons. Remediation is the responsibility of the specialty division chairperson.