Launched at Mass General/MGPO: April 2012

- Acute Myocardial Infarction (AMI)
- Chronic Obstructive Pulmonary Disease (COPD)
- Back Pain
- Inpatient Psychiatry
- Premature Neonate
- Rheumatology
Furthering the work of the first Coronary Artery Disease-AMI Care Redesign effort, the team reformed in 2013 and is focusing on the larger population of patients with AMI and acute coronary syndrome (not just those with STEMI) who have a percutaneous coronary intervention (PCI). The team aims to streamline the flow from the time the patient leaves the catheterization lab until 30 days after discharge. The goals are to optimize care, reduce unnecessary variation and provide evidence-based treatment customized to individual patient needs.

The following methods will be used:

- Standardize handover between catheterization lab and inpatient units
- Initiate and monitor routine/essential elements of clinical care for all AMI patients from the moment of arrival to the unit
- Provide patient-friendly educational material that encourages active patient engagement
- Make use of checklists to drive critical elements of care and ensure their completion
- Assess the home environment and ability of the patient to engage in health maintenance and compliance
- Facilitate a safe transition to home, community and work
- Ensure continuity of care through the PCP, the patient-centered medical home (PCMH), and appropriate support services

“The AMI team members are so passionate about providing the best and safest care for our patients, and the process mapping meeting provided an opportunity for everyone to have a voice in how care for AMI patients should be redesigned.”

Kenneth Rosenfield, MD
Physician Co-Lead, AMI Care Redesign Team

TEAM MEMBERS

Kenneth Rosenfield, MD
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Jennifer M. Searl
Judith H. Silva, RN
Erin J. Stack
Elizabeth S. Temin, MD
Kelly Trecartin, NP
Laura Tresvik
Lisa Trifari, NP
Brian French, RN-BC, PhD(c)
**AIM:** Optimize care for AMI patients with or without PCI, by reducing unnecessary variation and providing evidence-based care customized to individual patient needs

**INTERVENTIONS**

Three multidisciplinary task forces formed to address hand-offs, clinical care and transitions-readmissions:

- **Hand-off Task Force:** Standardize communication between the Cath Lab and CCU/E10/E11 to relay the right information to the right person at the right time and in the right format so as to positively affect patient safety and experience across the care units.

- **Clinical Care Task Force:** Create standards around clinical management horizontally and vertically among the units so that patients receive optimal care irrespective of their location and provider. Set minimum expectations of care that each patient should receive, and encompass mandatory and discretionary components right from the time a patient is wheeled into the unit until disposition.

- **Transitions-Readmissions Reduction Task Force:** Steer the critical care components in preparation of patients’ transition to home and work environment. With an eye on reducing readmissions and improving patient satisfaction, identify the vital care components and champion their timely execution across the patients’ journey at our hospital, and post discharge.

**RESULTS**

![Diagram of Acute Myocardial Infarct Redesign]

**NEXT STEPS**

- Pilot prioritized ideas
- Adopt, adapt or abandon ideas
- Measure and track progress
COPD Care Redesign Team

The COPD Care Redesign Team is focused on establishing a well-coordinated continuum of patient-centered services including education, medication compliance and exercise, with the goals of reducing hospital admissions and readmissions while optimizing the patient’s quality of life and health status.

The COPD Team is planning outreach to primary care physicians to optimize outpatient medications to avoid hospitalizations; complete initial trials of action plans and embed the action plans in LMR; implement a pop-up message regarding inpatient drugs of choice, pilot an innovative mobile device for patient education and self-monitoring, and track key outcomes, including quality of life, inpatient length of stay, readmission rate and overall iCMP patient costs.

