Expanding Access to Pediatric Endocrinology Care: A Core Quality Goal and Component of Population Health

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Imagine this....

• A 2 year old boy is rushed to your ED and dies several hours later in the PICU
• The child had been referred 6 weeks prior for a “routine” endocrinology consultation and scheduled 2 days too late
• Cause of death: delayed dx. of AI
Think about this….

• How many non-urgent or routine patient referrals do you get on average in a week?
• How many open slots do you think you have set aside for routine new patients each week?
• Are there more new patient referrals than slots?
• Do you often have open slots you can’t fill?
• Have any of you seen a patient who you knew if you had been able to be seen that patient sooner would have had a much better outcome?
Wouldn’t it be great if we could…

• Reduce the emotional and financial burden for families?

• Expand the capacity of primary care to more independently assess and manage some common pediatric endocrine conditions that present in a predictable way?

• Support primary care to refer to us more consistently and appropriately, to provide relevant pre-consult information, and to avoid unnecessary testing?

• Free up our schedules for patients that most need our level of care?
The Current Problem at the Pediatric Primary and Subspecialty Care Interface

**PRINCIPAL CARE**

More children with chronic illness, behavioral issues

**SUBSPECIALISTS**

Demand Up

**PATIENT**

Supply Down

Long wait times, potential for delayed care and poor health outcomes
Amplified Access Challenges for Medicaid Youth

• Longer wait times across subspecialty visits than privately funded youth nationwide
• AHRQ 2016: 24.5% of Medicaid youth who needed to see a specialist in the last 6 months found it difficult
• Higher no show rates than privately funded youth
• Subspecialty referrals impose additional burdens to families in terms of travel and establishing new provider relationships
Why Improve the Referral Process between PCPs?

- Traditional process burdened by ambiguity and PCPs and subspecialists express dissatisfaction with current process
- There is 4 fold variation in referrals among PCPs
- Nearly ½ of referrals occur during initial visit for problem
CT Children’s Co-Management Model

• Develops, disseminates, evaluates, and improves protocols for expanding capacity of primary care to address targeted high volume lower acuity conditions typically referred directly to subspecialists

• Supports primary care practices to refer to subspecialists with less variation and to avoid unnecessary diagnostic testing

• Improves ACCESS and reduces VARIATION in referral behaviors
CLASP: Connecticut Children’s Leaders in Advanced Solutions in Pediatrics

Connecticut Children’s Leaders in Advanced Solutions for Pediatrics

• Seeks to promote novel and feasible solutions to address challenges in Pediatric Healthcare and includes Co-Management between PCPs and Subspecialists

• Once proof-of-concept established, applied for and awarded a US federal registration certificate for the mark CLASP
Distinctive Features of CLASP

- Targets less complex common conditions that present in a predictable way and typically respond to a standardized treatment plan
- “Co-developed” with primary care and aligned with and expands the PCMH
- Partitions the site of care and provider type
- Easy to update once new evidence or best practice becomes available
- Streamlined and easy to use at POC
Healthy Eating Tips

AVOID PAST FOODS
Fast food, which often includes fried foods, provides little nutrition and:
• Think fast food is cheaper than healthy food? Think again.
  • Fast food meals for a family of 4 $22.00.
  • Healthy dinner for a family of 4 $15.87.
Chicken 3.8 oz $5.29 for 4
Fresh green beans - $2.90 for 4
Apple - $1.82 for 4
Cup skim milk - $0.16 for 4
Brown rice - $2.85 for 4

CUT BACK ON SWEETS IN FOOD & DRINKS
Choose sugar-free water! It’s calorie-free, refreshing, and lower in cost (frost tap water is safe and healthy to drink).
Avoid sodas, energy drinks, sports drinks and waters and milks that are flavored with sugar. Sugar-free water and low-fat (1%) or fat-free (skim) milk are the best choices!

Did you know?
• Drinking just 1 can of soda a day can increase weight by 141 lbs. in a year.
• A 20 fl. oz. sports drink has as much sugar as 8.5 sugar packets.

