

JOHNS HOPKINS HOSPITAL INPATIENT AND OUTPATIENT PEDIATRIC ENDOCRINOLOGY – YEAR 1

This experience provides the bulk of the training in clinical pediatric endocrinology. The fellow will attend the outpatient clinics of the pediatric endocrine faculty. This includes numerous general pediatric endocrine clinics, the pediatric diabetes clinic, and a pediatric bone disease clinic. Through these clinics, the fellow will be exposed to the full range of both new patient referrals to pediatric endocrinology as well as the full range of pediatric endocrine disorders followed longitudinally as outpatients. The fellow will also manage the pediatric endocrine inpatient and consult service. This provides exposure to the full range of inpatient pediatric endocrinology. All activities will be performed with the appropriate supervision by the program faculty. The direct patient care activities are supplemented with specific scheduled conferences and didactic presentations.

Goals and Objectives

Patient Care

- In the outpatient clinic, the fellow will be able to obtain and document a complete history and physical exam, formulate a thorough assessment and plan, and communicate this assessment to the attending for new patients referred as outpatients to pediatric endocrinology.
- In the outpatient clinic, the fellow will be able to obtain an appropriate interval history, perform the appropriate physical exam, and formulate a thorough assessment and plan, and communicate this assessment to the attending for follow-up patients seen in pediatric endocrinology. This assessment and plan will include those aspects appropriate to the long-term management of chronic diseases. The fellow will demonstrate an ability to screen for diseases associated with specific endocrine disorders (e.g. thyroid disease in Turner's Syndrome and diabetes mellitus) and to provide counseling for health promotion and illness prevention, as appropriate for patients with specific endocrine disorders (e.g. smoking avoidance and driving safety in diabetes mellitus).
- For inpatient consultations, the fellow will be able to obtain and document a complete history and physical, formulate a thorough assessment and plan, and communicate this assessment to the attending.
- For inpatients on the pediatric endocrine service, the fellow will be able to obtain and document a complete admission history and physical exam, formulate a thorough assessment and plan, and communicate this assessment to the attending.
- For ongoing follow-up of inpatients on the pediatric endocrine service and of pediatric endocrine consults, the fellow will be able to obtain the interval history and relevant physical exam, obtain the results of laboratory and radiology tests, formulate a thorough assessment and plan, and communicate this assessment to the attending.
- In all settings, the fellow will demonstrate compassionate care for patients and their families from a socially diverse population.
- The fellow will review referrals to pediatric endocrinology. This will include, as necessary, discussion with the referring provider, and recommendations for

additional testing that can be done and information that can be gathered by the referring provider to either clarify the appropriateness of the referral, or expedite the evaluation once the child is seen in the pediatric endocrine clinics.

Medical Knowledge

- The fellow will demonstrate a knowledge and understanding of the pathophysiology, diagnostic evaluation and therapeutic management of disorders evaluated and managed by a pediatric endocrinologist. These include:
 - Short stature, including constitutional delay
 - Disorders of anterior pituitary hormone physiology, including growth hormone deficiency
 - Disorders of posterior pituitary hormone physiology, including diabetes insipidus
 - Disorders of hypothalamic hormonal regulation
 - Disorders of thyroid hormone physiology
 - Diagnosis and management of endocrine neoplasia
 - Disorders of the adrenal gland physiology
 - Disorders of androgen and estrogen metabolism, including adolescent reproductive endocrinology
 - Disorders of sexual differentiation and development
 - Disorders of calcium, phosphorus, and vitamin D metabolism
 - Disorders of parathyroid gland physiology
 - Disorders of fluid and electrolyte balance
 - Disorders of carbohydrate metabolism, including diabetes mellitus and hypoglycemia
 - Disorders of nutrition, including eating disorders
- The fellow will demonstrate a knowledge and understanding of the performance of RIA or other immunoradiometric techniques, including assessment and interpretation of results.
- The fellow will demonstrate a knowledge and understanding of the use and interpretation of diagnostic steroid studies, hormone receptor assays (including HPLC) and other non-immunoradiometric tests such as chemiluminescent assays.
- Will attend the weekly Pediatric Endocrine Research Conference
- Will attend the weekly Pediatric Endocrine Clinical Conference
- Will attend the weekly Endocrine Grand Rounds
- Will attend the weekly Pediatric Endocrine didactic sessions given by faculty or fellows to medical students and pediatric residents. (The fellow is expected to attend sessions on a given topic only once.)

