



**Children's Hospitals and
Clinics of Minnesota
and
Regions Hospital, Health
Partners Institute of Medical
Education**

2013 – 2014

**Pediatric Emergency Medicine
Fellowship Manual**

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Explanation of Manual

On behalf of the faculty and staff, welcome to the Department of Emergency Medicine at the Children's Hospitals and Clinics of Minnesota. We hope that the time you spend in the Pediatric Emergency Medicine Fellowship Program will be both educational and enjoyable.

This Fellowship Addendum outlines policies and procedures specific to your training program. Policies in this addendum have been developed in accordance with standards set by the American Board of Pediatrics and the Accreditation Council for Graduate Medical Education, and are subject to periodic review and change by the faculty, program director, and department chair.

Fellows are expected to be familiar with the contents of this manual at the beginning of the fellowship. Throughout the year, additional important information will be communicated to fellows via regular mail and/or E-mail. E-mail is the primary mode of communication, thus, fellows are expected to check their E-mail frequently and to keep up to date.

SECTION 1 – PROGRAM BASICS

A. PROGRAM GOAL

The overall goal of the Children's Hospitals and Clinics of Minnesota/Health Partners Institute of Medical Education Pediatric Emergency Medicine Fellowship is to produce a physician clinically proficient in the management of the acutely ill or injured child in the setting of an emergency department and an educator and a scholar in the field of pediatric emergency medicine. This program promotes excellence in academic subspecialty training with an emphasis on producing academic leaders who generate the new knowledge required to provide the best care for infants, children, and adolescents. We will accomplish this through:

- Recruiting fellows with outstanding academic potential and commitment.
- Providing state-of-the-art clinical training.
- Providing exceptional training and mentorship in basic, translational, clinical, and epidemiologic research, medical education, academic leadership, and advocacy for pediatric health.
- Ensuring a scholarly work product during the fellowship, which serves to facilitate fellows' professional transition into academic faculty positions.

This is all made possible by adhering to the four Program Objectives listed below and the mastery of the six core competencies: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice.

B. PROGRAM OBJECTIVES

1. Clinical Proficiency -

Through a structured training program that meets the requirements set forth by the Accreditation Council for Graduate Medical Education, each fellow will receive the rigorous clinical experience and teaching needed to become proficient at caring for the acutely ill or injured child.

Proficiency will be measured by competency-based tools, including 360 degree semi-annual evaluations (faculty, nursing, house staff, fellow colleagues, administrative staff, patients), semi-annual direct observations, yearly American Board of Pediatrics Sub-specialty In-Training Examination, the fellow's Procedure Competency Log, the fellow's Patient Follow-up Log, outside rotation evaluations, and the fellow's Individualized Learning Plan. Every Fellow focuses on a customized learning plan, and meets multiple times each year with program director to discuss clinical issues, avenues for improvement, mentoring and career opportunities.

2. Educator Competency -

The training program's faculty and an institutional Core Curriculum will assist fellows in developing requisite skills and demonstrating competence in the teaching of current knowledge in pediatric emergency medicine to nursing staff, pre-hospital personnel, resident physicians from different disciplines, patients and their families, and the community (both medical and lay).

Competency-based tools including didactic evaluations, the fellow's Academic Portfolio, semi-annual direct observations, and the fellow's Individualized Learning Plan will measure proficiency.

3. Scholarly Activity -

Each fellow will be mentored in her/his acquisition of the knowledge base and skills needed to engage in meaningful scholarly activity. An institutional mini-course in the first year of fellowship coupled with ongoing institutional Core Curriculum modules allow the fellow to achieve this objective, as reflected in a final scholarly "work product". This "work product" will contribute to the existing pediatric emergency medicine body of knowledge, fulfill the program's scholarly activity requirement and, when applicable, the American Board of Pediatrics scholarly activity requirement for eligibility for Pediatric Emergency Medicine Board Certification. Proficiency will be measured by the fellow's scholarly oversight committee's evaluations of that "work product" and, when applicable, that committee's final recommendation to the American Board of Pediatrics.

4. Quality Competency -

Each fellow will be exposed to the quality assurance and administrative aspects of the practice of pediatric emergency medicine. This will include learning about pre-hospital and inter-hospital care organization, safety and quality improvement, personnel management, public relations, child advocacy, medical-legal issues, billing rules and regulations. Proficiency will be measured by competency-based tools, including 360

degree semi-annual evaluations, semi-annual performance evaluations, semi-annual direct observations, yearly American Board of Pediatrics Sub-specialty In-Training Examination, the fellow's Individualized Learning Plan, and the evaluation of the fellow's Quality Improvement Project.

5. Humanism and Wellness Competency -

Participating in seminar-style didactics (e.g. independent readings, discussion, group project work, site visits) moderated by program and guest faculty and continued attendance of related institutional Core Curriculum modules, fellows will gain knowledge and experience with a sophisticated curriculum in humanism in medicine and physician wellness. This curriculum will cover topics such as physician fatigue, communication skills, complementary and alternative medicine, physician nutrition and exercise, the impaired physician, delivering bad news, coping with the death of our patients, religion in the practice of medicine. Competency-based tools, including 360 degree semi-annual evaluations, semi-annual evaluations, and the fellow's Individualized Learning Plan, will measure proficiency.

C. CORE COMPETENCIES

In 1999, the ACGME launched its Outcome Project and through an extensive review, identified six general competencies for resident and fellow development. Residency and fellowship programs are required to integrate teaching and learning of these competencies into residents and fellows' didactic and clinical educational experiences, and to demonstrate learning in the competencies through an evaluation process. The six general competencies that have been incorporated into our fellowship program are as follows:

1. Patient Care -

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.

2. Medical Knowledge -

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences, as well as the application of this knowledge to patient care.

3. Practice-based Learning and Improvement -

Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning. Fellows are expected to develop skills and habits to be able to meet the following goals:

- Identify strengths, deficiencies, and limits in one's knowledge and expertise;
- Set learning and improvement goals;
- Identify and perform appropriate learning activities;
- Systematically analyze practice using quality improvement methods, and implement changes with the goal of practice improvement;
- Incorporate formative evaluation feedback into daily practice;

- Locate, appraise, and assimilate evidence from scientific studies related to their patients' health problems;
- Use information technology to optimize learning; and,
- Participate in the education of patients, families, students, residents and other health professionals.

4. Interpersonal and Communication Skills -

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Fellows are expected to:

- Communicate effectively with patients, families, and the public, as appropriate, across a broad range of socioeconomic and cultural backgrounds;
- Communicate effectively with physicians, other health professionals, and health related agencies;
- Work effectively as a member or leader of a health care team or other professional group;
- Act in a consultative role to other physicians and health professionals; and,
- Maintain comprehensive, timely, and legible medical records, if applicable.

5. Professionalism -

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Fellows are expected to demonstrate:

- Compassion, integrity, and respect for others;
- Responsiveness to patient needs that supersedes self-interest;
- Respect for patient privacy and autonomy;
- Accountability to patients, society and the profession; and,
- Sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.

6. Systems-based Practice -

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Fellows are expected to:

- Work effectively in various health care delivery settings and systems relevant to their clinical specialty;
- Coordinate patient care within the health care system relevant to their clinical specialty;
- Incorporate considerations of cost awareness and risk-benefit analysis in patient and/or population-based care as appropriate;
- Advocate for quality patient care and optimal patient care systems;
- Work in inter-professional teams to enhance patient safety and improve patient care quality; and participate in identifying system errors and implementing potential systems solutions.

Fellows are referred to www.ACGME.org for further information regarding the definitions and the core competency requirements.

D. CURRICULUM

1. Clinical Training -

The PEM Fellowship Program consists of the following components. Each fellow will be assigned to these various components in an educationally appropriate sequence over the usual thirty-six (36) months of training. The training includes rotation in pediatric emergency departments (6 months per year), adult emergency departments (4 months during the course of fellowship), a month in pediatric intensive care unit, 2-4 weeks in sedation and anesthesia. Three months of adult ED experience is focused on caring for ill and injured patients/trauma management and one month is focused on toxicology and emergency medical services. This curriculum is based on providing first year fellow with high degree supervision during direct patient contact and treatment, and providing second and third year fellows more independent working and graded supervisory responsibility for the pediatric and emergency medicine residents, medical students, and their patients. The second and third years of fellowship provides more time for administrative responsibilities and dedicated research time.

2. Research and Scholarly Activities -

The trainee meets formally during the first months of training with Division faculty to discuss research goals and possible projects. Following these one-on-one discussions, the trainee will choose a mentor, and start development of a formal research project. The outline for this project will be completed before the end of the first year, and then implemented during the second and third years. In some cases, implementation can begin during the first year of training.

Throughout the three years of training, the trainee will receive informal and formal training in research methodology, research ethics, biostatistics, scientific publication preparation, and grant writing. It is expected that trainees will acquire the skills to submit strong applications for grant funding.

Goals:

- To gain the capacity to conceive, formulate and carry out an independent clinical basic science research project (or participate in a project of substantive scholarly exploration) in the field of emergency medicine, which will serve as a basis for a career.
- To learn the essentials of proper data collection and analysis, including the proper use of statistical methodology.
- To learn to write medical literature coherently in order to facilitate communication of scientific information.
- To be able to present original research in an open forum (P.R.E.S.S., Pediatric Academic Societies annual meeting, AAP section of emergency Medicine meeting).
- To understand the fundamentals of grant applications, Institutional Review Board (IRB), and administration.
- Seek support from Research and Sponsored Programs (RSP) under the guidance of ED research director

Objectives:

By the end of training, the PEM fellow will have demonstrated competency in scholarly activity by:

- Completing the Pediatric Core Curriculum For Subspecialty Residents requirements or completing the Emergency Medicine Basic Research Symposium (EMBRs) course
- Submitting original abstracts to:
 - National pediatric/emergency medicine meetings (i.e., PAS, AAP, ACEP, SAEM etc.)
- Presenting original projects annually at AAP PEM Fellows' Conference
- Generating a specific written scholarly activity work product approved by the individual's Scholarship Oversight Committee. Examples include, but are not limited to:
 - A peer-reviewed publication in which the fellow played a substantial role
 - An in-depth manuscript describing a completed project
 - A thesis or dissertation written in connection with the pursuit of an advanced degree
 - A progress report for projects of exceptional complexity, such as a multi-year clinical trial

3. Guidelines for Expectations of Progress in Research and Scholarly Activities

First year Fellow:

1. Meets with scholarly oversight committee, program director, ED research coordinator to begin to develop their scholarly activity project.
2. Be able to search and review relevant medical literature for education and patient care.
3. Perform critical evaluation of the medical literature.
4. Attend core curriculum lectures conducted by University of Minnesota for pediatric Fellows or attend EMBRS (emergency medicine basic research skills) workshop conducted by ACEP (American college of emergency physicians).
5. Prepare a case report for submission.
6. Decide on a Scholarly Activity Project to pursue during fellowship and review with fellow's Scholarly Activity Committee.
7. Identify the faculty advisor for the project and complete the literature search on the project.
8. Present the fellow's progress in the area of Scholarly Activity to the Fellows Scholarly Activity Committee biannually.
9. Present cases at Metro conference at least 4 times per year and do a talk on ED topic 4 times a year.
10. Attend departmental Journal club and resuscitation conferences.

Second year Fellow:

1. Continues to work on their scholarly activity project and submit a proposal for IRB approval and submit grant for funding for their project (if necessary). -Be able to obtain clinically relevant medical literature for education and patient care

2. Prepare and present at Metro conference, Journal Club and Morbidity & Mortality conference. Fellow will be using the principles of Evidence Based Medicine that investigates and evaluates patient care practices in the ED. The Fellow will appraise and assimilate the scientific evidence about a topic regarding patient management in the PEM and will present this information to the Division of Emergency Medicine in the form of a Journal Club. The Fellow will then present his/her recommendations about the best practice management of patients after summarizing all of the relevant scientific literature. This formal review through the Journal Club format will enable the Fellow and Divisional members to become competent in Practice Based Learning.
3. Fellows are expected to attend the National Pediatric Emergency Medicine Fellowship Conference where lectures in the area of Research are presented. Fellows are expected to present their scholarly activity/research project to national experts in the field of Research to receive guidance on how to develop their projects.
4. Fellows are encouraged to submit an emerge-quiz case.
5. The fellow must present their progress in the area of scholarly activity to their Scholarly Activity Committee on a biannual basis.

Third year Fellow:

1. Is expected to complete their scholarly activity/research and present at a national meeting.
2. Complete the project and submit a manuscript to a peer-reviewed journal.
3. The PEM Fellow must present their progress in the area of Scholarly Activity to their Scholarly Activity Committee semiannually.
4. Submit a personal statement focusing on their scholarly activity.
5. Participate and present in Journal club, 3M conference and Metro conference.
6. Participate in a QI project in the ED.

4. SAFETY

SAFETY CURRICULUM FOR PEM FELLOWS

- Epidemiology of medical errors
- Systems pressures that predispose to errors
- Human factors that contribute to medical errors
- Identifying and reporting errors and near misses
- Team work and communication
- Disclosure of medical errors
- Root cause analysis or systems analysis
- The impact of medical errors on care-givers
- Giving and receiving handoffs
- Team training
- Simulation for high risk procedures
- Simulation for rare events (codes, traumas)

SECTION 2 – EXPECTATIONS FOR THE PEM FELLOW

The PEM fellow has a complex job, with many expectations. The following is a list of the expectations. Remember: The only dumb question is the one that isn't asked. When in doubt, please ask.