The team has worked hard to designed the following interventions:

- Partner with the Mass General Integrated Care Management Program (iCMP) to provide better management of high risk COPD patients, focused on outreach to primary care physicians to insure drug regimens are optimal, provide primary care physicians and patients with action plans that facilitate early outpatient treatment of COPD exacerbations, and partner with the Center for Connected Health to evaluate the utilization of a mobile device for patient education and self-monitoring
- The Pulmonary and Critical Care Medicine/Chelsea Health Center Community Outreach COPD program
- Evaluate a pulmonary rehabilitation intervention comprised of minimal on-site visits, patient-directed in-home training, ongoing support and monitoring via phone and/or mobile device
- Convert high-cost inhalers to lower-cost medications to reduce inpatient drug costs

“Care Redesign has stretched how I think about taking care of our patients with COPD. It allowed us to explore new ground and design new processes to provide better, more efficient patient care.”

Michael Sullivan, PT, DPT, MBA
Clinical Lead, COPD Team

TEAM MEMBERS

| Paul Currier, MD          | Joanne Doyle Petrongolo |
| Fiona Gibbons, MD        | Joanne Kaufman, RN       |
| Michael Sullivan, PT, DPT, MBA | Mary Bourgeois           |
| Christine Kaliris        | Mary Neagle              |
| Joan Strauss             | Philip Carrieri          |
| Alison Squadrito         | Robert Sutherlin, RN     |
| Ann Erwin               | Ryan Thompson, MD        |
COPD Care Redesign

**AIM:** Establish a well-coordinated continuum of patient-centered services including education, medication compliance and exercise, with the goals of reducing hospital admissions and readmissions while optimizing the patient’s quality of life and health status

**INTERVENTIONS**

1. Partner with the Mass General Integrated Care Management Program (iCMP) to provide better management of high-risk COPD patients:
   - Outreach to PCPs to ensure drug regimens are optimal
   - Provide both PCPs and patients with action plans that facilitate early outpatient treatment of COPD exacerbations.
   - Partner with the Center for Connected Health to evaluate use of a mobile device for patient education and self-monitoring
2. Pulmonary and Critical Care Medicine/Chelsea Health Center Community Outreach COPD program
3. Evaluate a pulmonary rehabilitation intervention comprised of minimal on-site visits, patient-directed in-home training, ongoing support and monitoring via phone and/or mobile device (described below)
4. Inpatient Medication Utilization — Conversion of high-cost inhalers to lower-cost medications to reduce inpatient drug costs

**BASELINE DATA – CY12**

Mass General COPD Patients = 4,298
- All cause inpatient admission: n = 1902
  - 30-day readmission rate = 20.6%
- COPD related inpatient admission: n = 567
  - 30-day readmission rate = 21.5%
  - Obs/Exp LOS ratio = 1.18 [479 excess days]

COPD patients currently in the iCMP Program = 417*
- All cause inpatient admissions = 259
  - 30-day readmission rate = 18%

*An additional 245 patients are eligible or new to the iCMP program

Some facts about the COPD/iCMP cohort:
- Patients who go home after admission for a COPD exacerbation: 75%
- Patients participating in any pulmonary rehabilitation: n = 23 of 417 (6%); degree of participation in the program varied widely

**MOBILE DEVICE**

For patient education and self-monitoring. Capabilities include:
- Patient self-reporting of medication compliance and symptoms
- Wireless interface with pedometer, pulse oximeter and scale
- Custom educational videos
- Remote monitoring and video chat

**TEAM LEADERS**

Paul Currier, MD
Fiona Gibbons, MD
Christine Kaliris, Admin Director
Joan Strauss, Process Improvement
Michael Sullivan, PT, DPT, MBA

**NEXT STEPS**

- Outreach to PCPs for optimization of outpatient medications to avoid hospitalizations
- Complete initial trials of action plan and embed in LMR
- Implement a pop-up message regarding inpatient drugs of choice
- Initiate mobile device pilot in the fall of 2013
- Track key outcome measures
  - Quality of life
  - Inpatient LOS
  - Readmission rate
  - Overall costs (for iCMP patients)
- Other measures of interest:
  - Improved function/independence
  - Medication compliance
  - Oxygen use
  - Smoking cessation
Back Pain Care Redesign Team

The current treatment navigation system for patients who present with low back pain is very complex. Patients may end up on one of the many services that treat back pain and there may be a delay in getting them to the appropriate service. Challenges with the current treatment navigation system include difficulty in navigating the care system with patient demands driving much of care decision-making and treatment variation between providers.