Practice-Based Learning and Improvement

- At the weekly Pediatric Endocrine Clinical conference, the fellows will present relevant information from the medical literature regarding clinical issues raised by patients seen in the inpatient and outpatient settings.
- Fellows will prepare and present an article from the current endocrine literature in a journal club format once during this year.

- Fellows will demonstrate an ability to incorporate knowledge of evidence-based medicine in the evaluation and management of disorders referred to pediatric endocrinology.

Interpersonal and Communication Skills

- Will demonstrate effective communication skills through their presentation of patients evaluated in the inpatient and outpatient settings to the pediatric endocrine attending.
- Will demonstrate effective communication skills through the presentation of cases at the weekly Pediatric Endocrine case conference.
- Will demonstrate effective communication and interpersonal skills through their interaction with the pediatric house staff and other medical care providers involved in the medical management of patients – including the attending service on patients for whom a pediatric endocrine consultation is requested (as well as outpatient providers referring a patient to pediatric endocrinology), as well as services for which a consult is requested for a patient on the pediatric endocrine service. Effective communication will include the appropriate acquisition of information from these individuals, as well as dispersal of knowledge to these individuals (*e.g.* the assessment and recommendations from a pediatric endocrine consult.)
- Will demonstrate effective communication with patients and their families in both the inpatient and outpatient settings.

Professionalism

- Fellows will respect the contributions of all health-care team members in the evaluation and management of patients. This will include referring physicians and other primary care providers, nurses, house staff, and ancillary staff.
- Fellows will demonstrate an understanding and sensitivity to diversity towards patients and families with varied social backgrounds.
- Fellows will be reliable and accountable in caring for patients, including timely completion of documentation.

Systems-Based Practice

- The fellow will be able to focus the evaluation of both outpatient referrals and inpatient consults as is appropriate for a subspecialist; this includes finding the appropriate balance between thoroughness and relevance to referral/consultation.
- The fellow will demonstrate an ability to utilize the medical system to achieve diagnostic and therapeutic goals:
 - Utilizing appropriate ancillary staff, including nursing, nutrition, *etc.*
 - Understanding when additional consultations are required
 - Understanding how to coordinate the management of patients with complex medical histories among numerous services, as either the consultant, or as the service of record
- Demonstrate competence in the integration of inpatient and outpatient care, and a systems approach to care, by demonstrating appropriate follow-up/discharge plans for inpatients, and coordination of care of outpatients between the primary care providers and the pediatric endocrinologists.

- Will demonstrate an awareness of issues of cost-effective medicine in patient care through case discussions.
- The fellow will be able to coordinate initial referrals to pediatric endocrinology with the referring clinician – including the confirmation of the appropriateness of the referral, establishing the timeliness required for the pediatric endocrine evaluation, and recommending additional workup to be performed by the referring clinician prior to the evaluation by pediatric endocrine.
- Fellows will complete medical records (*e.g.* outpatient charts, discharge summaries) in a timely manner.

Educational Strategies

Patient Care. The most effective learning method is the evaluation and management of children with endocrine disorders, or those referred for evaluation or consultation because of concern for possible endocrine disorders. The fellow will learn through the evaluation and management of these children in both the inpatient and outpatient setting, with appropriate supervision and ongoing case and care discussion.

Medical Knowledge.

- Independent learning. The fellow is expected to review topics independently throughout the year. Recommended resources include:
 - *Pediatric Endocrinology*, Sperling (Ed.)
 - *Pediatric Endocrinology, Mechanisms, Manifestations, and Management*. Pescovitz OH and Eugster E (Editors)
 - *UpToDate*® (available online through Welch Library)
 - *Williams Textbook of Endocrinology* (Williams, Larsen, Kronenberg, Melmed, Polonsky (Editors)
 - A specific text the fellow will be directed to read is the chapter “Principles of Endocrine Laboratory Examination” in *Pediatric Endocrinology* (M. Sperling, ed., 2002).
- Didactic sessions.
 - Weekly pediatric endocrine clerkship/rotation didactic session. These are presentations on pediatric endocrine topics presented by the on-service attending or by upper-year fellows to the medical students and residents rotating with pediatric endocrinology. The first year fellow will attend these sessions (once for a given topic.)
 - Pediatric Endocrine Case Conference. During this weekly conference inpatient and selected outpatient cases are presented for discussion. All attendings and fellows attend these conferences.
 - Endocrine Grand Rounds. These conferences provide up to date information from experts within Hopkins and invited from outside Hopkins about the full range of endocrine topics.