A. PERSONAL CONDUCT

1. We expect professional behavior at all times.
2. Negative comments about colleagues, consultants, prehospital personnel, or private practitioners are to be avoided, whether in our own ED, other ED's and ESPECIALLY in the presence of patients or their families. Real problems may be dealt with through the existing QA process.
3. We expect a high level of diligence, energy, and enthusiasm from our fellows.
4. Regarding scheduling, fellows must do what attendings do: work with the fellowship director, ED departmental scheduler and work with those making the schedules for the outside rotations.
5. We adhere to the ACGME resident work hour rules. These are clearly outlined in the moonlighting section of this manual. Please know these rules. If you believe you are in violation of these rules, you must contact the fellowship director immediately. Action will be taken to modify your schedule so you can be in compliance with the rules.
6. You will be required to do certain tasks at regular intervals, such as diversity training, on-line CHEX training, getting a physical, filling out evaluations, work hours surveys, getting fitted for protective equipment, etc. Although sometimes onerous, doing these things promptly makes life easier and is part of professional life.
7. Fellowship contracts typically begin July 1st and end June 30th for each academic year. (3 years for pediatric residency graduates Or 2 years for EM residency graduates). Fellowship training is not done until 33 months have been completed for graduates of PEDS residency, and 22 months for graduates of EM residency.
8. Fellows should carefully read and be familiar with the admission requirements to sit for Pediatrics EM subspecialty boards.
9. Fellows should be very familiar with the contents of the PEM fellow's manual and material given on orientation day.

B. CLINICAL

1. Arriving on time for all clinical shifts is an important courtesy in emergency medicine.
2. Prompt and reliable attendance at all activities of "outside" rotations; remember you are our ambassador!
3. Schedule requests must be emailed for every month and are due on the 15th day two (2) months proceeding the scheduled month. Work with the schedule maker to help her understand where you will be during that month. Outside rotations are generally devoted to that rotation, with no ED shifts; this applies most notably but not exclusively to your PICU,

adult ED, and Trauma rotations. Please see detailed description of rotations within this manual for specifics.

4. The bulk of your clinical PED shifts should be scheduled during your PED blocks.
5. When you are working in the Pediatric ED during your first year, you are expected to primarily evaluate patients. This allows you the opportunity to “cherry pick” cases that are challenging and unique in order to expand your knowledge and procedural skills. In the years two and three, you will be expected to assume leadership and precepting roles.
6. You are expected to learn as much as possible about being in charge during clinical shifts. Strive to develop a sense of all the patients in the Pediatric ED whenever possible. Learn to develop a “sixth sense” of patient or systems problems either before they start, or early in the problem resolution process.
7. All ED clinical shifts will be either worked, or appropriate substitution will be arranged with scheduler or ED Director/Fellowship Director. For sickness, coverage arrangements will be made by ED Director, please contact as soon as possible.
8. Procedure logs must be completed for all relevant procedures using RMS or an excel spreadsheet.
9. PALS, ACLS, ATLS are required. US training will be provided.

C. TEACHING / CONFERENCES

1. Provide clinical “bedside” teaching of trainees while on ED shifts. Fellows participate in special experiences to learn how to teach. They are expected to teach medical
2. Students and residents in formal settings and at the bedside.
3. You are expected to give presentations at several PEM conferences each year, including, Metro conference, core PEM topics, Resuscitation cases/ morbidity and mortality conferences, EM critical case conference, resident noon conference and journal clubs. The conferences and presentations will be equally divided amongst fellows
4. Being a PALS instructor is strongly encouraged and PALS teaching expected about 2 times per year.

*** The fellowship is designed to complete all core requirements in two years. Fellows who have previously completed an EM residency operate on a two-year curriculum. Fellows participate in a variety of didactic sessions- talk/lectures, simulations, case discussions, journal club etc.

Monthly Didactic Sessions include:

- Monthly Inter-hospital Pediatric case conference
- Monthly PEM Board review/ Chapter reviews
- Monthly ED-Radiology case reviews
- Monthly Core lectures on PEM topics
- Monthly Medical and trauma case conferences
- Monthly Combined PEM/EM pediatric critical case conference
- Simulation Instruction every other month
- Pediatric Toxicology Journal Club every other month

Annual Workshops/conferences include:

- Suture/Wound Management Workshops
- Ultrasound and Splinting Workshops
- Disaster drill
- Topics in Pediatric Emergency Medicine

Research Education includes:

- EMBRS course conducted by ACEP
- Monthly Journal Club

Administrative Rotation (third year) includes:

- Policy & Procedure Development
- Peer chart-review
- Coding & Billing
- QA/QI, and a QI project is required for each fellow
- Risk Management

D. RESEARCH

Research Expectations : Dr Karbanda

1. Communication
 - a. Speak with RD in person every 4 months
 - i. Idea generation
 - ii. IRB issues
 - iii. Grant writing
 - iv. Methods, study planning
 - v. Data collection issues
 - vi. Scientific meeting presentation
 - vii. Manuscript preparation
 - b. Communicate with co-investigators monthly
 - c. Updates on progress monthly to RD
 - i. Via email
2. Independence
 - a. Develop an idea
 - i. Identify a gap in knowledge
 - b. Make a timeline
 - c. Respect co-investigators time
 - i. Ask for help
 - ii. Plan ahead
 - d. Own your project
 - i. Read the literature in the area
 - ii. Don't be afraid to:

	SPR/PAS submission
April	Submission to Journals
May – June	Manuscript revisions

E. PEM JOURNAL CLUB

It has been noted that review articles and textbooks frequently give treatment advice inconsistent with available evidence at the time of writing.¹ This is particularly relevant in the emergency department environment where diagnostic and treatment decisions may directly influence morbidity and even mortality.

A responsibility you have during fellowship, and one that we share in helping you prepare for a career in caring for seriously ill or injured pediatric patients, is to develop skills in identifying and processing evidence in the medical literature for your decision making. We all share a lifelong responsibility to apply the best evidence to our patients and to continually refresh our understanding of this evidence. It is with this shared responsibility in mind that we wish to make PEM journal club a productive (fun and sociable, but productive) responsibility. It is our hope that when clinical questions arise in the PED, one of the first things that come to mind is, "We reviewed this at journal club," allowing you to make an informed clinical decision.

Our intent is thus twofold:

1. That we all learn and reinforce how to critically read and review a manuscript. To do so we read and discuss selections from "How to Read a Paper" by Greenhalgh and the Evidence Based Working Group's JAMA series "User's guides to the medical literature" and will attempt to integrate these with articles relevant to PEM practice.
2. That we apply the manuscript review and discussion to our daily practice of PEM.

Fellows are expected to attend journal club. Attendance records will be maintained because we need to do so in order to enable us to vouch for the comprehensive fellowship training we endeavor to provide for you. Fellows are expected to take the initiative to:

1. Identify a topic or topics for the PEM journal club with help from Dr. Kharbanda and Pediatric Toxicology Journal Club with help from Dr. Harris.
2. Perform a literature search and identify studies for review.
3. Critically read the manuscripts and complete the Article Review Summary.
4. Distribute the manuscripts to fellows and faculty AT LEAST 7 DAYS prior to journal club so that everyone can perform their own critical review.

Here is the format-

Basic items

- A. Select an article 2 weeks prior
- B. Circulate to all fellows and staff
- C. Send out a reminder

- D. Plan meeting with me (in person)
 - a. Review the stats
 - b. Review slides

Format of the Article Review

- A. Background
 - a. Why did they do the study
 - b. what gap in knowledge were they trying to tackle
 - c. what was their hypothesis and spec Aim
- B. Methods
 - a. study design, where conducted, type of hospital, years, types of patients enrolled
 - b. inclusion/exclusion criteria briefly highlighted - would you have selected the same?
 - c. overview of approach -
 - d. was this approach acceptable, how else could they have done it.
 - e. what potential limitations did they open up because of the study design
 - f. power calculation - would be nice to know - I can help you with this
- C. Results
 - a. review, walk people through there tables and data presented in the text
 - b. Highlight the major focus area of the study - the primary aim
- D. Discussion
 - 1. How can we apply this information to our patients
 - 2. Limitations?
 - 3. Do you buy the results? Was the study flawed?

Reference: Antman EM, Lau J, Kupelnick B et al. A comparison of results of meta-analyses of randomized control trials and recommendations of clinical experts. Treatments for myocardial infarction. JAMA 1992; 268(2):240-248.

(Suggested templates)

1. Metro Case Presentation

- a. A case you have personally been involved with.
- b. Format – PowerPoint presentation to include the following:
 - i. Chief complaint
 - ii. HPI/PE/labs/imaging – Copy the ED chart and have printouts of all pertinent documentation – e.g. labs/EKGs/Outside ED workups/consultant notes.
 - iii. Allow group to participate in generating differential diagnosis and plan
 - iv. Patient follow-up i.e. what ended up happening to them? This means getting printed up Op-notes, PICU paperwork, etc.
 - v. Literature review and discuss any evaluation or management controversies
 - vi. Take home points: Each case should have a “Pearl” associated with it, or why you were drawn to the case in the first place. This can be a clinical pearl,

interesting physical exam finding, unusual EKG tracing, discussion about management (you decide). At minimum there should be some work done for the presentation that makes this point. Thus, at least look up the diagnosis on e-medicine or Up-To-Date and review for the group.

2. Resuscitation cases

- a. A case you have personally been involved with or discussed with treating staff AND you think provides a starting point for a group discussion. (Examples from the past have included issues with long EMS resuscitations, or treatment of DKA patients with incorrect IVF, cases where the consultant did not agree with the attending assessment/plan). When choosing a case, ask yourself, how will this presentation change our management as a group? What will be my “Take Home Points”?
- b. Format – same as above with more in depth review of the literature pertinent to your take home point. This means at minimum a review of the topic using e-medicine, Up-To-Date, MEDLINE, reference texts and review articles.
- c. Supporting Items - Make sure to bring supporting items in case questions arise – (e.g. arrhythmia cases- copy EKGs, EMS rhythm strips, hypotensive shock patients where the choice of pressor is the issue – copy the resuscitation ED chart or the PICU one.
- d. Article - Bring one article to distribute to the group - can be review article, or trial, or case series (you decide).
- e. Subspecialty consultant: please invite subspecialty consultant to discuss the issue when applicable.

F. INSTITUTIONAL POLICY ON RESIDENT/FELLOW DUTY HOURS

The PEM Fellowship Program will be in compliance with the MN State requirements, ACGME, and GME Office policies (see current Health Partners GME Resident Handbook) regarding trainee work hours.

1. The average workweek will not exceed 80 hours in a four-week period.
2. Trainees will not be scheduled to work more than 24 consecutive hours
3. There will be at least one unscheduled 24-hour period each week.
4. Moonlighting time must be included in the above.
5. Trainees must adhere to the above, and bring potential non-compliance to the attention of a supervisor or the Program director when it is recognized.
6. PEM Fellows on non-Pediatric ED rotations are expected to conform to the above policy, as specified by the GME policy.

G. EVALUATION AND FEEDBACK PROCESS

PEM fellows will identify faculty with whom they have worked, and these faculty will be asked to evaluate the fellows via the RMS system. These evaluations will be reviewed by the

program director with the fellow at a semi-annual evaluation meeting. At the completion of the rotation, the trainee is required to evaluate the educational value of the rotation. The fellow should refer to the goals and objectives of the rotation when completing this evaluation.

Performance evaluations are routinely reviewed with each fellow at the time of semi-annual evaluations. If significant performance issues not previously addressed are encountered, they are addressed at that time. If a rotation attending identifies a performance problem, he/she is encouraged to discuss the problem with the trainee directly prior to the end of the rotation such that the trainee has time to correct the problem and successfully complete the rotation. Problems of an urgent nature regarding an individual trainee on a particular rotation are brought immediately to the attention of the program director. These issues are addressed by the program director with the trainee concerned without delay. Rotation evaluations that are completed by the trainee are reviewed by the Program Director. Feedback about rotations is also solicited at annual program reviews. If a consistent problem or concern is identified, the program director contacts the responsible rotation director about any concerns as well as ways in which the rotation might be improved.

H. SUPERVISION OF FELLOWS

Lines of supervisory responsibility: Clinical INSIDE CHILDREN'S EMERGENCY DEPARTMENTS -

First year fellow function as super-residents in the ED and staff all patients with an attending staff ED physician. This is the year to learn and gain experience in sedation skills and management of critically sick and injured patients. Second and third year fellows work more independently in a capacity of staff ED physician and review sedation options and management plan for sicker patients and as deemed necessary. They seek guidance for complex procedures and resuscitations. A staff physician is always in the ED to review with and guide fellows. Third year fellows do lead ED physician shifts with a staff ED physician in the ED as the backup. They carry the referral phone, code pager and complete daily QI/QA activities in the ED.

Fellows are to be made available and expected to participate in resuscitations and codes, under the supervision and guidance of an attending staff ED physician.

For patients seen by the core pediatric/family practice resident and supervised by the PEM fellow, the attending pediatric emergency medicine physician is responsible for providing appropriate supervision to the PEM fellow. Good communication and feedback is important to optimize both patient care and fellow education. If the fellow feels that he/she is not receiving adequate guidance/supervision, he/she must communicate this directly to the PEM Fellowship Program Director.