The Back Pain Care Redesign Team is a multidisciplinary group with representation from Orthopaedic Spine, Neurosurgery Spine, the Pain Center, Physiatry, Physical Therapy, Radiology, Occupational Health, Internal Medicine, the Emergency Department, Case Management, Social Services, Admitting Services and the Professional Billing Office. The goal of the Back Pain Care Redesign team was to define clear pathways to improve variation and appropriateness of care through the following interventions:


To address issues related to navigating the treatment system for back pain, the Back Pain Care Redesign Team developed an algorithm to standardize care and provide support to clinicians to help them direct patients to the appropriate service.

The team also designed the Mass General Spine Line, which will provide a single telephone number where patients or providers can speak to a nurse practitioner well versed in the national guidelines and their specific adaptation for Mass General practices. This specialist will help the provider (and possibly in the future, the patient) determine the appropriate next steps for resolving the back pain episode and make a referral if indicated. Effective Spine Line management will: improve access to care and appropriateness of referrals; increase referring provider satisfaction and overall referrals; increase patient satisfaction; reduce admissions and length of stay; and decrease total costs of care.

The Back Pain Team is also working to ensure appropriate utilization of the ED Observation Unit for patients with back pain in an effort to reduce unnecessary admissions to inpatient units, the number of bed days and the cost of treating patients with acute low back pain.

“Back pain affects patients across the continuum of care, from primary care to subspecialists, and the Care Redesign process gave us an opportunity to pull together a broad, multidisciplinary team to design a more efficient and effective system for managing our patients.”

Chris Gilligan, MD
Physician Co-Lead, Back Pain Team

TEAM MEMBERS

Chris Gilligan, MD
Jim Rathmell, MD
Joe Schwab, MD, MS
Jordan Romano, DO
Keith Marple
Kelsey McCarty
Vanessa Rao
Andy Gottlieb, NP
Ben Orcutt
Bill Palmer, MD
Bonnie Chabra
David Binder, MD
David Peak, MD

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Janice Filteau
Jean-Valery Coumans, MD
Joshua Hirsch, MD
Karen Sepucha
Katy Perkins
Leigh Simmons, MD
Marie Gioiella, MSW, LICSW
Mike Sullivan, DPT, PT, OT
Ryan Thompson, MD
Sanjay Chaudhary
Steve Atlas, MD
John Shin, MD
**AIM:** The current treatment navigation system for patients who present with low back pain is very complex. Patients may end up on one of the many services that treat back pain, and there may be delays in getting patients to the appropriate service. Challenges with the current treatment navigation system include:

- Difficulty in navigating the care system with patient demands driving much of care decision-making
- Treatment variation between providers

The Back Pain Care Redesign Team is a multidisciplinary group with representation from Orthopaedic Spine, Neurosurgery Spine, the Pain Center, Physiatry, Physical Therapy, Radiology, Occupational Health, Internal Medicine, the Emergency Department, Case Management, Social Services, Admitting Services and the Professional Billing Office. The goal of the Back Pain Care Redesign Team is to define clear pathways to improve variation and appropriateness of care through the following interventions:

1. Mass General Spinal Pain Algorithm
2. Mass General Spine Line
3. ED Obs Unit Project

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**CURRENT STATE**

**FUTURE STATE**

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*Steps are not sequential:*

--- Flow for surgical svcs (Neuro/Ortho Spine)  
--- Flow for Pain Ctr, Physiatry

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**1. Mass General Spinal Pain Algorithm**