CHOOSE FRESH OVER PROCESSED FOODS
The healthiest foods and drinks have the least number of ingredients. Shop around the outside aisles of the grocery store to find these items. These include fresh and frozen vegetables and fruits, lean meats and fish, nuts, low-fat milk and eggs. Convenience processed foods are usually high in salt and unhealthy fats. They also have fewer vitamins and won’t keep you feeling satisfied for long.

GO FOR FRUIT INSTEAD OF JUICE
Choosing whole fruit instead of juice will cut down on sugar and keep you feeling full longer. Frozen fruit is just as healthy as fresh fruit! If using canned fruit, choose fruit in water or 100% juice instead of the heavy syrup to cut out any added sugars.

Did you know?
• 1 cup (8 fl. oz.) of 100% orange juice is equal to 3¼ full oranges.
• Juice is not suggested for any child under the age of 1 year.

PORTIONS PORTIONS PORTIONS!
Use a smaller plate to manage portions. A child’s plate should be no more than 7” side to side and a teen’s plate, no more than 9” side to side. Young children often need less food than teens or adults. To learn more about your child’s specific needs, ask your pediatrician about meeting with a Registered Dietitian. Remember, fill ½ of the plate with vegetables and fruit. Grains or starches such as rice, pasta or potatoes should take up only ¼ of the plate and proteins such as meat, chicken, beans or eggs should take up ¼ of the plate.
• Tip: Use a plate with dividers to easily manage the portion sizes of each food group.

HEART HEALTH
Cut back on foods high in saturated fats. These include bacon, sausage, pizza, hot dogs, butter, baked goods, cookies, croissants, muffins, etc. and fried foods. These unhealthy fats can raise cholesterol levels and increase the risk for heart disease.
• Tip: Use vegetable based cooking oils such as olive, canola, vegetable, and corn oil instead of butter or lard.

CHOOSE WHOLE GRAINS
100% whole grain foods contain fiber. Fiber is good for digestive health, can help lower cholesterol and keeps us full for longer. Choose brown rice and whole grain crackers, pasta, cereal, bread, and tortillas.
• Tip: Look for 5 grams of dietary fiber or more per serving for a high fiber food.
• Tip: Look for the word “whole” as the first word in the ingredient list.

VEGETABLES AND FRUITS – EAT THE RAINBOW
Half of our plates should be vegetables and fruits at each meal. Mix up the colors of vegetables and fruits to provide different vitamins and natural fiber. Keep prewashed and sliced vegetables and fruits in the fridge for quick, easy snacks for your kids.
• Tip: Buy veggies and fruits in season. They’re cheaper, more in season, and tastier.
• Frozen veggies and fruits are just as healthy as fresh ones (sometimes more) and cost less.
• Reach for 5 veggies and fruits each day.

PLAN SNACK TIME!
A snack is a small amount of healthy food to provide energy between meals. This does not mean sweet or “junk food.” For the best snacks choose a vegetable, fruit or whole grain food. You may add a food that has healthy protein to keep hunger away longer.
Examples of healthy snacks:
• A medium apple or orange, 1 banana or a cup of berries (portion sizes varies with age)
• A serving of whole grain crackers
• Carrot sticks, sliced cucumbers, cherry tomatoes or sliced bell peppers
• Unsweetened applesauce
• You may add one of these healthy foods with protein to one of the snacks choices above: peanut butter, hummus, one hard boiled egg, a serving of unsalted nuts, a low-fat cheese stick or a low-fat yogurt.
• Tip: Add fresh or frozen fruit to plain low-fat yogurt instead of buying yogurt with fruit already mixed in. These and yogurt with sweet or candy toppings have a lot of added sugar.
Avoid grazing (constant snacking or picking at foods throughout the day) instead sit down and eat meals and snacks at set times throughout the day.
• Tip: Avoid use of electronics (phones, TV, tablet, etc.) while eating. Using these devices while eating often leads to fast eating and over eating.