**Lines of supervisory responsibility: Clinical
OUTSIDE OF CHILDREN'S EMERGENCY DEPARTMENTS -**

The attending physician (emergency medicine or elective supervisor) is responsible for providing appropriate supervision to the PEM fellow. Good communication and feedback is important to optimize both patient care and fellow education. If the fellow feels that he/she is not receiving adequate guidance/supervision, he/she must communicate this directly to the attending physician. If the attending physician is not immediately available, the PEM fellow is responsible for reporting to the PEM Fellowship Program Director or other available faculty.

Lines of supervisory responsibility: Research / SCHOLARLY ACTIVITY -

PEM fellows are responsible for planning and executing their own research project, as well as writing up their results in the form of a manuscript to be submitted for peer review to a well-recognized journal. Support is available through CCIR, PEM fellowship director, ED research coordinator and Research director. The primary research mentor provides the supervision of fellow conducting individual research study. Periodic reviews with Scholarship Oversight Committee are required and a written progress report is to be sent to the PEM fellowship director. The Research Director is responsible for supervising the individual faculty research mentors to assure each fellow is working toward achieving the research goals. Concerns on the part of the PEM fellow should be directed first to the research mentor and, if unresolved, then to the PEM Fellowship Program Director.

I. MOONLIGHTING

You are required to notify your Fellowship Program Director of your moonlighting activities. Arrange your moonlighting schedule in such a way that you can fulfill all of your fellowship obligations.

Moonlighting will be monitored by the Fellowship Program Director and coordinator. Individuals deviating from the policies outlined above will be reviewed by the Fellowship Program Director. After deliberating the facts, the Director's recourse could include but is not limited to:

- Moonlighting **requires a prospective**, written statement of permission from the program director that will be made part of the fellow's file;
- Fellows are not required to engage in Moonlighting;
- Moonlighting activities will not be allowed to conflict with the scheduled and unscheduled time demands of the educational program and its faculty;
- Fellows need to report the moonlighting hours on RMS and to the Fellowship Coordinator who will keep track of hours;
- The fellow's performance will be monitored for the effect of these activities upon performance and that adverse effects may lead to withdrawal of permission; and
- Internal Moonlighting must be counted toward the 80-hour weekly limit on duty hours.
- Moonlighting that occurs within the fellowship program (Children's ED) will be counted toward the ACGME weekly limit on duty hours.
- The Program Director will review individuals deviating from the policies outlined above. After deliberating the facts, the director's recourse could include but is not limited to:

- Suspension of moonlighting privileges for a six (6) month probationary period (i.e. clinics and hospitals will be notified of those fellows ineligible for moonlighting)
- A permanent letter of reprimand will be placed in the fellow's academic file with the second infraction, and
- Suspension-without-pay from the fellowship program for a period of time commensurate with the infraction to be determined by the director following the third infraction; furthermore, all time missed must be made up in order to meet the American Board of Pediatrics thirty-six (36) month training requirement.

Professional liability insurance coverage for moonlighting is the responsibility of the fellow and/or the hiring institution.

J. TRANSITION OF CARE

Transition of care and hand-offs are done per Departmental practices. All patients being admitted would need a "Transition of Car" order placed and initiated before transfer. For patients with mental health needs, a Mental Health TOC order needs to be placed. During shift change in ED, please try to wrap up your patients during the last hour of your shift. If you need to hand off a patient to incoming physician, please review important history and exam findings, pertinent labs, pending studies and tentative plan for disposition. Please introduce the incoming physician to the patient/family and share the intended plan. Please also document hand-off in your documentation.

K. SUBSPECIALTY TRAINING REQUIREMENTS

1. Core Curriculum -

All fellowship programs participate in a core curriculum in scholarly activities. This curriculum provides experiences that lead to an in-depth understanding of biostatistics, clinical and laboratory research methodology, study design, preparation of applications for funding and/or approval of clinical or research protocols, critical literature review, principles of evidence-based medicine, ethical principles involving clinical research, and the achievement of proficiency in teaching. Participation in the core curriculum should lead to an understanding of the principles of adult learning and provide skills to participate effectively in curriculum development, delivery of information, provision of feedback to learners, and assessment of educational outcomes. We anticipate graduates will be effective in teaching both individuals and groups of learners in clinical settings, classrooms, lectures and seminars, and also by electronic and print modalities.

PEM division pays for "Emergency Medicine Basic Research Skills" (EMBRs) course conducted by American College of Emergency Physicians (ACEP). The Department Education Office offers an annual department-wide core curriculum series for pediatric subspecialty programs. A minimum of 75% annual participation is expected for all subspecialty trainees if they do not pursue an masters course or EMBRS. The core

curriculum is managed at the Department level to optimize training, while minimizing duplication of effort across the various subspecialty programs participating.

2. Scholarly Activities -

In addition to participating in a core curriculum in scholarly activities, all fellows will be expected to engage in projects in which they develop hypotheses or in projects of substantive scholarly exploration and analysis that require critical thinking. Areas in which scholarly activity may be pursued include, but are not limited to: basic, clinical, or translational biomedicine; health services; quality improvement; bioethics; education; and public policy. In addition to biomedical research, examples of acceptable activities might include a critical meta-analysis of the literature, a systematic review of clinical practice, a critical analysis of public policy, or a curriculum development project with an assessment component.

3. Work Product of Scholarly Activity -

Involvement in scholarly activities must result in the generation of a specific written "work product" as outlined by the ABP (www.abp.org). Examples of include, but are not limited to:

- A peer-reviewed publication in which a fellow played a substantial role
- An in-depth manuscript describing a completed project
- A thesis or dissertation written in connection with the pursuit of an advanced degree
- An extramural grant application that has either been accepted or favorably reviewed
- A progress report for projects of exceptional complexity, such as a multi-year clinical trial

The fellow's Scholarship Oversight Committee (SOC) is instrumental in guiding the fellow's activity towards an acceptable product. SOC will be arranged for each fellow by the program director. In addition to the work of the SOC, the department will provide all subspecialty fellows with the opportunity to participate in a departmental research, education, and scholarship forum to present their work product and receive feedback from department faculty.

4. Scholarship Oversight Committee (SOC) -

The SOC in conjunction with the trainee, the mentor, and the program director will determine whether a specific activity is appropriate to meet the ABP guidelines for scholarly activities (www.abp.org). These activities require active participation by the fellow and must be mentored. The mentor(s) will be responsible for providing the continuous ongoing feedback essential to the trainee's development.

Review of scholarly activity and the written work product will occur at the local level with each fellow having a SOC responsible for overseeing and assessing the progress of each fellow and verifying for the ABP that the requirement has been met. The SOC must consist of three or more individuals, at least one of whom is based outside the subspecialty discipline; the fellowship program director may serve as a trainee's mentor and participate in the activities of the oversight committee, but should not be a standing (i.e. voting) member. Particular emphasis will be placed on encouraging identification of committee members whose professional and research responsibilities encompass elements of the trainee's scholarly interest, but who do not necessarily have a primary appointment in the Department of Pediatrics. Examples of such individuals include faculty in clinical

departments in the University of Minnesota Academic Health Center (AHC), faculty in basic science departments, or faculty in the Schools of Public Health or Education.

This committee will:

1. Determine whether a specific activity is appropriate to meet the ABP guidelines for scholarly activity.
2. Provide guidance in charting a course of preparation beyond the core fellowship curriculum to ensure successful completion of the project.
3. Evaluate the fellow's progress as related to scholarly activity.
4. Meet with the fellow early in the training period (within 6 months of initiation of fellowship training) and regularly thereafter.
5. Require the fellow to present/defend the project related to his/her scholarly activity.
6. Advise the program director on the fellow's progress and assess whether the fellow has satisfactorily met the guidelines associated with the requirement for active participation in scholarly activities.

The fellow, in conjunction with the fellowship director or designee and research mentor, should identify the direction for the fellow's scholarly activity. At the first SOC meeting, the purpose will be to hear the general path the fellow has chosen, to help further outline the path, and determine the specific steps for the fellow to meet the outlined path. The SOC should meet again within 4-6 months of the first meeting and at least semi-annually thereafter to further update and guide the fellow on developing their scholarly path.

A written report by the chair of each trainee's SOC should be completed twice a year and forwarded to the fellowship program director. The Department Education Office will provide the subspecialty training programs with standard forms for documenting each SOC meeting. The fellowship director and the head of the fellow's SOC are expected to monitor whether additional SOC meetings are necessary for fellows who need more help or may be changing their scholarly activity.

The final responsibility of the SOC is to review and approve the final scholarly "work product" of the applicant prior to submission to the ABP.

The following is a list of faculty members who are willing to serve as mentors with a description of their research interests.

Arms, Joe is a full time, board-eligible PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. He also participates in fellowship candidate application review and interviews.

Blackwell, David is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. He is also one of two lead PEM physicians in charge of the department's information technology focus. He is responsible for orienting the subspecialty residents to our computerized tracking system.

Carolan, Patrick L is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities in the emergency department. He's the Director

of Resident Education in the Emergency Department at the Minneapolis campus, the Director of the SIDS foundation, and participates in fellowship candidate application review and interviews.

Erickson, Laura is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities. She also participates in the teaching faculty development program in the emergency department and conducts didactic lectures.

Fink-Kocken, Paula is a full time PEM department staff physician who supervises the fellows in patient care activities in the emergency department during their clinical rotations. She is the past subspecialty fellowship director and serves as an assistant to the current subspecialty fellowship director. She is also the lead staff physician for emergency preparedness and the director of EMS-C, and participates in fellowship candidate application review, interviews and selection.

Hetzel, Thomas is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities in the emergency department. He organizes the review of all the resuscitations that occur at the Minneapolis campus, and participates in fellowship candidate interviews.

Karpas, Anna is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. She's also a member of a research interest group and the Assistant Site Medical Director for the Minneapolis campus. She serves on SOC committees, provides didactic lectures, and participates in fellowship candidate interviews.

Klatzko, Martin D is the former Site Director of Emergency Medicine at the Children's Hospital of Minneapolis and a board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. He also participates in fellowship candidate interviews.

Stoudt, Adrianna is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. She is involved with PALS, as well as the simulation program, which is instrumental in teaching the fellows resuscitation scenarios via simulations with high fidelity mannequins.

Milner, Donna M is the Assistant Director of Emergency Medicine at the Children's Hospital of St. Paul and a board certified PEM department staff physician who supervises the fellows in patient care activities. She's a member of Fellowship Steering and SOC committees, and participates in fellowship candidate application review, interviews and selection for ranking. She also conducts didactic lectures.

Ortega, Henry W is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities. He's a member of a research interest group, and oversees pediatric education in the Emergency Department for adult residents of Region's Hospital at the St. Paul campus. He is a research mentor and provides didactic lectures.

Plouff, Robert is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. He's in charge of 48-hour returns, QI study and peer review of the PEM staff including the fellows.

Reid, Samuel R is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. He leads a research interest

group, conducts journal club and evidence-based medical reviews, and participates in fellowship interviews. He's also a research mentor.

Street, Kellee A is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities in the emergency department during their clinical rotations.

Wu, Betty is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. Formally, she was the Medical Director for PALS, is now a national PALS faculty member, and conducts the PALS instructor program. She participates in the supervision of fellows when they teach PALS.

Wussow, Katherine is a full time, board-certified PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. She participates in the teaching faculty development program in the Emergency Department, conducts didactic lectures, and serves on SOC committees.

Zenker, Paul is a full time, board-eligible PEM department staff physician who supervises the fellows in patient care activities during their clinical rotations. He's the Director of Resident Education in the Emergency Department at the St. Paul campus, and participates in teaching the faculty development program. He conducts didactic lectures, serves on SOC committees, and participates in fellowship candidate interviews.

5. External Oversight -

A program's ability to provide a satisfactory scholarly experience for all trainees will be evaluated periodically, as described below.

- The Pediatric Residency Review Committee (RRC) of the ACGME will be asked to review the training program's structure as it relates to the scholarly activity requirements.
- External periodic peer review of the quality of the training environment related to scholarly activity, in addition to that undertaken by the RRC, is highly recommended.

6. Responsibilities of the Training Program Director -

In addition to meeting the requirements of the ACGME related to the six general competencies, the responsibilities of the training program director shall include the creation of a core curriculum in scholarly activities, the identification of a mentor, the creation of the Scholarship Oversight Committee responsible for overseeing and assessing the progress of each trainee, and providing verification to the ABP of the successful completion of training.

It is the responsibility of the training director to review the SOC documentation and clarify the responsibilities and outcomes for each fellow. The SOC and the Fellowship Program Director are both accountable for scholarly progress of individual fellows and will share their recommendations with the Department Chair.

Verification of Scholarly Activity

Upon completion of training, the ABP will require:

- Verification from the training program director that the clinical and scholarly skills requirements have been met
- A comprehensive document (i.e. personal statement), written by the fellow, describing the scholarly activity that includes a description of his/her role in each aspect of the activity and how the scholarly activity relates to the trainee's own career development plan
- The actual "work product" of the scholarly activity as described above
- Signature of the fellow, program director, and members of the Scholarship Oversight Committee on both the personal statement and work product of the fellow as described above

The fellow will need to produce the work product and personal statement, as well as obtain approval from the SOC to be eligible to sit for the Subspecialty Board Examination. The decision about the adequacy of the work product is the responsibility of the SOC and the program director.