**2. Mass General Spine Line**

**3. ED Obs Unit Project**

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**PROJECT CHAIRS**

Jim Rathmell, MD  
Chris Gilligan, MD

**TEAM LEADERS**

Joe Schwab, MD, MS  
Jordan Romano, DO  
Kelsey McCarty  
Keith Marple  
Vanessa Rao

**TEAM MEMBERS**

Jim Rathmell, MD  
Chris Gilligan, MD  
Joe Schwab, MD, MS  
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Ben Orcutt  
Bill Palmer, MD  
David Peak, MD  
Katy Perkins  
Diane Plante, PT  
Vanessa Rao  
Karen Sepucha  
Leigh Simmons, MD  
Mike Sullivan, DPT, PT, OT  
Ryan Thompson, MD
**AIM:** Navigating the treatment system is challenging for patients who present with back pain. Patients may end up on one of the many services that treat back pain and there may be a delay in getting them to the appropriate service; there is a need to clearly define the pathway. One intervention to address this issue is the development of an algorithm to standardize care and provide support to clinicians to help direct patients to the appropriate service.

**TEST**
- Determine the appropriate triage point based on patient’s spinal condition/symptoms
- Modify full algorithm for PCP/ED-specific needs for easy reference and clinician usability
- Roll out pilot to specific practices (ED, PCP offices, Urgent Care)

**NEXT STEPS**
- Modify current guidelines for PCP and ED versions
- Pilot PCP/ED guidelines and review results
- Develop web application to increase ease of use
- Incorporate guidelines into clinical decision support systems

**MGH SPINAL PAIN ALGORITHM**

**NON-SPECIFIC LOW BACK PAIN (NSLBP)**

1. Patient has shown improvement
   - Keep going; transition to home exercise (most patients can benefit from 10-16 weeks after initial visit)

2. Patient has no significant improvement
   - Refer to spine specialist

3. Patient presents with spinal pain
   - Ask patient to complete the ODI (Page 28, Figure 3)

4. Chronic low back pain
   - Consider imaging: MRI, CT scan, bone scan, nuclear medicine bone scan

**FURTHER READING**


**PROJECT CHAIRS**

Jim Rathmell, MD
Chris Gilligan, MD

**TEAM LEADERS**

Joe Schwab, MD, MS
Steve Atlas, MD
Diane Plante, PT
Leigh Simmons, MD
Ryan Thompson, MD
Kelsey McCarty
Keith Marple
Vanessa Rao

**COUNCIL OF UAV BIOSKETCHES OF SPINAL PAIN GUIDELINES**

- **Back Pain**
  - **Purpose**: Keep the Diagnosis under review
  - **Recommendations and guidance for post-operative care, other acute care management has been completed**

**TEAM MEMBERS**

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**AIM:** Common spinal disorders are well-studied conditions with nationally accepted treatment guidelines, but also a wide array of treatment options. These include conservative care, pain medications, injections, imaging, physical therapy and surgery. The majority of patients with spinal conditions first see their primary care provider or visit the Emergency Department. For patients and providers, however, the guidelines, appropriate plan of care and referral options often remain unclear.

The Spine Line will provide a single telephone number where patients or providers can speak to a nurse practitioner well versed in the national guidelines and their specific adaptation for Mass General practices. This specialist will help the provider or patient determine the appropriate next steps for resolving the back pain episode and make a referral if indicated.

**TEST**

The objective of the Spine Line is to ensure that patients with episodes of spinal disorders receive a timely care management plan designed to resolve their pain, while sparing them unnecessary procedures and visits so they can return to normal function as soon as possible. We anticipate that the Spine Line will be a resource primarily for PCPs and the ED. Effective Spine Line management will:

- Improve access to care and appropriateness of referrals
- Increase referring provider satisfaction and overall referrals
- Increase patient satisfaction
- Reduce admissions and length of stay
- Decrease total costs of care

**RESULTS**

The Spine Line will begin shortly. Many logistical decisions have been made for implementation:

- The Spine Line will be staffed with an NP familiar in the treatment courses for spinal disorders
- The specialist will answer calls from referring providers (estimated call volume = 2,500 PCP and ED referrals annually)
- The Mass General Acute Low Back Pain Guideline will be used to determine the appropriate next steps in the patient’s care plan
- If a referral is indicated, the Back Pain “Who to Contact” list will assist in booking the first appointment availability and book the referral for the patient
- The Spine Line will be operational Monday through Friday, 8 am – 4:30 pm

**NEXT STEPS**

- Identify NP to fill role
- Design referral system to be used
- Pilot Spine Line in PCP offices and ED
Back Pain Care Redesign: Mass General Emergency Department (ED) Observation Unit Project Group

AIM: Patients with non-surgical back pain who come to the ED are either discharged home after treatment or are admitted to the ED Observation Unit or an inpatient unit. Patients on the inpatient unit tend to have a longer-than-expected length of stay. The goal is to reduce unnecessary admissions to inpatient units, the number of bed days and the cost of treating patients with acute low back pain.

TEST
Initiatives planned or under way to meet the goals include:
- Continue referring appropriate patients from ED to ED Observation Unit rather than inpatient units
- Create standardized clinical guidelines to manage patients in ED Observation Unit
- Immediate availability of pain consultants for pain management
- Rapid access to spinal injections
- Provide access to urgent outpatient physical therapy

RESULTS
- The length of stay for patients admitted directly to an inpatient unit was 5.2 days, versus 2.6 days for patients who were admitted from ED Obs to an inpatient unit
- The number of patients admitted to an inpatient unit has decreased and Mass General projects to save ~100 bed days in inpatient units

NEXT STEPS
- Track and review pilot results
- Learn from the results
- Adapt, Adopt or Abandon changes
- Identify other areas to improve to ensure safe discharge of patients
National Recognition for Back Pain Care Redesign Team

PRESENTATIONS / POSTERS / PUBLICATIONS

**American Society of Anesthesiologists Practice Management Conference, January 24 – 26, 2013.**

Christopher Gilligan, MD
*Preparing for Accountable Care: Understanding the Costs in Caring for Patients with Back Pain and Assembling a Comprehensive Care Team and Strategies for Minimizing Inpatient Length of Stay.*

**American Society of Anesthesiologists (ASA), October 12 - 16, 2013.**

Session Title: Back Pain and Health Care Redesign: Preparing for Accountable Care.
- James Rathmell, MD
  *Preparing for Accountable Care: Understanding the Cost in Caring for Patients with Back Pain and Assembling a Comprehensive Care Team.*
- Joseph Schwab, MD
  *Acute Back Pain: Establishing Rational Care From Onset to Resolution*
- Christopher Gilligan, MD
  *Caring for the Patient with Back Pain who Requires Hospitalization: Strategies for Minimizing Inpatient Length of Stay*

**American Society of Interventional Pain Physicians, November 16 - 17, 2013**

Christopher Gilligan, MD
*Caring for the Patient with Back Pain who Requires Hospitalization: Strategies for Minimizing Inpatient Length of Stay.*

**American Society of Regional Anesthesia and Pain Management, November 21 - 24, 2013**

Christopher Gilligan, MD
*Reducing Length of Stay and Inpatient Admissions of Patients Presenting with Acute Low Back Pain Through Use of Observation Units*

**American Society of Anesthesiologists (ASA), January 2014 Newsletter (January 2014, Volume 48, Number 1)**

Christopher Gilligan, MD
*Care Redesign*

“Care redesign is where health care is headed. When we talk about what we are doing outside of the institution, there is incredible enthusiasm and our team is being asked to present our efforts to redesign care for patients and how we are preparing for the future.”

