The Pediatric Physicians’ Organization at Children’s (PPOC)

HPHC Medical Directors Meeting
May 4, 2011
• Formed in 1998
• Member of Children’s Hospital Integrated Care Organization (CHICO)
• All practices on either the PPOC supported Electronic Medical Record or a Legacy System
• PPOC
  – 257 Primary Care Physicians
    • 210 PPOC PCP’s
    • 47 CHB PCP’s
  – 76 Practices
    • 73 PPOC Practices
      – 34 - Solo
      – 29 - 2-5 PCP’s
      – 10 - > 5 PCP’s
    • 3 CHB Practices
      – 3 - > 5 PCP’s
PPOC OFFICE LOCATIONS – April 2011

Route 93 North (17 practices)
Route 495 West (19 practices)
Route 95 South (3 practices)
Route 24 South (8 practices)
North Shore (2 Practices)
Urban Core (20 practices)
Southeast Expressway (5 practices)
Cape Cod & Islands (2 practices)
BACKGROUND

• Sub-specialty referrals: paid medical claims for 2 years, 72 practices, 186 MD’s 40,480 visits for 35,487 subjects

<table>
<thead>
<tr>
<th>The most visited (70%)</th>
<th>Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ophthalmology/Optometry</td>
<td>8,415</td>
</tr>
<tr>
<td>Orthopedic Surgery</td>
<td>6,028</td>
</tr>
<tr>
<td>Dermatology</td>
<td>5,243</td>
</tr>
<tr>
<td>ORL</td>
<td>3,109</td>
</tr>
<tr>
<td>Allergy/Immunology</td>
<td>2,476</td>
</tr>
<tr>
<td>Gastroenterology</td>
<td>1,975</td>
</tr>
<tr>
<td>Neurology</td>
<td>1,911</td>
</tr>
</tbody>
</table>
• 2-4 % of all teens, common cause of referrals
• Most patients require no intervention - only 40% of the visits met screening criteria for an appropriate referral based on physical exam and scoliometer readings
• Drivers of the referrals: unclear guidelines, knowledge/skill deficits, parental preference

Goal

To increase efficiency of referrals for AIS
• The stakeholders: families, PCPs, Ortho, payers
BUSINESS CASE

• PPOC seeking ways to improve efficiency
• Need to improve access at overcrowded specialist offices to improve timeliness
• Specialists frustrated seeing essentially well children
• Cost of care is higher at specialist
• Opportunity to publish findings
• Can be linked to P4P in contracts
Our Initiative - 3 Domains

• Develop Tools
  – Decision Support Algorithm
  – Information Handouts for Parents
  – Didactics (recorded, e-curriculum)
  – Integrate tools into EMR

• Understanding the Potential for Change
  – Retrospective cohort, paid claims for 20 months for AIS visits to orthopedics from a single plan.
  – Chart review for all new ortho visits for AIS
  – Appropriate referral: history, exam scoliometer and radiographs

• Promoting Behavioral Change
  – Increasing awareness of one’s performance gap, longitudinal individual data feedback
Developing Tools

- Collaborative work between Children’s Hospital specialist, Tim Hresko, MD and the PPOC Wanessa Risko, MD, to develop the decision support algorithm and content of didactics and handouts for parents and clinicians over 3-4 months.
- Incorporation of these materials into the EHR via the scoliosis order set, loading of orders by the PPOC for all practices
- Distribution of performance data to providers showing their referrals #s relative to network
- Provider education re: scoliosis management
DECISION SUPPORT ALGORITHM FOR ADOLESCENT SCOLIOSIS
Ages 10 to 18 Years

INSPECT
From the back
Is pelvis level?
Is waist symmetrical?
Are shoulders levelled?
Adam forward bending test
From the side
Excessive lordosis?
Excessive kyphosis?

ASYMMETRY ON EXAM
MEASURE WITH SCOLIOMETER AT THE HORIZON

SCOLIOMETER <7°
Follow-Up
- in 6 - 12 months based on growth potential

SCOLIOMETER ≥7°
Evaluate Further
- Obtain standing PA scoliosis X-Ray From C7 to iliac crest
- Must request Cobb Angle in X-Ray order
- Follow-up based on Cobb Angle

FOLLOW-UP BASED ON COBB ANGLE (assuming no red flags are present)