SECTION 3 – ROATIONS GOALS AND OBJECTIVES

(* Denotes core competency area: PC-patient care, MK-medical knowledge, ICS-interpersonal and communication skills, PR-professionalism, SBP-systems based practice, PBL-practiced based learning and improvement)

A. PEDIATRIC EMERGENCY MEDICINE

1. First Year

First 6 months:

- a. Focus on improving medical knowledge base by reading and discussing with staff physicians the common diagnosis and management of pediatric medical and surgical problems presented to the emergency department (ED). *MK
- b. Learn and implement appropriate ED management of common pediatric emergencies and urgencies including, but not limited to: respiratory distress, seizures, SVT, allergic reactions, toxic ingestions, HTN, hypoglycemia, DKA, meningitis, post-tonsillectomy bleeding, appendicitis, PID, intussusceptions, volvulus, febrile infant, fever and neutropenia, and testicular torsion. *PC
- c. Learn to use the electronic medical record and tracking system in ED. *SBP
- d. Learn communication skills with family and staff in ED during stressful situations, and communicate effectively with patients, families, nursing staff, EMS personnel, ancillary service personnel, referring physicians and consultants. *ICS, PR

- e. Learn and perform common pediatric procedures including, but not limited to: LP, laceration repair, reduction of commonly dislocated joints, esophageal bougienage, hernia reduction, I.O line placement, endotracheal intubations, splinting, and cardio version. Discuss potential complications of common pediatric procedures. *PC, PR
- f. Learn principles of sedation in ED and understand alternatives for, and implement, effective pain management. *PC, MK
- g. Learn to document so as to promote seamless patient care appropriate billing and a medico legally sound record. *SBP
- h. Use attending physicians as a resource for references, information, experience and style and staff all patients.*MK, PR
- i. Participate in educational opportunities at rotation site. *MK, PBL
- j. Participate in simulated resuscitations and mock codes. *MK, PBL

Final 6 months:

- a. The usage of electronic medical record and tracking system in ED and complete tasks efficiently. *SBP
- b. ED management of common pediatric emergencies and urgencies as noted above and should be well read with the evidence-based guidelines for the management of the same. *PC, MK
- c. Appropriate documentation of medical records of patients from the billing, medico legal and follow up aspect of patient care. *SBP
- d. Common ED procedures including but not limited to LP, Laceration repair, reduction of commonly dislocated joints, esophageal bougienage, hernia reduction, I.O line placement, endotracheal intubations, splinting, and cardio version. *PC, MK
- e. The principles of sedation in ED and plan a sedation strategy independently and implement it under the guidance of ED staff physicians. *PC, MK
- f. Communication with the health care team as well as patients and excellent bedside manners with complete understanding and consideration of patient privacy and confidentiality. *ICS
- g. Simulated mock codes and educational opportunities in all the rotations. *MK, PBL
- h. The use of attending physicians as resource for references, information, experience and style. *MK, PR

*** The first year fellow needs to be competent in all above areas in order to successfully transition to 2nd year.

2. Second Year

First 6 Months:

- a. Understand and discuss controversies in the ED management of common pediatric emergencies and urgencies and to become more confident in recognizing and managing these situations independently. *MK, SBP
- b. Understand and implement the ED management of life-threatening pediatric emergencies including, but not limited to: respiratory failure, shock, status epilepticus, increased intracranial pressure, altered consciousness, cardiac dysrhythmias, and cardiac arrest and electrolyte disturbances. *PC, MK
- c. Learn to perform effective resuscitative procedures including medical and trauma resuscitation under the guidance of an over-seeing staff physician present. *PC, MK, SBP
- d. Implement effective procedural sedation and to manage adverse reactions to sedation and techniques to overcome those reactions. *PC, MK
- e. Become more familiar with managing patient flow and patient flow issues within the ED setting and begin to develop ideas on how to improve patient flow. *SBP, PBL
- f. Become familiar with quality assurance tasks in ED i.e. reviewing and follow up of variances in x-ray readings, EKG readings, inter-facility transfers etc. *MK
- g. Learn to precept medical students and residents in the care of ED patients. This opportunity allows the fellow to become more adept and confident at teaching house-staff and provides a good opportunity to review current literature and practice guidelines, all while managing patients. *MK, PBL
- h. Polish the skills of effective communication with patients, families, nursing staff, EMS personnel, ancillary service personnel, referring physicians and consultants. *ICS
- i. Use attending physicians as a resource for references, information, experience and style. This will always be available to the fellow but it is encouraged that the fellow try and work out patient related issues on their own before deferring directly to a staff physician, unless urgency is required or the fellow feels uncomfortable in a particular clinical situation. *ICS, PR, SBP
- j. Participate in educational opportunities and initiate clinical research projects. *MK, PBL
- k. Continue to learn how to manage resuscitations using simulation and to begin to gain the ability to run codes and make medically relevant decisions concerning patients in the code situation. This will always be performed with an over-seeing staff physician present. *PBL, MK

Final 6 Months:

- a. Recognizing and managing common pediatric emergencies and urgencies and to be able to manage these situations independently. *PC, MK, PBL
- b. Understanding and implementing the ED management of life-threatening pediatric medical and trauma resuscitation. *PC, MK, PBL
- c. Performing resuscitative procedures competently and proficiently under over-seeing staff physician. *PC, PR

- d. Understanding and implementing effective procedural sedation and recognizing adverse reactions during sedations. *PC, MK
- e. Managing patient flow within the ED setting and to develop ideas on how to improve patient flow and support the lead ED physician. *PC, SBP
- f. Running the ED when on overnight shifts with onsite ED staff physician present for advice and back up. *PC, SBP
- g. Precepting medical students and residents in the care of ED patients. Participate in educational opportunities at rotation site and to be comfortable at implementing new teaching strategies. *MK, PBL
- h. Setting an example for junior house-staff and show confidence when communicating effectively with patients, families, nursing staff, EMS personnel, ancillary service personnel, referring physicians and consultants. *ICS, PR, PBL
- i. Documenting so as to promote seamless patient care and inter-facility transfer of patient. *SBP
- j. Actively participating and conducting clinical research and other scholarly activities. *PBL
- k. Demonstrating competence in resuscitations using simulation. *MK, PBL

*** The second year fellow needs to be competent in all above areas in order to successfully transition to 3rd year.

3. Third Year

First 6 months:

1. Be able to discuss controversies in the ED management of common pediatric emergencies and urgencies and support with literature. *MK
2. Be able to implement the ED management of life-threatening pediatric emergencies including, but not limited to: respiratory failure, shock, status epilepticus, increased intracranial pressure, altered consciousness, cardiac dysrhythmias, cardiac arrest and electrolyte disturbances. *PC, PBL
3. Perform resuscitative procedures for medical and trauma resuscitation. *PC, PR
4. Learn the responsibilities of lead physician and perform the QA tasks like culture follow-ups, answer pharmacy calls and staffing with charge nurse and nursing supervisor. *PBL, SBP
5. Learn to manage ED patient flow at a lead physician level and respond to codes in the hospital, direct ambulance traffic and provide medical guidance over the phone. *PC, SBP
6. Learn to manage ED as the physician in charge on overnights with onsite ED staff back-up. *PC, SBP
7. Be competent in teaching and implementing effective procedural sedation and become competent in precepting house staff in the care of ED patients. *MK, PBL
8. Be able to set example for junior house staff on how to communicate effectively with patients, families, nursing staff, EMS personnel, ancillary service personnel, referring physicians and consultants. *ICS, PR, PBL

9. Be competent in documenting so as to promote seamless patient care; appropriate billing and a medical legally sound record and facilitate inter-facility transfer. *SBP
10. Continue to use attending physicians as a resource for references, information, experience and style. *PC, PBL
11. Participate in educational opportunities at rotation site as the instructor and resource for information.*MK, PBL
12. Demonstrate competence in resuscitations using simulation. *MK, PBL
13. Participate in focused administrative time with medical directors and learn the administrative aspects like recruiting, staffing, patient complaints etc. *SBP, PBL
14. Complete the clinical research project and QI project. *SBP, PBL

Final 6 months:

1. Be competent in discussing controversies in the ED management of common pediatric emergencies and urgencies and support with literature. *MK
2. Be competent to teach and implement the ED management of life-threatening pediatric emergencies including, but not limited to: respiratory failure, shock, status epilepticus, increased intracranial pressure, altered consciousness, cardiac dysrhythmias, cardiac arrest and electrolyte disturbances. *PC, MK, PBL
3. Perform and teach resuscitative procedures for medical and trauma resuscitation. *PC, MK, PR, PBL
4. Be competent in the responsibilities of lead physician and perform the QA tasks like culture follow-ups, answer pharmacy calls and staffing with charge nurse and nursing supervisor. *ICS, SBP, PBL
5. Be proficient in managing ED patient flow at a lead physician level and respond to codes in the hospital, direct ambulance traffic and provide medical guidance over the phone. *PC, ICS, SBP, PBL

B. ADULT EMERGENCY MEDICINE

Contact: Matthew Morgan, MD. Regions Hospital

All PEM Fellows have four (4) required adult emergency medicine rotations as part of their PEM board eligibility requirements. Two are general adult emergency medicine rotations at Regions Hospital and are completed during the first year and second years. The other 2 rotations are accomplished during the second year of fellowship. The rotation in third year adult is done with a focus on trauma. The fourth month is a non-clinical rotation split between EMS and toxicology.

1. First Year:

1. Understand and discuss with staff physician appropriate ED evaluation and management of common emergencies and urgencies including, but not limited to: chest pain, coronary artery disease, STEMI, respiratory distress, asthma, COPD, HTN, stroke, pregnancy related complications, seizures, and toxic ingestions. *MK, ICS, PR

2. Learn and perform common emergency procedures including, but not limited to: LP, laceration repair, and reduction of commonly dislocated joints, reduction of fractures, splinting, line placement, endotracheal intubation, and cardioversion. *PC, MK
3. Learn the principles of FAST exam using bedside ultrasound.
4. Participate in educational opportunities at rotation site including conferences, animal lab, and workshops. *MK, PBL
5. Understand alternatives for, and implement, effective pain management. *MK, PBL
6. Discuss all patients with attending staff physicians. Be available to see patients in critical care room along with staff physician and take active role in resuscitations. *MK, ICS, PR

2. Second Year:

1. Gain autonomy in decision-making and approach to common medical emergencies and urgencies presented to the adult Emergency Department. *PC, MK
2. Participate in the diagnosis and treatment of adult and pediatric trauma by functioning as part of the trauma team. The second year fellow will be assigned a role in the trauma team at the beginning of the rotation and will respond whenever the trauma team is activated. *PC, MK, ICS, PBL
3. Demonstrate skills required for diagnosis and management of minor trauma and trauma cases not requiring resuscitation or activation of the trauma team. *PC
4. Gain experience in performing FAST ultrasound exams and become familiar with other uses of ultrasound in the emergency department setting. *PC, MK
5. Participate in the diagnosis and acute management of toxicological emergencies.
6. Demonstrate knowledge of the emergency medical system as it relates to the Emergency Department. *MK, PBL
7. Understand how to stabilize and transport seriously ill and injured patients before transfer to tertiary care centers. *MK, PBL

C. ANESTHESIA

Contact: Catherine Clinch, MD. Children's Hospitals & Clinics of Minnesota, St.Paul

1. Learn the process of evaluating and providing anesthesia care for patients undergoing general operating room procedures along with anesthesiologist and CRNA.
2. Learn how to review through preoperative assessment and assess for anesthesia risk. *PC, MK
3. Be able to skillfully place a peripheral intravenous catheter. *PC, PR
4. Be able to skillfully perform standard tracheal intubations in an average adult patient and pediatric patients. *PC, MK
5. Learn the skills to interact with nursing and surgical personnel to facilitate safe and efficient care in the operating room. *ICS, PR, PBL

D. EMERGENCY MEDICAL SERVICES (EMS)

Contact: Ralph Frascone, MD, Regions Hospital EMS Medical Director

1. Develop a basic understanding of the EMS system. *MK
2. Develop first hand experience of the various aspects of pre-hospital care.*PC, MK
3. Understand the role of the EMS Director. *MK
4. Understand the foundation of pre-hospital research/evidence-based medicine. *MK
5. Learn the expectations and role of the emergency department in disaster medicine. *MK
6. The fellow will have adequate knowledge in the following areas at the conclusion of the rotation: *PC, MK, ICS, PR, PBL
 - The steps involved in activating the EMS System:
 - Minneapolis 911 Center Orientation
 - Ambulance Dispatch Center Orientation
 - First-hand experience of pre-hospital care:
 - EMS Physician ride along
 - Ambulance ride along
 - Air-evacuation/transport ride-along (optional)
 - The role of Hospital EMS Director:
 - Meet with private hospital (North Memorial, Waconia Ridgeview) EMS Medical Director
 - Meet with county (HCMC) EMS Medical Director (John Hick, MD)
7. Conference Attendance
 - Fellow Conferences
 - Metro Conferences
 - Thursday morning conferences (Critical Care, Core, Cube)

EMSC Resources <http://www.childreinsnational.org/EMSC/PubRes/toolbox.aspx>

E. ADMINISTRATION

Contact: Manu Madhok, MD, PEM Fellowship Director

Goals:

1. Understand the relationship of Emergency Medicine to Hospital administration and committees. (ICS, PR)
2. Understand the administration of Pediatric Emergency Medicine Fellowship Program and participate in related activities. (ICS, PR)
3. Understand Quality Improvement process in Emergency medicine, understand PDSA cycle and participate in a QI project. (SBP, PBL)
4. Understand state and regional administrative control of Emergency medical Systems and Emergency Medical Services for Children. (SBP, MK)
5. Understand billing, medico-legal and parent complaints related issues in Emergency Department. (PC, PR)

Objectives:

1. Meet with Medical Director to discuss staffing, ED administration, recruitment and key performance indicators for ED. (ICS, PR)

2. Meet with Fellowship Director and participate in PEM fellowship related activities like PIF preparation, curriculum revision. Fellow will also participate in Internal review process for a training program. (ICS, PR)
3. Meet with Fellowship Director and participate in a QI project and present finding at ED staff meeting. (SBP, PBL)
4. Meet with Peer Review committee and attend a committee session. (ICS, PR)
5. Meet with EMSC director to learn the administrative and advocacy aspect of EMSC.(SBP)
6. Participate in a departmental LEAN process, if feasible. (SBP, PBL)
7. Meet with CMO of the hospital and understand the vision of the hospital and how it is reflected in hospital policies.(ICS, SBP)
8. Meet with Social Work lead to understand evaluation and referral issues with a behavioral patient. (PC, PR)
9. Meet with family liaison and risk management lead to learn the process of addressing parent complaints and strategies for dealing with a difficult and agitated parent. (ICS, PR)
10. Meet with physician lead for coding and billing and the coder for ED. (PC, PR)

F. RESEARCH

Contact: Manu Madhok, MD, Anupam Kharbanda, MD and Heidi Vander Velden, ED research coordinator

Upon completion of this rotation the PEM fellow will be able to: (PBL,SBK)

1. Perform background reading for research
2. Design of a hypothesis-driven PEM research project
3. Successfully negotiate the research approval process (Departmental, IRB, etc.)
4. Conduct of a hypothesis-driven PEM research project
5. Write-up the research findings as a paper suitable for peer-review/presentation at a scientific meeting
6. If applicable, meet the ABP research requirements for PEM sub-board certification.
7. Ultimately complete at least one PEM research project, working with a research mentor

*** Not all goals and objectives will be met during each rotation, but they should all be met by the completion of the training program.

(Description of Experience)

1. Research -

This program is extensive and is described below. It encompasses both the research project (experiential) and the formal course work components. There is an opportunity to pursue a Master's degree in Public Health through the University of Rochester. For those Fellows who choose to complete their Master of Science, their clinical load will be adjusted accordingly.

a. Research Project:

All Fellows are required to plan, design, and conduct a research project. A fellows project selection: may include a research project in an area currently being studied by faculty members of the Department of Emergency Medicine or Pediatrics, or in an

- area of interest to them. Research is primarily conducted in other University departments, with appropriate PEM faculty oversight. Department faculty regularly provides an annual summary of their research activities, and fellows are encouraged to collaborate on a research project with a particular faculty member. IRB approval is required. The Program Director must approve all PEM Fellows' research projects.
- b. Mentorship:
Mentorship is an important part of research training. Each fellow will have a mentor for his or her research.
- c. Presentation:
Presentation of research results is strongly encouraged. This is usually done at a national meeting of a Pediatric or Emergency Medicine research society. Fellows typically present their ongoing research at the annual national meeting of PEM fellows (attendance is funded by the Department).
- d. Publication:
In general, fellows must have a peer-reviewed research publication accepted to sit for the PEM Board Certification exam. We require fellows to submit at least one manuscript to a peer-reviewed journal.

Each PEM fellow is assigned a scholarly oversight committee (SOC) by the program director, which consists of members from the division of PEM and one from outside the division. Fellow's research mentor, once established, joins the SOC. There are two dedicated research months in the first year. Pediatric Emergency Medicine fellows meet with the Program Director, Research Director, Research Coordinator and their mentor to discuss ideas for research projects. They choose an area of research that is of greatest interest to them.

The first year Fellows attend Emergency Medicine Basic Skills Research workshop (EMBRs is a 3 week long, emergency medicine basic research skills course, conducted by American college of emergency physicians). They gain knowledge of research design, methodology, biostatistics, IRB application, and grant preparation. This is held over two sessions - November and April.

First year fellow also attends the PEM Fellows conference sponsored by AAP-section on emergency medicine. Here, they present their research project to peers and national faculty and receive constructive criticism to improve the project.

*The time line for scholarly activities in **first year** is as follows:*

- Mandatory course in protecting human subjects in research
- EMBRS: Emergency medicine basic research skills workshop, conducted by American college of Emergency physicians. PEM fellows are encouraged to attend this 99 credit hour workshop over sessions (11days and 4 days). The division of PEM pays for this completely. EMBRS holds two spots for Fellows yearly.
- Research interest group meeting, idea generation and mentor selection.
- Literature search and preparation of research protocol proposal.
- Presentation of research proposal at the AAP PEM Fellows conference and incorporating appropriate feedback.
- Meet with the research coordinator and statistician at Children's Research and Sponsored

programs

- Preparation of completed protocol for submission to IRB including background, hypothesis, inclusion criteria, exclusion criteria, methods, protocol, statistical analysis, benefits, risks, references, data collection sheets and consent form.
- Submission of grant to IRGP (Internal research grant program), if funding needed. The dates are in mid-September and mid-March.
- Work on a case report or emergiquiz case report at the American Academy of Pediatrics Annual meeting.

*The time line for scholarly activities in **second year** is as follows:*

- IRB approval and secure grant if needed for prospective study
- Study implementation and training of research assistants
- Data collection

*The time line for scholarly activities in **third year** is as follows:*

- Data Analysis
- Submit abstract to PAS or AAP
- Manuscript preparation

G. PEDIATRIC ICU

Contact: Kenneth Maslonka, MD. Children's Hospitals & Clinics of MN, Minneapolis

1. Improve knowledge base regarding ongoing monitoring and care of critical physiology derangements including, but not limited to: increased intracranial pressure, hypotension, respiratory failure, renal failure, coagulopathy, invasive infection and electrolyte disturbances. *PC, MK
2. Improve knowledge base regarding ongoing monitoring and care of critically ill pediatric patients injured by trauma or burns. *PC, MK
3. Learn and perform critical care procedures, including, but not limited to: central venous access, endotracheal intubation and tube thoracostomy. *PC, MK
4. Participate in procedural sedation. *PC, MK, PR
5. Participate in the transport of critically ill children both within and between hospitals.
6. Participate in end-of-life care and discussions regarding organ donation. *PC, PBL
7. Gain knowledge regarding common problems suffered by technology dependent children and become familiar with their management. *PC, ICS, PBL

H. SEDATION

Contact: Patricia Scherrer, MD. Children's Hospitals & Clinics of MN, Minneapolis

1. Demonstrate effective communication with patients, their families, and professional associates (*ICS).
2. Demonstrate respect, compassion, and integrity (*PR).
3. Understand basic pediatric airway assessment (*PC, *MK)
4. Understand the anatomical and physiological differences between adult and pediatric airways (*PC, *MK)

5. Learn the common drugs used in sedation and their pharmacology. *MK
6. Learn the potential complications and means to prevent, identify and treat them. *MK
7. Understand and be able to answer following sedation questions- *PC, MK,PBL
 - How to set up sedation?
 - What type of monitoring must occur during sedation and who is responsible for monitoring?
 - What are NPO or Fasting guidelines?
 - What is the difference between minimal, moderate and deep sedation?
 - How to obtain consent for sedation?
8. Learn the common drugs used in sedation and their pharmacology. *MK
9. Learn the potential complications and means to prevent, identify and treat them. *MK
10. Review sedation provider course and complete the test at the end of rotation *MK,SBP

I. TOXICOLOGY

Contact: Carson Harris, MD. Region's Hospital Toxicology Service Director

1. Develop a foundation of toxicological knowledge.*MK
2. Understand common poisonings. *MK
3. Develop knowledge of resources needed to evaluate less common exposures. *MK, PBL
4. Develop a high level of comfort in the management of overdose and poisoned patients. *PC, MK
5. Understand the role of a Poison Center plays in the community (prevention, home treatment follow-up, veterinary calls. *MK, PBL
6. The fellow will have adequate knowledge in the following areas at the conclusion of the rotation: *MK
 - General Approach to the Poisoned Patient
 - Gastro-intestinal Decontamination
 - Charcoal: single and multiple dose
 - Gastric lavage and NG suction
 - Whole Bowel Irrigation
 - General Toxins
 - Heterocyclic Anti-depressants
 - SSRI's and Serotonin Syndrome
 - Lithium
 - Barbiturates
 - Phenothiazines
 - Phenytoin
 - Opioids
 - Clonidine
 - Toxic Alcohols: ethanol, isopropranolol, methanol, and ethylene glycol.
 - Cocaine
 - Amphetamines
 - Hallucinogens
 - Salicylates
 - Acetaminophen
 - Iron

- Hydrocarbons
- Caustic Ingestions
- Organophosphates
- Mushrooms
- Cyanide and Carbon Monoxide
- Digitalis, Beta-Blockers, and Calcium Channel Blockers
- Envenomations: snakes, spiders and scorpions

Rotation sites:

- Region's Toxicology Service Dr. Carson Harris
- Hennepin County Poison Control Center

J. TRAUMA

Contact: Matthew Morgan, MD. Regions Hospital

1. Have ATLS certification prior to rotation. *PC, MK, PBL
2. Understand the nature of a team approach to trauma victims. *MK, ICS, PR, PBL
3. Thoroughly understand the importance of the primary and secondary survey. *PC, MK
4. Learn procedures, which may include: central line, surgical airway, and thorocostomy tube placement. *PC, MK
5. Recognize the difference between "stable and critical" trauma victims. *PC, MK
6. Understand the management guidelines between blunt and penetrating trauma. *PC, MK
7. Understand the management plans for orofacial and head trauma. *PC, MK
8. Understand the management plans for neck trauma and spinal shock. *PC, MK
9. Understand the management plans for chest and abdominal trauma. *PC, MK
10. Be able to identify and manage fractures or other abnormalities of the vertebral bodies, ribs, long bones, etc. *PC, MK
11. Understand the appropriate imaging modalities when approaching the trauma victim. *PC, MK, PBL

K. NEONATAL ICU (for the Emergency Medicine trained fellow)

Contact: Bruce Ferrera, MD. Children's Hospitals & Clinics of MN, Minneapolis

Through active care and management of patients in the neonatal intensive care unit (NICU) and the newborn nursery, as appropriate, under the supervision of the attending neonatologist, the fellow will learn to and gain skill in:

1. Perform/performing histories and physical examinations on neonates, and recognize abnormal physical findings. *PC, MK, ICS, PR
2. Recognize/recognizing the seriously ill neonate requiring admission to the NICU with special emphasis on the following common problems: * PC, MK, ICS, PR, SBP
 - Meconium aspiration
 - Patent ductus arteriosus
 - Neonatal sepsis
 - Jaundice

- Rh sensitization
 - Respiratory failure/Hyaline membrane disease
 - Pneumothorax
 - Necrotizing enterocolitis
3. Differentiate/differentiating between compensated, uncompensated and terminal shock. *PC, MK
 4. Perform/performing resuscitation of seriously ill neonates, including resuscitation of hypovolemic and septic shock. *PC, MK, ICS, PR, SBP, PBL
 5. Recognize/recognizing the neonate in respiratory distress. *PC, MK
 6. State/stating the indications for endotracheal intubation, and perform/performing endotracheal intubation in neonates. *PC, MK
 7. Perform/performing arterial puncture for blood gas examination in neonates. *PC
 8. Recognize/recognizing the neonates with inspiratory stridor, and state/stating the differential diagnosis of stridor. *PC, MK
 9. Manage/managing neonates with respiratory failure of various etiologies. *PC, MK, PR, SBP, PBL
 10. Select/selecting appropriate settings for mechanical ventilation in neonates. *PC, MK
 11. Compare/comparing and contrast/contrasting clinical presentations and management of different types of congenital heart disease. *PC, MK, ICS, SBP, PBL
 12. Recognize/recognizing the cyanotic neonates, and state/stating causes of cyanosis in children of all ages. *PC, MK, PR, ICS, SBP, PBL
 13. Recognize/recognizing the neonate in congestive heart failure. *PC, MK, ICS, PR, SBP, PBL
 14. State/stating the clinical manifestations of bacteremia, sepsis, meningitis, and pneumonia in neonates. *PC, MK
 15. Select/selecting appropriate antibiotic therapy for sepsis, meningitis, and pneumonia in neonates. *PC, MK, SBP
 16. State/stating the principles of patient management with regard to ventilator management and weaning, intravenous fluid therapy, antibiotic therapy, and nutritional support. *PC, MK, SBP
 17. State/stating the differential diagnosis and appropriate workup of petechiae in children. *PC, MK, ICS, PR, SBP, PBL
 18. Perform/performing APGAR scoring, estimation of gestational age, interpretation of chest radiographs, positioning of airway, suctioning meconium, oxygen therapy, direct laryngoscopy, bag-mask ventilation, umbilical vein and artery catheterization, chest transillumination, tube thoracostomy, and endotracheal intubation in neonates. *PC, ICS, PR
 19. Recognize/recognizing the signs and symptoms of increased intracranial pressure in neonates. *PC, MK, ICS, PR, SBP, PBL
 20. State/stating the differential diagnosis of seizures in neonates, and select/selecting appropriate therapy for the acute management of the child with seizure. *PC, MK, ICS, PR, SBP, PBL
 21. Perform/performing venipuncture and intravenous access techniques on critically ill neonates. *PC, ICS, PR
 22. Manage/managing fluid and electrolyte and acid-base disorders in neonates. *PC, MK, ICS, PR, SBP, PBL

L. PEDIATRIC OUTPATIENT CLINICS (for the Emergency Medicine trained fellow)

Contact: Sheldon Berkowitz, MD. Children's Hospitals & Clinics of MN, Minneapolis

GOAL 1: Learn and demonstrate professionalism.