Practice-Based Learning and Improvement

- Fellows are expected to be reflective clinicians, identifying for each patient encounter a learning need that will be met with further reading or discussion.

They will be expected to provide evidence for their clinical decision making based on current best practice. In addition to readings for medical knowledge (see above) when appropriate, the fellows will be expected to review the published literature through on-line searching.

- Pediatric Endocrine Case Conference. In addition to discussion of medical knowledge, these conferences will be a forum for the fellow to present to the group evidence-based recommendations from the medical literature, or other relevant published data. These discussions will also provide the guidance for further investigations in the medical literature.
- Endocrine Grand Rounds. These conferences provide up to date information from experts within Hopkins and invited from outside Hopkins about the full range of endocrine topics. Many include discussion of outcome data to guide clinical evaluation and management decisions.
- Completion of on-line training in Risk Management
- Completion of on-line training modules on HIPPA issues:
 - General Privacy Issues
 - Tracking and accounting for disclosures of health information

Interpersonal and Communication Skills and Professionalism

- Role models. Faculty will provide role modeling for professionalism and for interpersonal and communication skills.
- Feedback from faculty regarding fellows interpersonal and communication skills and demonstration of professionalism is also utilized as an educational strategy.

Systems-Based Practice

- Review of systems-based practice of patients and referrals by the faculty with the fellow.
- Pediatric Endocrine Case Conference. Aspects of systems-based practice relevant to specific cases is discussed at these weekly conferences.

Teaching Skills

- The fellow will continue to mature the teaching skills that were acquired during residency training through clinical teaching of medical students and residents on topics raised by patients seen on the inpatient service.

Evaluation Strategies

Of Trainee

- Formal – every six months fellows will be evaluated by the entire faculty using E*Value. All six competencies are evaluated. The fellows are informed that these evaluations are always available for their review. In addition, after the evaluations are complete, the program director individually reviews the evaluations with the trainee.
- Fellows take the annual subspecialty in-training examination in pediatric endocrinology (SITE). Their performance is reviewed with them.

- Informal – Ongoing feedback from faculty is provided to the fellow based on observations of :
 - Patient care and management (*Patient care, medical knowledge, practice-based learning and improvement, professionalism, systems-based practice*)
 - Presentations at the weekly endocrine case conference (*Patient care, medical knowledge, practice-based learning and improvement, communication skills, professionalism, systems-based practice*)
 - Discussion with referring physicians/consulting or consulted services (*Patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, systems-based practice*)
 - Discussions with patients and families (*medical knowledge, interpersonal and communication skills, professionalism*)
 - Medical student/resident teaching (*medical knowledge, communication skills*)
 - Input from ancillary and support staff, patients and families is sought regarding fellow performance (*interpersonal and communication skills, professionalism*)

Of Faculty

- Formal – every 12 months fellows will evaluate program faculty using E*Value. These evaluations are reviewed after completion by the program director. Any concerns raised by these evaluations are discussed with the faculty member. Faculty are asked to review the completed evaluations for self-improvement.
- Informal – Fellows are encouraged to provide feedback regarding faculty performance at any time. This can be discussed with the specific faculty member, the program director, or another program faculty member, whichever is most appropriate as judged by the fellow.

Of Program

- Formal – every 12 months fellows will evaluate the program using E*Value. These evaluations are reviewed after completion by the program director. Once a year, program evaluations are reviewed with a committee comprised of the program director, one or more additional program faculty, and one or more upper level fellow. In addition to reviewing the evaluations completed by the fellows, the review will also review:
 - the program goals and objectives
 - the contribution of the participating institutions (*e.g. the NIH rotation*)
 - the volume and variety of patients available for educational purposes
- Informal – Fellows are encouraged to provide feedback regarding faculty performance at any time. This can be discussed with the specific faculty member, the program director, or another program faculty member, whichever is most appropriate as judged by the fellow.
- The program director will review the annual subspecialty in-training examination in pediatric endocrinology (SITE) results for the fellows to identify deficiencies in the teaching program.

Supervision

- The attending on-call schedule will be posted
- The on-call attending is available at all times by pager
- Fellows are expected to discuss clinical issues with faculty in a timely manner.
This includes:
 - Inpatient consults
 - Changes in the condition of inpatients
 - Requests for consult or referral
 - After-hours/weekend calls from patients

PEDIATRIC ENDOCRINE FELLOWS' CONTINUITY CLINIC – YEARS 1, 2, 3.