LOOK AND LISTEN FOR CUES
Kids often eat for many reasons besides hunger. They may feel boredom, stress, sadness, or anxiety to go along with screen time. Recognize if your child eats for reasons other than hunger and redirect them. Take a walk, go outside to play, read a book, drink water, do homework, do an art project, do chores, etc.
• Tip: Offer to do an activity with your child to motivate them!

BE REALISTIC!
Don’t expect your child to never eat sweet or “junk food.” Work to cut back on foods such as chips, cookies, ice cream, cakes, etc. to help overall family health.
Satisfy a sweet tooth with a piece of fruit and check for portion sizes on the nutrition facts labels of any processed foods.
Novel Triage Process: Piloted in Endocrinology

Steers referring providers to RGs for certain condition

**PREVIOUS**
- Referral for condition in which there is an existing CLASP tool
- Appointment scheduled

**CURRENT**
- Referral for condition in which there is an existing CLASP tool
- MD reviews referral
- Criteria met: Patient scheduled

*Patient can still be referred at PCP discretion*

- Criteria not met: Patient not scheduled*, PCP sent letter of explanation and copy of referral guideline

*Patient can still be referred at PCP discretion*
### RG Pilot Study: Obesity Co-Morbidities

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<thead>
<tr>
<th></th>
<th>PRE</th>
<th>POST</th>
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<tbody>
<tr>
<td><strong>Reason for Referral</strong></td>
<td>51.8%</td>
<td>27.8%</td>
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<tr>
<td>Referrals made during the pre phase vs post-phase of the study to be for simple obesity with no related obesity co-morbidities</td>
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<tr>
<td><strong>Appropriateness of Referral</strong></td>
<td>48.2%</td>
<td>72.2%</td>
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<td>Referrals made during the post phase were more likely to have met the criteria outlined in the RG</td>
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<td><strong>Outcome of Referral</strong></td>
<td>0%</td>
<td>37.0%</td>
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<tr>
<td>Decreased obese patients seen by Endocrinology</td>
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Steering PCPs toward a RG for overweight/obesity at the time of a medically unnecessary referral had a measurable impact on subsequent referral behavior.
Referral Guideline: Elevated TSH

INTRODUCTION
A serum Thyroid Stimulating Hormone (TSH) concentration above the statistically defined upper limit of the reference range when serum thyroid hormone concentration is within its reference range is referred to as subclinical hypothyroidism (SH) (1-3). In the pediatric population the prevalence seems to be slightly lower than 2%, although epidemiologic studies concerning childhood and adolescence are lacking (4-6).

The clinical course of SH is variable and spontaneous remission may occur in children and adolescents 80-90% of the time (4). Increased TSH levels with mildly altered thyroid hormone levels have also been found in up to 15% of obese children and adolescents (5). There is, however, no need to treat these patients: elevated TSH is reversible after weight loss (6).

INITIAL EVALUATION AND MANAGEMENT

INITIAL EVALUATION:
- Targeted history and physical exam
  - Growth data
  - Palpation of the thyroid gland
  - Family history of thyroid disease
- Preferred thyroid screening tests are TSH and free T4
- Obtain Thyroid Peroxidase and Thyroglobulin antibodies (TPOAb and TGAb)

INITIAL MANAGEMENT: See Appendix: Deranged TSH with Normal Thyroid Hormone Guidelines Decision Tree

WHEN TO REFER

DELAY REFERRAL (initial management by PCP per attached Appendix algorithm) IF:
- Mildly elevated TSH (> ref. range but < 7.5 mIU/L) and Normal thyroid hormone levels (Free T4)
- No complicating factors (see below)

ROUTINE REFERRAL (within 4 weeks) IF ANY COMPLICATING FACTORS:
- Younger than 2 year of age
- Positive thyroid antibodies
- Enlarged thyroid gland
- Asymmetric thyroid enlargement, palpable mass/nodule
- Thyroid injury, history of radiation or any neck surgery
- Significant chronic medical condition like:
  - Cardiac defects
  - Down Syndrome
  - Dyslipidemia
  - Other autoimmune conditions
- Past or present medication use that may alter thyroid dysfunction like:
  - Lithium
  - Amiodarone
  - Imerferon alfa
  - Propylthiouracil
  - Carbamazepine
  - Interleukin-2