OBJECTIVES *PR

1. Show and act with integrity, reliability and accountability in daily work.
2. Demonstrate respect for others in all contexts, including patients, parents, support staff, nursing staff, peers, medical students, and attendings.
3. Adhere to current laws regarding patient privacy.
4. Show knowledge of one's own clinical limitations.
5. Present oneself respectfully with regard to speech, behavior and appearance.
6. Show commitment to on-going learning by attending conferences, reading medical literature, and acknowledging and responding to feedback.
7. Demonstrate the recognition of varying cultural values and beliefs that impact medical care.

GOAL 2: Acquire the knowledge to evaluate and manage common acute general pediatric problems; learn phone management of pediatric symptoms and illnesses.

OBJECTIVES *PC, MK, PBL

1. Demonstrate the ability to locate multiple resources in the practice of evidence-based medicine.
2. Interpret principles of evidence-based medicine; apply knowledge appropriately in clinical situations.
3. Implement strategies to improve knowledge base including attending conferences, utilizing medical information, asking relevant questions and seeking feedback.
4. Demonstrate initiative in teaching students and residents in an enthusiastic and effective manner.
5. Review the differential diagnoses and diagnostic approach to the following presenting problems:

fever	headache	dysuria
rhinitis	seizure	hematuria
sore throat	facial weakness	chest pain
cough	edema	dizziness
wheezing	bruising	syncope
earache	abdominal pain	limb pain
red eye	vomiting	limp
mouth sores	diarrhea	vaginal discharge
nosebleed	hematemesis	skin rashes
neck mass	excessive crying	hair loss
stridor	lymphadenopathy	minor trauma
	noisy breathing	

6. Discuss the management and follow-up of the following diagnoses:

upper respiratory infection	migraine headache
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sinusitis
allergic rhinitis
epistaxis
strep pharyngitis
stomatitis
allergic conjunctivitis
infectious conjunctivitis
otitis externa
dacryostenosis
otitis media
pneumonia
asthma
bronchiolitis
gastroenteritis
gastroesophageal reflux
functional complaints
colic
febrile seizure
Bell's palsy

urinary tract infection
alopecia areata
tinea capitis
tinea corporis
tinea versicolor
infectious exanthems
contact dermatitis
infestations
seborrhea
vaginitis
cervical adenitis
costochondritis
child abuse
Henoch-Schonlein purpura
transient synovitis
vasodepressor syncope
urticaria
milk protein allergy
croup

7. Identify patients with conditions necessitating intervention beyond office primary care; utilize office procedures to triage, stabilize and transport ill patients.
8. Demonstrate judicious use and interpretation of laboratory and radiological studies.
9. Demonstrate ability to perform procedures commonly required in the ambulatory setting including:
 - cerumen removal
 - minor incision and drainage
 - splinting of minor fractures and sprains
 - administration of nebulizer treatments
 - cryotherapy
 - chemocautery
 - fluorescein application
 - foreign body removal
 - suture/staple removal
10. Distinguish urgent from non-urgent problems by gathering appropriate historical information over the telephone.
11. Demonstrate proper telephone management for acute general pediatric problems not requiring an office visit; document calls completely.

GOAL 3: Develop skill in providing individualized patient care.

OBJECTIVES *PC

1. Demonstrate performance of both complete and problem-focused patient histories; include chief complaint, history of present illness, past/family/social history, and review of systems.

2. Gather complete patient histories utilizing supplemental information when necessary including the patient chart, referring physician, Emergency Department record, laboratory and radiology results, etc.
3. Interview and examine patients showing an appreciation for their age and developmental level.
4. Define the unique issues involved in managing the acute problems of special needs patients (e.g. patients with genetic syndromes, cerebral palsy, prematurity, or status-post transplant, etc.)

GOAL 4: Become familiar with office management procedures and financial considerations as they relate to ambulatory pediatric care.

OBJECTIVES *SBP, PBL

1. Plan the daily patient schedule and communicate this to the office personnel.
2. Assist in forms completion, prescription renewal, and referral requests as needed.
3. Discuss the following financial and insurance issues as they pertain to the care of children or adolescents:
 - Procedures for obtaining approval for necessary services from managed care companies
 - Use of a managed care formulary
 - Care of an uninsured child
4. Demonstrate commitment to cost-effective health care, recognizing resource limitation and striving to contain costs while still advocating for necessary care.
5. Function as the coordinator of the health-care team, working with other health care professionals and community resources on the patient's behalf.

GOAL 5: Develop the communication skills necessary for a therapeutic relationship with patients, parents, nurses, sub-specialists, emergency departments and ancillary staff.

OBJECTIVES *ICS, PR

1. Consistently introduce self and other members of the health-care team; explain the roles of each member.
2. Communicate effectively with the patient/care-giver at an appropriate developmental level; use interpreter services when necessary.
3. Check for patient/care-giver understanding by using effective listening techniques and encouraging questions.
4. Provide accurate and appropriate patient/care-giver/family education while showing empathy and acceptance.
5. Communicate effectively with other members of the health-care team; maintain an accurate and legible medical record and/or correspondence.

GOAL 6: Learn practice-based medicine in the pediatric office setting.

OBJECTIVES *PBL

1. Demonstrate willingness to learn from errors; use feedback to identify areas for improvement and seek opportunities to strengthen deficits in knowledge and skill.
2. Demonstrate the value of patient education by simplifying and presenting information to patients in an effective manner.

3. Demonstrate the ability to effective search and synthesize current medical literature as it relates to patient care issues.
4. When in the teaching role, assess the educational needs of the learners and assist and engage learners in the educational process.

(Assigned Reading)

Behrman RE, Kliegman RM, Jenson HB. Nelson Textbook of Pediatrics 17th ed. Saunders;2003.

Chung EK, Boom JA, Datto GA, Matz PS. Visual Diagnosis in Pediatrics 1st ed. Lippincott Williams & Wilkins;2006.

Hoekelman RA, Adam HM, Nelson NM, Weitzman ML, Hoover Wilson M. (Eds). Primary Pediatric Care 4th ed. Mosby; 2001.

Jones K. Smith's Recognizable Patterns Of Human Malformation 6th ed. Saunders;2005.

McMillan JA, DeAngelis CD, Feigin RD, Warshaw JB. Oski's Pediatrics: Principles and Practice 3rd ed. Lippincott Williams & Wilkins;1999.

Pickering LK. Red Book: 2006 Report of the Committee on Infectious Diseases (Red Book Report of the Committee on Infectious Diseases) 27th ed. American Academy of Pediatrics;2006.

Schmitt BD. Pediatric Telephone Advice: Guidelines for the Health Care Provided on Telephone Triage and Office Management of Common Childhood Symptoms 1st ed. Little Brown & Co;1980.

Schwartz MW (Ed). The 5-Minute Pediatric Consult 3rd ed. Lippincott Williams & Wilkins;2002.

Zitelli BJ, Davis HW. Atlas of Pediatric Physical Diagnosis 4th ed. Mosby;2002.

M. PEDIATRIC INPATIENT SERVICE (for the Emergency Medicine trained fellow)

Contact: Emily Chapman, MD and Peter Melchert, MD Children's Hospitals & Clinics of MN, Minneapolis

GOAL 1: Provide family-centered patient care in the inpatient pediatric setting that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

OBJECTIVES *PC, MK, ICS, PR, SBP

1. Gather essential and accurate information about the patient using the following clinical skills in a developmentally and age appropriate manner: medical interviewing, physical examination, and diagnostic studies.
2. Make informed diagnostic and therapeutic decisions based on patient information, current medical evidence and clinical judgment using effective clinical problem-solving skills, within the limitations of one's knowledge and expertise, and appropriate consultation.
3. Develop and carry out patient care plans in an efficient and prioritized fashion taking into account the restraints of time and the needs, beliefs and resources of the family.
4. Provide/participate in care across the full continuum of services, including presentation of acute illness, decision to admit to the hospital, acute inpatient care, decision to transfer to and out of a critical care unit, discharge planning and post-hospital care.
5. Educate and counsel patients and their families in an effective and empathic manner so they can understand their illness, actively participate in their care, make informed consent and adhere to measures to enhance health and prevent disease.
6. Perform and/or prescribe competently the medical procedures listed in **PEDIATRIC INPATIENT CARE APPENDIX A** while becoming familiar with those procedures commonly used by subspecialists and other professionals who care for children.

GOAL 2: Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge, and demonstrate the ability to acquire, critically appraise and apply this knowledge as it pertains to inpatient pediatric care.

OBJECTIVES * PC, MK, PBL

1. Demonstrate that one can efficiently access and critically appraise current medical information and integrate this information with clinical judgment and individual patient preferences to patient care.
2. Implement strategies to improve knowledge base including attending conferences, utilizing medical information, asking relevant questions and seeking feedback.
3. Review the differential diagnosis and diagnostic approach to the signs and symptoms outlined in **PEDIATRIC INPATIENT CARE APPENDIX B**
4. Discuss the assessment, management and follow-up of the common inpatient conditions outlined in **PEDIATRIC INPATIENT CARE APPENDIX C**.
5. Understand the indications, limitations and interpretation of the common laboratory tests and imaging studies utilized in inpatient care as outlined in **PEDIATRIC INPATIENT CARE APPENDIX D**.

GOAL 3: Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families and health professionals.

OBJECTIVES *ICS

1. Communicate effectively in a developmentally appropriate manner with patients and families to create and sustain a therapeutic relationship across the broad range of socioeconomic and cultural backgrounds.
2. Check for patient and family understanding by using effective listening techniques, encouraging questions and eliciting verbal understanding.

3. Communicate effectively with other health professionals including physician members of the health care team, referring physicians, consulting physicians, nurses and ancillary staff.
4. Maintain complete, accurate, timely, legible and legally appropriate medical records in the inpatient pediatric setting.
5. Competently demonstrate the communication skills outlined in **PEDIATRIC INPATIENT CARE APPENDIX E**.

GOAL 4: Apply principles of practice-based learning in the inpatient pediatric setting.

OBJECTIVES *PBL

1. Demonstrate willingness and capability to be a life-long learner by pursuing answers to clinical questions using medical literature, textbooks, information technology, patients, colleagues and formal teaching conferences.
2. Use principles of evidence-based medicine to integrate current best evidence into daily practice and evaluate process to improve one's own patient care practice.
3. Incorporate self-assessment and feedback into plan for professional growth and practice improvement.
4. Demonstrate initiative in teaching students and residents in an enthusiastic and effective manner.

GOAL 5: Show professionalism by demonstrating a commitment to carrying out responsibilities, adherence to ethical principles, and sensitivity to diversity.

OBJECTIVES 5 *PR

1. Demonstrate integrity, commitment, responsibility and accountability in daily work.
2. Maintain a professional and respectful relationship with patients, families, physician colleagues, medical students, nurses, other health care professionals and ancillary staff.
3. Meet high standards of legal and ethical behavior including adherence to current laws regarding patient privacy.
4. Present oneself respectfully with regard to speech, behavior and appearance.
5. Demonstrate sensitivity and responsiveness to patients' and colleagues gender, age, culture, disabilities, ethnicity and sexual orientation.

GOAL 6: Using a systems-based practice approach, understand how to practice high quality health care and advocate for patients in the inpatient hospital setting.

OBJECTIVES *PC, SBP

1. Deliver quality health care in the inpatient setting in a cost-effective manner while recognizing limitations in resources.
2. Work with all members of the health care team including unit clerks, nurses, therapists, technicians, laboratory personal, physicians, social workers and discharge planners to assess, coordinate and improve patient care.
3. Gain appreciation for different reimbursement strategies on the inpatient setting and how they control health care costs and effect the allocation of resources.
4. Advocate for patients' and their families by assisting them with the complexities of the hospital setting and identifying resources to meet their needs.
5. Acknowledge medical errors and participate in practice systems to prevent them.