Beginning in the first year, and continuing throughout the fellowship training, the fellows will attend this clinic. In this clinic, they will evaluate patients referred to them. They will follow these patients longitudinally, as well as following patients first evaluated as inpatients. The fellow will be identified to the patients and their parents as the child's pediatric endocrinologist – the fellow will see these patients each time they return for follow up. This clinic provides the continuity experience required for the fellow to learn longitudinal management of pediatric endocrine disorders.

Two clinics per month will be for general pediatric endocrine disorders. Two clinics per month will be dedicated to evaluating and managing children with diabetes and with metabolic bone disease. Children with diabetes will be managed in concert with the diabetes nurse educator and a nutritionist as part of a comprehensive diabetes clinic. Clinical issues that arise between clinic visits for a fellow's continuity patients will be addressed by the fellow (rather than, for example, the diabetes nurse educator.)

Goals and Objectives and Educational Strategies

These are the same as the relevant goals and objectives from the **JOHNS HOPKINS HOSPITAL INPATIENT AND OUTPATIENT PEDIATRIC ENDOCRINOLOGY** clinical activity, and include aspects of *medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice*. It is expected that the fellow's independence regarding management of their patients in the continuity clinic will increase as the fellow progresses from year 1 to year 2 to year 3. This includes both the encounters in clinic, as well as issues arising between clinic visits. (Appropriate review and supervision is to be maintained through the training period.)

Evaluation Strategies

In addition to the formal evaluation processes outlined above, faculty assigned to supervise the fellows' continuity clinic provide feedback to the fellows and to the program director on an ongoing basis.

Supervision

Faculty attend the fellows' continuity clinic to review the clinical care provided by the fellow. Faculty are also available for patient management discussions as they arise outside of clinic. During the course of the fellowship, it is expected that the fellows will assume increasing independence for the management of their patients followed in the continuity clinic.

RESEARCH – YEAR 1.

During the first year, the fellow will begin to explore research options. They will be encouraged to participate in smaller, more directly clinical investigations during the first year (*e.g.* case reports, case series). They will identify a larger research project that will extend for the remainder of their fellowship.

Goals and Objectives

- Identify a primary research project by February of the first year of fellowship
- Begin the initial background work in preparation for intensive involvement in the research project in the second and third years
- Utilize available time to begin to learn techniques applicable to the research project

Educational Strategies

- Individual discussions with program director to guide the fellow in identifying a research project
- Weekly research conferences expose the fellow to some of the research offerings in the institution
- The fellow will arrange to meet with investigators within the institution to learn about specific research opportunities in depth

Evaluation Strategies and Supervision

- The program director will meet with the fellow to discuss progress on these objectives
- The fellow's Scholarship Oversight Committee will meet in the Spring of the fellow's first year to review and advise the fellow regarding the selection of a research program

**JOHNS HOPKINS HOSPITAL INPATIENT AND OUTPATIENT ADULT ENDOCRINOLOGY
EXPERIENCE – ONE MONTH, YEAR 1**

- Each first year fellow will spend one month as the on-service fellow for the adult endocrine service at the Johns Hopkins Hospital. The goals for this month will be
 - To learn about endocrine disorders presenting in adults – and to relate these to the pediatric presentations
 - Specifically, it is felt that this will allow fellows to learn to diagnose and manage disorders that are important in pediatric endocrine practice, but because they are rare in pediatric patients, there is limited opportunity to diagnose and manage these disorders in pediatric patients. In contrast, these disorders are more common in adult patients, thus providing valuable learning opportunities for the pediatric endocrine fellows. Examples include:
 - Hypoparathyroidism
 - Hyperparathyroidism
 - Thyroid cancer
 - To learn about the long term issues related to endocrine disorders presenting in childhood, to gain perspective on the role of the management of these diseases in children, on the individual's lifelong health outcome. Examples include:
 - Type 1 diabetes
 - Type 2 diabetes

NIH INPATIENT AND ENDOCRINOLOGY EXPERIENCE – ONE MONTH, YEAR 1

- Fellows will spend one month (generally in their first year) serving as the on-service fellow for the inpatient endocrine service at the National Institutes of Health.
- The goals of this rotation are:
 - To allow the fellows exposure to additional expert pediatric endocrine faculty, to experience varied clinical practice styles
 - To expose fellows to the unique clinical research environment and model of the NIH
- To expose fellows to unique patient populations that they would be unlikely to see outside of the research protocols of the NIH.