Improved nutritional management of high-risk infants with congenital heart disease

Team Leader: Jeff Anderson, MD, MPH

**Aim**

Increase appropriate pre-surgical caloric intake* in all infants (<6 months) with a diagnosis of **large VSD or AV canal** seen in the outpatient cardiology clinic at CCHMC from 36% to 80% by February 2009.

**Key Drivers**

- Identification of high-risk patients
- Nutrition consultation for all high-risk patients
- Improved parental nutrition adherence

**Interventions**

- Daily Epic reports by nutritionist(2)
- Education of nursing, faculty and fellows(1)
- Diagnosis by patient advocates in Epic follow-up appointments(2)
- Growth chart/nutrition flag for all children < 6 months(2)
- Family diet/weight gain diary along with education(1)
- Improved funding of nutrition consultations
- Creation of a nutritional care plan for high-risk infants with congenital heart disease(2)

**Overall Outcome**

Improved weight gain and surgical outcome in infants with congenital heart disease.

- Orange: trials completed
- Green: in progress

*As reported by caregivers

**Large ventricular septal defect or atrioventricular canal**
PDSA Ramp: Patient Identification/management

**TEST 1**
What: Epic Reports
Who (population): infants <6mo
Where: Cardiology clinic
When: 9/15-9/19
Who executes: M. Donley, RD
Result: Implement weekly

**TEST 2**
What: Specialized growth charts
Who (population): infants <6mo
Where: Cardiology clinic
When: 9/22-9/29
Who executes: Clinic RNs
Result: retry larger scale

**TEST 3**
What: Specialized growth charts
Who (population): infants <6mo
Where: Cardiology clinic
When: 11/17-11/28
Who executes: Clinic RNs
Result: Implement
Revisit: 1/2/09
Modify form to include nutritional care plan

**TEST 4**
What: Specialized growth charts
Who (population): infants <6mo
Where: Cardiology clinic
When: 2/23/08-
Who executes: nursing/nutrition
Result: pending
PDSA Ramp: Family education

**TEST 1**
What: Weight/nutrition journal
Who (population): single patient
Where: cardiology clinic
When: Dec 15-23, 2008
Who executes: nutrition/nursing
Result: trial on larger scale

**TEST 2**
What: Weight/nutrition journal
Who (population): 2 patients
Where: cardiology clinic
When: Jan 5-19, 2009
Who executes: nutrition
Result: modify content

**TEST 3**
What: Weight/nutrition journal
Who (population): all VSD pts
Where: cardiology clinic
When: Jan 26-Feb 9
Who executes: nutrition
Result: implement

**TEST 4**
What: 
Who (population): 
Where: 
When: 
Who executes: 

---

*change the outcome*
Appropriate nutrition in infants with Congenital Heart Disease
September 2008 through February 2009

Patients with appropriate nutritional intake

Baseline data

1st Median

Bi-weekly percentage

family nutrition journals

specialized growth charts

begin EPIC reports

first-team meeting

change the outcome

Cincinnati Children's
Overall Learning/Challenges

• Involve all people involved in the system
  – Families are especially helpful in seeing things we might not otherwise see
• With small numbers focusing on the failures is important in illustrating problems
• Success breeds excitement and then more success
# Implementation/Sustain Plan Status

<table>
<thead>
<tr>
<th>Activity</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition salary</td>
<td>Under review by Heart Institute leadership</td>
</tr>
<tr>
<td>Care plan</td>
<td>Modification and review by pathway committee</td>
</tr>
</tbody>
</table>
Next Steps to Lead Improvement in Your Area

1. Finishing touches for nutrition project

2. Organization of quality improvement team within the Heart Institute
   - Electrocardiogram chaos project
   - Publication of data from Clinical Pathway/CICU successes

3. National work with the JCCHD
Average daily presurgical weight gain

Average daily weight gain

1st Monthly Averages 1st Median

Project begins

Individual patients

change the outcome

Cincinnati Children's