<table>
<thead>
<tr>
<th>GROWTH POTENTIAL</th>
<th>FOLLOW-UP</th>
<th>10 - 14°</th>
<th>15 - 19°</th>
<th>20 - 24°</th>
<th>25 - 29°</th>
<th>greater than 30°</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 11 or older but pre-pubertal</td>
<td>1 year, Repeat Hx/Algorithm</td>
<td>6 mos, Repeat Hx/Algorithm, Refer if X-ray progression**</td>
<td>REFER or 3 mos, Repeat X/Ray/Cobb, Refer if X-ray progression**</td>
<td>REFER</td>
<td>REFER</td>
<td>REFER</td>
</tr>
<tr>
<td>Pubertal Pre-Menarcheal girl or Boy age 11-14</td>
<td>1 year, Repeat Hx/Algorithm</td>
<td>3 mos, Repeat Hx/Algorithm, Refer if X-ray progression**</td>
<td>REFER or 3 mos, Repeat X/Ray/Cobb, Refer if X-ray progression**</td>
<td>REFER</td>
<td>REFER</td>
<td>REFER</td>
</tr>
<tr>
<td>Post-Menarcheal girl or Boy age 15-16</td>
<td>1 year, Repeat Hx/Algorithm</td>
<td>6 mos, Repeat Hx/Algorithm, Refer if X-ray progression**</td>
<td>6 mos, Repeat X/Ray/Cobb, Refer if X-ray progression**</td>
<td>REFER</td>
<td>REFER</td>
<td>REFER</td>
</tr>
<tr>
<td>Skeletally Mature (≥ post Menarcheal age 17-18)</td>
<td>No Treatment, Rest</td>
<td>No Treatment, Rest</td>
<td>5 Years, Repeat X/Ray/Cobb, Refer if X-ray progression**</td>
<td>5 Years, Repeat X/Ray/Cobb, Refer if X-ray progression**</td>
<td>REFER</td>
<td>REFER</td>
</tr>
</tbody>
</table>

RED FLAGS
- Pain
- Double Curves
- Neurofibromatosis
- Congenital Tissue Disorders

HIGHER RISK OF PROGRESSION
- Girls
- During growth spurt
- Thoracic curves

Sign of near completion of growth = gained <1cm in height in 6 months
**X-ray progression = increase in Cobb Angle of 5 degrees or more

By Dr. M. Timothy Hensko, Department of Orthopaedic Surgery, Children's Hospital Boston and Dr. Winsees Risks in collaboration with PPOC members

April 2009
# ORDER SET IN THE EMR

**ORDER SET:** Scoliosis

**DIAGNOSES (TRIGGER):**

**DIAGNOSES (LINKED):** (SAME AS TRIGGER)

**OME SET:**

**NAME** | **STRENGTH** | **TAKE** | **FREQ** | **DURATION** | **REFILLS** | **ROUTE** | **FORMULATION** | **DISPENSE** | **DEL**
--- | --- | --- | --- | --- | --- | --- | --- | --- | ---

**Labs**

**NAME** | **BROWSE** | **DIAGNOSTIC IMAGING** | **DESCRIPTION** | **DELETE** | **PROCEDURES** | **DESCRIPTION** | **DELETE**
--- | --- | --- | --- | --- | --- | --- | ---

**Immunizations**

**NAME** | **BROWSE** | **SMART FORMS** | **NAME** | **DELETE**
--- | --- | --- | --- | ---

**Appointments**

**NAME** | **ADD FOLLOW-UP** | **REFERRALS** | **NAME** | **DELETE**
--- | --- | --- | --- | ---

**Physician Education**

**PDF** | **ADD** | **SAVE**
--- | --- | ---

**WEB REFERENCE** | **ADD** | **SAVE**
--- | --- | ---

**Message**

If red flags are present obtain a standing PA and lateral view of entire spine C7 to iliac crest. RED FLAGS: pain, double curves, left curvature, neuro abnormalities, neurofibromatosis, connective tissue disorder, foot deformity, leg length discrepancy.
Number of Adolescent Idiopathic Scoliosis Visits per 1000 Adolescent Patients

DATA FEEDBACK

PPOC overall value (54 AIS visits to specialists per 1000 adolescent patients)
## RESULTS

### Performance to Date

<table>
<thead>
<tr>
<th></th>
<th>Baseline Period</th>
<th>Development &amp; Implementation Phase</th>
<th>Measurement Period 2 (data 10/1/10 - 3/31/11)</th>
</tr>
</thead>
<tbody>
<tr>
<td># of visits with specialist</td>
<td>79</td>
<td>43</td>
<td>19</td>
</tr>
<tr>
<td>member months</td>
<td>183,418</td>
<td>110,947</td>
<td>57,798</td>
</tr>
<tr>
<td>rate per 1000 member years</td>
<td>5.17</td>
<td>4.65</td>
<td>3.94</td>
</tr>
<tr>
<td>% visit rate change</td>
<td></td>
<td>-10%</td>
<td>-24%</td>
</tr>
<tr>
<td>confidence interval</td>
<td>4.03-6.31</td>
<td>3.26-6.04</td>
<td>2.17-5.72</td>
</tr>
</tbody>
</table>

### Scoliosis Visit Rate to Orthopedics per 1000 Member Years

- Tim Hresko scoliosis presentation at 5/6/09 membership mtg
- Scoliosis video sent via email 5/10/10
- MD comparison data mailed 6/3/10
BARRIERS

• Educating clinicians in geographically dispersed network
• Labor required for data collection
• Acceptability to families
• Creating a financial impact that warrants the effort
Conclusions

• Background analysis is critical
• Collaboration with specialists must address their needs
• Supporting providers with tools and data will accelerate change
• Educating families is essential