Appendix A

List of Procedures & Skills

1. Venipuncture
2. Phlebotomy by arterial puncture
3. Intravenous catheter placement & management of complications
4. Lumbar puncture
5. Bladder catheterization
6. Suprapubic aspiration
7. Naso/orogastric tube placement
8. Gastric suction/lavage
9. Medication delivery (IV, IM, PO, etc.)
10. Universal precautions
11. Sterile technique
12. Physiologic monitoring of vital signs/pulse oximeter
13. Suctioning nares/oropharynx
14. Inhalation equipment
15. Oxygen delivery systems
16. I&D, simple abscess
17. Aspiration, simple abscess
18. PICC(prescribe only)
19. Central line, use and care
20. Interpret basic radiographs
21. Interpret EKG
22. Sedation

Appendix B

List of Signs and Symptoms

1. Failure to thrive
2. Weight loss
3. Fever without localizing signs
4. Constitutional symptoms
5. Hypotension
6. Hypertension
7. Syncope
8. Heart murmur
9. Shock
10. Rashes
11. Petechiae
12. Purpura
13. Ecchymoses
14. Urticaria
15. Edema
16. Conjunctival injection
17. Polydipsia
18. Polyuria
19. Diarrhea

20. Vomiting
21. Dehydration
22. Inadequate intake
23. Dysphagia,
24. Abdominal pain
25. Abdominal masses
26. Gastrointestinal bleeding
27. Jaundice
28. Ascites
29. Hematuria
30. Oliguria
31. Dysuria
32. Pelvic pain
33. Abnormal vaginal bleeding
34. Pallor
35. Abnormal bleeding
36. Lymphadenopathy
37. Hepatosplenomegaly
38. Limp
39. Arthritis/arthralgia
40. Limb pain
41. Seizures
42. Headache
43. Lethargy
44. Weakness
45. Ataxia
46. Vertigo
47. Irritability
48. Conversion symptoms
49. Child abuse or neglect
50. Increased work of breathing
51. Cyanosis
52. Apnea
53. Dyspnea
54. Tachypnea
55. Wheezing
56. Stridor
57. Cough
58. Hemoptysis
59. Chest pain

Appendix C

List of Common Conditions

1. Failure to thrive,
2. Fever of unknown origin
3. Status asthmaticus

4. Acute and significant drug allergies/reactions
5. Diabetes mellitus
6. Gastroenteritis, including with
7. Dehydration
8. Electrolyte abnormalities
9. Acidosis;
10. Gastroesophageal reflux
11. UTI/pyelonephritis,
12. Nephrotic syndrome
13. Glomerulonephritis
14. Neutropenia
15. Sickle cell crisis and other complications
16. Thrombocytopenia
17. Anemia
18. Common malignancies
19. Adverse reactions and complications of chemotherapeutic agents
20. Cellulitis
21. Periorbital and orbital cellulitis
22. Cervical adenitis
23. Pneumonia (viral or bacterial)
24. Laryngotracheobronchitis
25. Meningitis (bacterial or viral)
26. Sepsis/bacteremia
27. Osteomyelitis
28. Pelvic inflammatory disease
29. Septic arthritis
30. Shunt or line infection
31. Infectious complications of HIV infection
32. Seizures
33. Acute medical conditions in children with special needs
34. Developmental delay
35. Apnea and apparent life threatening events
36. Airway obstruction
37. Cystic fibrosis and it's complications

Appendix D

List of Laboratory and Imaging Studies

Laboratory Studies

1. CBC with differential, platelet count, indices
2. Blood chemistries: electrolytes, glucose, calcium, magnesium
3. Renal function tests
4. Tests of hepatic function and damage
5. Serologic tests for infection (e.g., hepatitis, HIV)
6. CRP, ESR
7. Drug levels
8. Coagulation studies

9. Arterial, capillary, and venous blood gases
10. Cultures for bacterial, viral, and fungal pathogens
11. Urinalysis
12. CSF analysis
13. Gram stain
14. Stool studies

Imaging Studies (Inpatient)

15. Chest radiograph
16. Abdominal radiographs
17. Lateral neck radiographs

Appendix E

List of Communication Skills

1. Pediatric History Taking
2. Verbal presentation of complete history and physical
3. Verbal presentation of an established patient
4. Giving discharge instructions to patients and families
5. Physician-to-physician handoff
6. Written history and physical
7. Written progress notes
8. Dictated discharge summaries
9. Discharge progress notes
10. Communication with primary care physician
11. Arranging consultation

(Assigned Reading)

Behrman RE, Kliegman RM, Jenson HB, eds. Nelson's Textbook of Pediatrics. 17th ed. Philadelphia; WB Saunders: 2004.

Hurwitz S, ed. Clinical Pediatric Dermatology: A Textbook of Skin Disorders of Childhood and Adolescence. 2nd ed. Philadelphia; WB Saunders Co: 1993.

Pickering LK, ed. Red Book, Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village; American Academy of Pediatrics: 2003.

Zitelli BJ, Davis HW, eds. Atlas of Pediatric Physical Diagnosis. 4th ed. Philadelphia; Mosby – Year Book, Inc: 2002.

N. CHILD ABUSE EVALUATION (for the Emergency Medicine trained fellow)

Contact: Mark Hudson, MD. (MCRC) Midwest Children's Resource Center, Children's Hospital, St. Paul

GOAL 1: Patient Care: Provide family-centered patient care that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

OBJECTIVES *PC, MK, ICS, PR, SBP

1. Consistently gather accurate and appropriate information for each patient encounter
2. Perform thorough and capable physical examinations on children across age range
3. Obtain a history and complete a physical examination for a patient who is a suspected victim of physical abuse, sexual abuse, and/or neglect
4. Provide capable management plan and follow-up for children identified as victims of physical abuse, sexual abuse, and/or neglect

GOAL 2: Medical Knowledge: Residents must demonstrate proficiency in obtaining knowledge through didactic lecture, discussion on cases, specific readings, online and through reference literature.

They will apply an open-minded, analytical approach to acquiring new knowledge, access and critically evaluate current medical information and scientific evidence, and apply this knowledge to clinical problem-solving, clinical decision-making, and critical thinking.

OBJECTIVES * PC, MK, PBL

1. Demonstrate basic knowledge pertinent to identification of child sexual abuse, Including
 - Describe normal anatomy of genitalia and clinical significance of normal genital evaluations
 - Describe features on physical examination that are concerning for ordiagnostic of sexual abuse
 - Identify the important historical components when evaluating for suspected sexual abuse
 - Identify the appropriate medical work-up required for a variety of clinical vignettes of possible child maltreatment
2. Demonstrate mastery of basic knowledge pertinent to identification of child physical abuse and neglect, including
 - Describe features on physical examination that are concerning for physical abuse and neglect
 - Identify the important historical components when evaluating for suspected physical abuse or neglect
 - Identify radiologic findings based on child's age and development that are concerning and highly specific for physical abuse
3. Demonstrate content knowledge of outlined learning materials provided by CPP staff
4. Describe the components of forensically valid interviewing techniques.

GOAL 3: Interpersonal and Communication Skills: Residents are expected to consistently demonstrate interpersonal and communication skills that result in effective information exchange. They must be able to collaborate with patients, their families and professional associates.

OBJECTIVES *ICS

1. Effectively communicate with other staff, community- and hospital-based physicians, and community service providers

2. Consistently communicate relevant information through accurate dictations and patient presentations
3. Lead group discussion on a particular topic during the rotation
4. Avoid medical jargon when speaking with patients and their families
5. Demonstrate consistent ability to communicate with patients from a wide range of backgrounds
6. Practice effective conflict resolution when appropriate
7. Appropriately use interpreters
8. Demonstrate the ability to counsel and educate patients and their families in a comprehensible and supportive manner

GOAL 4: Practice-Based Learning and Improvement: Residents are expected to investigate and evaluate patient care practices, appraise and assimilate clinical information to make appropriate patient management decisions and learn from error.

OBJECTIVES *PBL

1. Critically review the current pediatric child protection literature and web-based information
2. Evaluate their own performance, identify knowledge gaps, and target their learning to fill these gaps
3. Learn from errors, which are reviewed by attending staff within a clinical context
4. Observe formal forensic interviews
5. Provide, request and accept feedback
6. Work well with other learners to enhance knowledge

GOAL 5: Professionalism: Residents are expected to consistently demonstrate a commitment to carry out professional responsibilities, adhere to ethical principles and be sensitive to diversity.

OBJECTIVES 5 *PR

1. Consistently act in the best interests of patients
2. Demonstrate a caring and respectful demeanor when interacting with patients and their families
3. Maintain patient/family confidentiality
4. Demonstrate sensitivity to ethical principles, culture, age, gender, religious belief, sexual orientation, and disability
5. Conscientiously follow hospital procedures for reporting suspected child maltreatment
6. Be conscientious, punctual, reliable
7. Demonstrate skill in management of challenging patients and families, and of difficult and demanding circumstances

GOAL 6: Systems-Based Practice: Residents are expected to consistently practice quality health care that is cost-effective and advocate for patients within the health care system. They are expected to consistently demonstrate an understanding of the interconnectedness and dependence of multidisciplinary services.

OBJECTIVES *PC, SBP

1. Consistently advocate for their patients and families as they navigate system

- complexities
2. Demonstrate knowledge of state mandatory reporting laws
 3. Demonstrate knowledge of proper reporting and submission of PRE when there is a suspicion of child maltreatment
 4. Demonstrate knowledge of court proceedings regarding child maltreatment.
 5. Actively participate in weekly multidisciplinary team meetings.
 6. Summarize risk factors/stressors in society, families, parents, children and the environment that are associated with child maltreatment.
 7. Demonstrate knowledge of local and national resources for child maltreatment victims and their families

(Assigned Reading)

Adams JA, Kaplan R, Starling SP, et al. Guidelines for medical care of children who may have been sexually abused. *J Pediatr Adolesc Gynecol* 2007;20:163-172.

Barsness KA, Eun-Suk C, Bensard DD, et al. The positive predictive value of rib fractures as an indicator of nonaccidental trauma in children. *J Trauma* 2003;54:1107-1110.

Hudson M, Kaplan R. Clinical response to child abuse. *Pediatr Clin N Am* 2006;53:27-39.

Jenny C, Hymel KP, Ritzen A, et al. Analysis of missed cases of abusive head trauma. *JAMA* 1999;281:621-626.

Kleinman PK, Marks SC, Blackbourne B. The metaphysical lesion in abused infants: a radiologic-histopathologic study. *AJR* 1986;146:895-905.

Sugar NF, Taylor JA, Feldman KW, et al. Bruises in infants and toddlers. *Arch Pediatr Adolesc Med* 1999;153:399-403.

Warrington SA, Wright CM, ALSPAC Study Team. Accidents and resulting injuries in premobile infants: data from the ALSPAC study team. *Arch Dis Child* 2001;85:104-107.

O. RADIOLOGY (for the Emergency Medicine trained fellow)

Contact: Karen Blumberg, MD. Radiology Department, Children’s Hospital and Clinics of MN, Minneapolis

GOAL 1: Patient Care: Provide family-centered patient care that is developmentally and age appropriate, compassionate, and effective for the treatment of health problems and the promotion of health.

OBJECTIVES *PC, MK, ICS, PR, SBP

1. Residents should be able to become proficient at reading the most common radiographs done on infants, children and adolescents.
2. Participate in interpretation of plain films, ultrasound, CT and MRI of the pediatric patients including the neonatal intensive care unit, pediatric inpatient, Emergency Department and outpatient exams.

GOAL 2: Medical Knowledge: Understand the scope of established and evolving biomedical, clinical, epidemiological and social-behavioral knowledge, and demonstrate the ability to acquire, critically appraise and apply this knowledge as it pertains to inpatient pediatric care.

OBJECTIVES * PC, MK, PBL

1. Recognize normal pediatric anatomy and anatomic variations in all body parts.
2. List and describe the basic principles of examination of musculoskeletal studies.
3. Describe the stages different types of fractures go through in the process of healing.
4. Identify common fractures, classification of fractures and patterns of fractures in child abuse.
5. Identify normal/abnormal airways on chest x-ray of the infant or older child.
6. Identify abnormalities associated with congenital heart disease on the chest; radiograph of the infant/older child.
7. Recognize airway obstruction, chest infections, and pleural abnormalities.
8. Recognize intestinal obstruction, bowel wall abnormalities, and signs of intussusception.
9. Establish bone age on the basis of radiographic findings.

GOAL 3: Interpersonal & Communication Skills: Demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their families and health professionals.

OBJECTIVES *ICS

1. Demonstrate empathy and understanding for the concerns patients and families requiring intrusive diagnostic tests and treatments.
2. Demonstrate an understanding of the necessity of communicating effectively with staff physicians, radiology technicians, patients and parents.

GOAL 4: Practice-Based Learning and Improvement: Residents are expected to investigate and evaluate radiologic practices and to appraise and assimilate clinical information to make appropriate patient management decisions.

OBJECTIVES *PBL

1. Prepare “case of the week” to be presented at the ED staff meeting
2. Be able to demonstrate the ability to quickly access the pediatric radiologic literature to determine best radiologic practices for different pediatric conditions.
3. Consistently evaluate individual performance, identify gaps in knowledge, and target learning to fill these gaps.
4. Demonstrate learning from errors, discrepancies in radiologic readings by treating physicians and radiologists.
5. Work well with other learners to enhance the common knowledge.
6. Be able to identify evidence based radiologic tests and treatments for different pediatric conditions.

GOAL 5: Professionalism: Residents are expected to understand and demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

OBJECTIVES 5 *PR

1. Consistently act in the best interest of the patient and family.
2. Consistently demonstrate a caring and respectful demeanor when interacting with patients and families.
3. Maintain patient/family confidentiality.
4. Demonstrate prudence in the use of expensive radiologic studies.
5. Be sensitive to the child's and family's impression of the child's condition.
6. Be sensitive to the different expectations of patients and families based on ethnic, religious and cultural diversity.
7. Respect the integrity of the child and family and their relative roles in decision-making.
8. Demonstrate respect for patient modesty.

