ImproveCareNow
Collaborative Chronic
Care Network

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Richard B. Colletti, MD

NIH NIDDK R01DK085719
AHRQ R01HS020024
AHRQ U18HS016957
ImproveCareNow Network Care Centers
0.5 \times 0.5 = 0.25
Learning Healthcare System

• Patients and providers work together to choose care based on best evidence
• Drive discovery as natural outgrowth of patient care
• Ensure innovation, quality, safety and value
• All in real-time
Network-Based Production

Yochai Benkler, “The Wealth of Networks”
Percent of Patients in Remission

Crandall, Margolis, Colletti et al Pediatrics 2012;129:1030
Network Organization

- ImproveCareNow, Inc
  - Clinical hub
- Cincinnati Children’s Anderson Center for Health Systems Excellence C3N Project
  - Accelerator
- Budget
  - ImproveCareNow operating costs supported by fees - $1,000,000/year
  - Center costs - $35-100,000/year
  - Research and innovation - $2 mil/year
  - Limited commercialization funds
How do you create network-based production for health?

1. Focus on outcome
2. Build community
3. Effective use of technology
4. Learning system
   - System science, QI, qualitative research, clinical research
Building community

- Compelling purpose
- Core leadership – patients, clinicians, researchers
- Sharing stories
- Many ways to contribute

Jill Plevinsky, Chair, PAC
Effective use of technology

Example: Data Collection
Data capture at clinical visit
“Enhanced” Registry

Data-in-once

• Automate chronic care processes
• Measure performance for QI and learning
• Generate high quality data
• Create new knowledge at three levels
  • care center, population and individual level

John Hutton, MD; Keith Marsolo, PhD; Charles Bailey, MD; Christopher Forrest, MD, PhD; Marshall Joffe, MD, PhD; Wallace Crandall, MD; Mike Kappleman, MD, MPH; Eileen King, PhD
**IBD PRE VISIT ASSESSMENT**

**Date of last visit:** 6/26/2012

**Primary Provider:**

**Last wt (kg):** 53.70

**PPD Date:** 2008 12-20-00 AM

**Last CR:** Don’t Know

**Considerations**

**Nutritional Status:** At risk

Consider dietary c/s, supplement calories, reassess di activity, refer to Nutrition Algorithm

**Growth Status:** Satisfactory

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**Medications**

**Asacol**
- Active: 80 mg/kg/day up to 4 g/day
- Consider increase in dose to recommended range of (20-100) mg/kg/day

**Pentasa**
- Active: 80-100 mg/kg/day up to 4 g/day
- Consider increase in dose to recommended range of (20-100) mg/kg/day

**Immunomodulators**
- Methotrexate
  - If active dz, consider 6TGN levels < 90
- Azathioprine
  - 1.0-1.5 mg/kg/day PO intermediate TPMT activity
  - 2.0-3.0 mg/kg/day PO normal-to-high TPMT activity
- 5-ASA
  - 0.5-7.5 mg/kg/day PO intermediate TPMT activity
  - 1.0-1.5 mg/kg/day PO normal-to-high TPMT activity

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**Clinical Reports**

**Diagnosis at the last visit**

- Crohn’s Disease

**Nutritional Status at Last Visit**

- Satisfactory

**Diabetes Status**

- Total: 477
Performance Report - QI

Key Measures
Monthly Report – December 2011

Advanced Track
All Sites Performance

1. Remission rate
   (76%, 80%, n=2435)

2. Steroid free remission rate
   (72%, 80%, n=2424)

3. Sustained remission rate
   (57%, 45%, n=1352)

4. Off prednisone
   (91%, 95%, n=2542)

5. Satisfactory nutritional status
   (90%, 90%, n=2615)

6. Satisfactory growth status
   (93%, 90%, n=1851)

7. Complete documentation bundle
   (94%, 95%, n=502)

8. Documented visit in last 6 months
   (75%, 60%, n=2031)

9. Starting Thiopurine and 6-TGN level measured
   (92%, 90%, n=6)

10. Thiopurine dose according to Model Care
    (75%, 80%, n=509)

11. 6-TGN level measured according to Model Care
    (75%, 70%, n=13)

12. Infliximab initiation and prior PPD or chest X-ray 3-month moving average
    (75%, 95%, n=34)

13. Infliximab dose according to Model Care
    (95%, 95%, n=225)

14. Infliximab trough level measured
    (95%, 70%, n=11)

15. Methotrexate dose >= 10 mg/square-meter/week
    (91%, 95%, n=65)
## Re-design Care - Care Center Level Studies

<table>
<thead>
<tr>
<th>Treatment Combination</th>
<th>Pre-visit Planning</th>
<th>Population Management</th>
<th>Self-Management Support</th>
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</thead>
<tbody>
<tr>
<td>Site 1</td>
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<td>Site 2</td>
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<td>Site 8</td>
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</tbody>
</table>

### % in Remission

#### Run Order Plot

- % in Remission
  - 85.00
  - 83.00
  - 81.00
  - 79.00
  - 77.00
  - 75.00
  - 73.00
  - 71.00
  - 69.00
  - 67.00
  - 65.00

- Run Order
  - 1
  - 2
  - 3
  - 4
  - 5
  - 6
  - 7
  - 8
Simulated Trial

Cumulative Probability of Achieving Remission with Biologic Therapy vs. controls for patients with moderate/severe pediatric Crohn’s disease

Chris Forrest, MD, PhD, Charles Bailey, MD, Marshall Joffe, MD, PhD. Univ of Pennsylvania
19 yr. old with Crohn’s colitis
Colectomy with ileo-anal anastomosis (10 yrs)
Chronic diarrhea, nocturnal stools, fatigue, poor quality of life
Current medications: Infliximab & PRN imodium
What’s Next?

Inter-visit Planning

Mentoring
Community Building/Organizing
Passive Patient Reported Outcomes

Lisa Opipari, PhD, John Chaffins, David Fore, Michael Seid, PhD, Keith Marsolo, PhD, Tania Moon, Jill Plevinsky
Collaborators
Be part of the solution

- Help test patient-engagement interventions using network as ‘lab’
  - Better outcomes and lower costs
  - Kauffman Foundation Health Network Trust Project
- Be part of the scale up
  - 10,000 more in remission
- Be part of the scale out
  - Adults with IBD
  - Another disease
- Accelerate
  - Technology strategy and partnerships