HOW TO REFER
Endocrinology Dept: Online referrals available. Phone: 860.837.6700 Fax: 860.837.6765
Before referral, please send:
- Notes from the initial and follow up visits with the PCP
- Complete growth chart
- Thyroid lab results and any other relevant diagnostic studies

WHAT TO EXPECT FROM CONNECTICUT CHILDREN’S VISIT
- History, physical exam
- Evaluation of prior laboratory testing and growth chart
- Additional labs if appropriate
- Imaging studies if appropriate
- Initiation of treatment with thyroid hormone if appropriate
- Comprehensive patient education

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Referral Guideline Algorithm: Elevated TSH
Improved ACCESS due to Referral Triage Process in Endocrinology for 4 common conditions: nearly 394 new patient slots freed up in 2015-2016 (15% of total referrals)
IMPACT of Novel Triage Process in Endocrinology in 2015-16

• **ACCESS**: 394 freed up slots in Endocrinology

• **COST SAVINGS**: at an average billing code of 99244 ($341.66) = $134,614
Co-Management of Obesity Patients

Over a one year period, 277 specialist referrals were successfully co-managed, resulting in savings to the system of $94,000.
Endocrinology’s CLASP Diffusion Process

Has “reached” 712 unique referring PCP’s
“Co-M allows me to manage relatively common pediatric problems with a greater level of expertise than I was able to before.”

“Because they provide expert opinions from the doctors at Children’s who are fellowship trained, we can provide a higher level of care without sending patients and families to the hospital.”

“…Sparing children and families hospital visits decreases their anxiety.”

“The plans make patients happy and make me feel more satisfied professionally.”
e-Consults & CLASP are Natural Partners

• They bring mutually beneficial strategies to help tackle issue of limited access to subspecialty care for safety net youth

• Their complementarity presents unique opportunity to combine our work to implement and scale up a new process for pediatric subspecialty referral
Complementary Tools: Co-Management and e-Consults

CLASP and e-consults work together to evaluate case acuity/complexity and optimize the balance of case allocation between PCPs and subspecialists.

- **Highly complex cases** for which greater collaboration between PCPs and subspecialists is required.
- **Highly complex cases**

**Acuity/Complexity**

**CHC**
- PCPs

**E-Consults**

**CLASP**
- Co-Management

**patient flow**
CT Children’s Pediatric Endocrinology e-consults

* 31% of e-consults attached a CLASP tool as part of the e-consult response
Lessons Learned

- Target the right condition
- Get input of PCPs early in tool development
- Create tools that are easy to access and use
- Limit disruption of office workflow
- Identify the right primary care partners
CLASP Co-M Model

• Efficacy & feasibility demonstrated
• Scalability and sustainability a challenge without:
  – Becoming part of a clinically integrated network that is being payed differently
  – Having adequate infrastructure and technology support
“The key strategies for improving the health of a country’s population through healthcare are to promote timely access to preventive, acute, and chronic care and to deliver evidence-based and appropriate care services. Timely access for people at risk for poor health may be impeded by three features of healthcare systems:

- Cost of care & affordability for individuals
- Hassle people face as they obtain care
- Disparities in delivery of care

CLASP Co-M model is a step in the right direction
Thank You!

About Connecticut Children’s Medical Center

Connecticut Children’s Medical Center is the only hospital in Connecticut dedicated exclusively to the care of children and is ranked by *U.S. News & World Report* as one of the best children’s hospitals in the nation. With a medical staff of more than 1,000, Connecticut Children’s provides comprehensive, world-class health care in more than 30 pediatric specialties and subspecialties. Connecticut Children’s Medical Center is a not-for-profit organization, which serves as the primary pediatric teaching hospital for the UConn School of Medicine, has a teaching partnership with the Frank H. Netter MD School of Medicine at Quinnipiac University and is a research partner of The Jackson Laboratory. Connecticut Children’s Office for Community Child Health is a national leader in community-based prevention and wellness programs.