GOAL 6: Systems Based Practice: Residents are expected to practice quality health care that is cost-effective and to advocate for patients within the health care system by helping them successfully navigate through it for the best outcomes possible. They should be able to work effectively in a multi-disciplinary team of providers to aid in the best outcomes possible.

OBJECTIVES *PC, SBP

1. Consistently advocate for patients and families and help them navigate the healthcare system by assisting them in making appointments, scheduling procedures in a timely manner, and calling other providers to communicate about the patient, when necessary.
2. Appropriately refer and follow up patients, when necessary.
3. Demonstrate appropriate communication and collaboration with the entire team needed for adequate treatment of seriously ill patients—subspecialty consultants, dietitians, nurses, teachers, and social workers.

(Assigned Reading)

Donnelly LF. Fundamentals of Pediatric Radiology. 1st ed. Philadelphia; Saunders:2001.

Kuhn JP, Slovis TL. Caffrey's Diagnostic Pediatric Imaging. 10th ed. Mosby; Philadelphia:2008.

Siegel MJ, Coley BD. Peditric Imaging. 1st ed. Philadelphia; Lippincott Williams & Wilkins:2006.

Swischuck LE. Emergency Imaging the Acutely Ill and Injured Child. 4th ed. Philadelphia; Lippincott Williams & Wilkins:2000.

P. INTERNATIONAL PEDIATRIC EMERGENCY MEDICINE / DISASTER RELIEF WORK

Contact: Rotation specific

Interest in international health and particularly international emergency medicine has been increasing. The natural disasters leading to mass casualties, coupled with scarcity of resources (medical and otherwise) and damage to local infrastructure makes for an overwhelming need for relief work. Formal training programs in international emergency medicine can provide emergency physicians with the skills and field experience necessary to make meaningful clinical and academic contributions. The educational purpose of this elective is multifold. The goals include: To gain the ability to assess international health systems to identify pertinent emergency health issues in a crisis situation. To achieve the ability to design emergency health programs that address identified needs with scarce resources. To acquire the skills necessary to implement emergency medicine programs abroad and integrate them into existing health systems. To achieve the ability to evaluate the quality and effectiveness and international health programs.

1. Participate in the daily care of patients with compassion. *PC
2. Evaluate, diagnose, and manage patients with acute traumatic and medical conditions, with special emphasis on children with infectious diseases indigenous to the area. *PC
3. Understand the pathophysiology of infectious diseases indigenous to the area and resulting from scarcity of clean water and food and inadequate sanitation.*MK
4. Appreciate alternative approaches to caring for children with common emergency medical conditions with limited resources. *MK
5. Review International PEM literature as it applies to patients seen and utilize internet-based resources such as Pubmed and Medline. *PBL
6. Use knowledge gained during elective to provide education after return to the US. *PBL
7. Develop comfort with providing care with limited resources and optimize patient care. *PBL
8. Continue to develop skills that allow effective and collegial exchange of information with patients, families, and other health professionals. *ICS
9. Develop a compassionate understanding of family stress associated with severe illness, injury and death. *ICS
10. Develop communication skills that allow for effective information exchange with health care co-workers and other humanitarian and international workers. *ICS
11. Learn basic conversational skills in local language. *ICS
12. Display a commitment to timely and thoughtful completion of all assigned tasks. *PR
13. Continue to treat patients, families, and other health professionals with respect. *PR
14. Arrive for all shifts on time and properly dressed.
15. Develop skills to properly utilize resources necessary to optimal patient care. *SBP
16. Work effectively as a part of a multidisciplinary team to provide optimal patient care. *SBP
17. Recognize the patients' needs for ongoing care after discharge from the makeshift setup and to safely transfer patients needing higher level of care to hospital based setup. *SBP

Q. ENT / OTORHINOLARYNGOLOGY

Contact person: Dr. James Sidman

1. Be comfortable with diagnosing and managing many ENT emergencies: peri-tonsillar and retropharyngeal abscesses, orbital cellulitis, epiglottitis, and orotracheal foreign bodies. MK,PC,PBL
2. Knowledgeable with the management of post-operative T and A complications (bleeding, odynophagia with or without dehydration, and retropharyngeal infections). MK, PC,PBL
3. Management of nasal bleeding (from observation to packing). MK,PC
4. Diagnosing, management, and if necessary, treating common ENT infections (and the respective complications): otitis media, sinusitis, adenitis, and mastoiditis. MK,PC
5. Be able to explain indications, procedure and complications of an emergent surgical cricothyrotomy and needle cricothyrotomy MK,PC
6. Be comfortable at changing pre-existing tracheotomies MK,PC, SBP
7. Be able to recognize and manage (surgically if needed) complications of nasal and ear trauma (nasal septal hematoma, peri-chondrotic hematoma, lacerations) MK,PC
8. Efficient with different modalities to the removal of nasal and otic foreign bodies. MK,PC,SBP,ICS
9. Recognize and be able to classify the various La fort and other facial fractures MK,PC
10. Able to identify teeth (via dental numeration) and to re-implant avulsed teeth. Should also understand Ellis (tooth) fractures MK,PC

R. ORTHOPEDICS

Contact person: Dr. Steve Sundberg

1. Describe the layers of the growth plate, and describe the mechanical strength of each layer. MK,
2. Describe the periphery of the physis, and the role these structures play in mechanical stability of the physis. MK
3. Describe the Salter-Harris classification of growth plate injury. MK
4. Discuss priorities for imaging musculoskeletal injuries in the multiply injured child. MK, SBP, PBL,PC
5. Discuss the indications for operative fixation of fractures in the multiply injured patient, and whether indications are altered from those for a patient with a single fracture. MK, SBP, PBL,PC
6. Discuss the different methods of fixation available, and your indications for cast or splint, external fixation, internal fixation. MK, SBP, PBL,PC
7. Be competent in the skills of Splinting and casting. PC, ICS
8. Learn the skills of fracture reduction especially forearm fractures. PC, ICS
9. Learn the skills of dislocation reduction. PC, ICS
10. Learn the patho-physiology and management of following topics. MK, SBP, PBL,PC

- [Child Abuse](#)
- [Fractures Associated with Head Injury](#)

- Fractures of the Physis
- Open Fractures
- Osteochondral Fractures
- Overuse Injuries
- The Multiply Injured Child: Musculoskeletal Aspects
- The Multiply Injured Child: Other Systems

(Assigned Reading)

1. Pediatric Orthopedic Study Guide:

<http://www.posna.org/education/StudyGuide/index.asp>

S. QUALITY IMPROVEMENT: Performance Improvement Curriculum for Pediatric Fellows

Contact: Marcella Delatorre

The ACGME competency of “Practice-based learning and improvement” requires that residents perform practice-based improvement activities using a systematic methodology. There are many benefits for residents who get involved in performance improvement activities, not only they feel they are an integral part of patient care, but they gain life skills that can be used in multiple settings. And most importantly, they gain a sense of ownership in their own education.

Curriculum Goals

After completion of the course, residents should be able to:

Demonstrate knowledge and appreciation for the need to improve quality in health care, and how CQI methodology contributes to the health care system and its “customers.”

Demonstrate knowledge and skills necessary to effectively participate as a contributing member or leader of a CQI effort.

Text Books & Resources

The course will follow and use the following reading materials:

Medical Quality Management: Theory and Practice, Editor: Prathibha Varkey, MD.

The Team Handbook: Third Edition by Scholtes, Joiner, and Streibel.

A series of IHI Open School Courses will be advised.

Didactic DVD’s will be used as curriculum enhancers and visual real examples

- Toast Kaizen, Introduction to Continuous Improvement Principles, GBMP
- Poka-Yoke Mistake Proofing Techniques to achieve Zero Defects, GBMP
- Moments of Truth, Creating a Lean Chain of Support, GBMP
- Raytheon, Plant Tour, GBMP
- A slice of Six Sigma, GBMP

Methodology

Students will participate in four 60-minute sessions. The sessions will guide students through the Plan, Do, Study, Act cycle, and obtain guidance on how to design and complete a quality improvement project.

Lectures

Into to quality improvement

Defining the scope, process, and team for your quality improvement project

Defining your QI project, risks, benefits, aim statement, and measures
what change can we make that will result in improvement.

This information can be found going to:

<https://sites.google.com/site/regionsemlongitudinalprogram/quality/quality-improvement-projects>

Log in: residentoftheday

Password: resotheaday

IHI Open School Courses:

- [QI 101: Fundamentals of Improvement](#)
- [QI 102: The Model for Improvement: Your Engine for Change](#)
- [QI 103: Measuring for Improvement](#)
- [QI 104: Putting It All Together](#)
- [QI 105: The Human Side of Quality Improvement](#)

Transferring knowledge into practice

Residents will have the opportunity to work on a PDSA project. During and between sessions, residents will have designated time to work on the planning, implementation, and study of a project (with the help of the instructor). Some out of class work will be required to complete projects on a timely basis. Students will be asked to choose a project they are interested in and, if possible, within their disciplines (e.g. residents participate in a project initiated in a different area).

Steps in the Project:

- Choose a clinical process as the topic for your project.
- Review the medical literature or other information on the topic to establish what is defined as “good care” for the topic in question.
- Set an explicit aim for improving the chosen process of care and define a measure of attainment of that aim.
- Study the current process of care as it exists either in Regions or the hospital/clinic you are attending and make a flow chart of the process.
- Measure baseline performance of the process; measure how well the chosen aim is currently being achieved.
- Generate a list of possible changes that could be made to improve the process so that the aim is achieved more frequently or at a higher level.

- Devise criteria for choosing among the possible changes; make a choice and create a test for change on a limited scale.
- Test the change on a small scale, including measuring the effect of the change.

Model for Improvement to follow:

- What are we trying to accomplish?
- How will we know that a change is an improvement?
- What changes can we make that will result in improvement?
- Then: Plan, Do, Study, Act

T. SIMULATIONS

Contact: Manu Madhok, MD, Vaishali Jha, MD

1) Patient Care Goal:

Simulation will improve patient care by providing the fellows a means of practicing clinical scenarios that physicians are likely to encounter.

Objectives:

- a) Through simulated medical experiences, fellows will be able to demonstrate the cognitive, technical, and team communication skills needed in resuscitation scenarios including an advanced megacode.
- b) Fellows will demonstrate competency through simulation in procedures that are not commonly preformed including:
 - 1) Needle decompression of a pneumothorax.
 - 2) Chest tube placement.
 - 3) LMA insertion.
 - 4) Intraosseous line placement.
 - 5) Cardioversion.

2) Medical Knowledge Goal:

Fellows will gain more understanding of the indications and risks of procedures and know the medical evidence that supports performing these procedures.

- a) Fellows are expected to study the most recent edition of the PALS textbook or procedures website, prior to attending a simulation.
- b) Fellows are expected to know of scientific basis of the most recent PALS recommendations.
- c) Fellows will complete the module corresponding to the simulation of the procedure they are expected to perform before coming to the simulation center. Module completion requires reviewing the module's components, completing and submitting both the post test and survey.
- d) Fellows will be expected to review the pathophysiology of, presentation of, and expected clinical course and management of a number of medical conditions.

Fellows will demonstrate knowledge on these subjects through the use of simulated medical experiences.

3) Professionalism Goal:

Fellows will demonstrate a commitment to carrying out professional responsibilities and adherence to ethical principles through standardized patient simulations.

- a) Fellows will arrive at scheduled simulations on time, be prepared and in appropriate attire.
- b) Fellows will approach simulation with the same sense of responsibility they have when on clinical service or call.
- c) Fellows will demonstrate sensitivity to a diverse patient population (including diversity in race, culture, religion, disabilities and sexual orientation) as exemplified in different scenarios.
- d) Fellows will demonstrate compassion, integrity and respect in scenarios in all discussions.
- e) Fellows will be able to incorporate ethical principles into all discussions.

4) Interpersonal and communication skills goal:

Fellows will further develop their leadership skills in managing the healthcare team during critical situations and will work to improve their communication with families as well as the entire medical team.

- a) Fellows will act as the team leader during resuscitations and procedures and coordinate the activity of the health care team during the scenario.
- b) Through standardized patient scenarios, fellows will have the opportunity to improve communication with families at difficult times such as after the death of their child.
- c) Through standardized patient scenarios, fellows will improve their communication with families who present an obstacle to communication such as: extreme behavior and/or attitudes.
- d) Through simulation based experienced, fellows will have the opportunity to improve communication skills with all team members including closed loop communications, appropriate distribution of workload, resource utilization, and identification of situations requiring extra assistance.

5) Practice based learning and improvement goal:

Fellows will be able to identify gaps in their knowledge and/or interpersonal communication skills.

- a) Simulation sessions at Simulation Center will be videotaped and the fellow and instructor will participate in constructive debriefing sessions.
- b) During debriefing sessions, fellows are expected to participate in identifying their own mistakes and weakness as well as their strengths and use this information to direct their study and skills development.

6) **Systems based practice goal:**

Fellows will become more familiar with the resources and personnel available during critical scenarios.

*** The simulation center is designed to have the same equipment and support as the Emergency Room. Resources of support and/or limitations will become evident during the scenario.