James Rathmell, MD
Physician Co-Lead, Back Pain Team
Access to limited psychiatry beds is crucial for patients awaiting placement in the ED, medical-surgical units and outpatient practices. Initiatives were undertaken on Blake 11 to reduce length of stay and to facilitate early discharge to enhance access to our medical psychiatry unit. The goals of the Inpatient Psychiatry Care Redesign Team were well aligned with and helped further advance the improvements achieved through the Innovation Unit initiative.

The Inpatient Psychiatry Care Redesign Team piloted the following initiatives: identification of a target discharge date at time of admission; moving “super team” earlier in the morning (to 8:45 am instead of 11:00 am), and supporting culture change. The attending RN role, created as part of the Innovation Unit to facilitate prescriptions, arrange transportation and coordinate warm handoffs, was crucial to the success of these initiatives. As it was determined that patients receiving ECT (electroconvulsive therapy) accounting for a large proportion of outliers with particularly long hospitalizations (average LOS > 15 days), variability in the time to consult for ECT and initiate treatment were also identified as targets for process improvement.

The pilot tests of change showed: mean LOS decreased by a full day from approximately 11.3 days to 10.2 days while pre-noon discharge increased by several-fold from 6-14% to 20-39% without an increase in readmission rates. Time to request a consult for ECT dropped from 3.5 days to 1.2 days; time to first ECT was reduced from 6.5 days to 3.0 days; Average LOS for ECT patients was reduced from 16.4 days to 14.5 days.

**TEAM MEMBERS**

Jonathan Alpert, MD, PhD  
Tony Weiss, MD, MBA  
Christina Stone, RN  
Jeff Huffman, MD  
Joy Rosen  
Sanjay Chaudhary  
Joan Strauss
Psychiatry Care Redesign: Sustaining Gains

**AIM:** Blake 11 is a critical medical-psychiatry inpatient unit for the region. Access is crucial for patients awaiting beds in the ED, medical-surgical units and outpatient practices. Initiatives were undertaken on Blake 11 to reduce length of stay and to discharge patients as early in the day as safely possible, while assuring that the readmission rate was not affected adversely. Our care redesign efforts were piggybacked onto a bundle of changes associated with the March 2012 Innovation Unit roll out.

**TEST**
- Culture change
- Identifying a target discharge date at time of admission
- Moving “super team” to 8:45 am (instead of 11:00 am)
- Creation of the attending RN role as part of the Innovation
- Unit to facilitate prescriptions, arrange transportation, coordinate warm handoffs

**CONCLUSIONS**
- Communicating with staff about goals, vision and clear expectations, and providing regular feedback are crucial
- Engaging the staff is critical to operationalize the changes and to sustain the gains

**NEXT STEPS**
- Keep monitoring the results
- Systematize the process changes

**RESULTS**

**Observed to Expected Avg Length of Stay**

**Pre-noon Discharge Rate**

**Readmission Rate:** has remained steady since the institution of the changes

**TEAM MEMBERS**
- Tony Weiss, MD, MBA
- Jonathan Alpert, MD, PhD
- Jeff Huffman, MD
- Christina Stone, RN
- Joy Rosen
- Sanjay Chaudhary
- Joan Strauss

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Psychiatry Care Redesign: Improving ECT Processes

AIM: As part of efforts to reduce inpatient psychiatry [Blake 11] length of stay, it was determined that patients receiving electroconvulsive therapy (ECT) were among outliers with an average LOS > 15 days over patients not receiving ECT. Variability in the time to consult for ECT and initiate treatment were identified as targets for process improvement.

TEST
• Identify patients who need ECT
• Ensure consults are called at the earliest (prior to admission when possible)
• Ensure consults happen within 24 hours
• Ensure patients are scheduled and all work-up happens promptly if consult service recommends ECT

RESULTS

CONCLUSIONS
• Pilots have shown that time to request consult for ECT has decreased from 3.5 days to 1.2 days
• Time for First ECT has decreased from 6.5 days to 3.0 days
• ALOS for ECT patients has decreased from 16.4 days to 14.5 days
• Readmission rate is unchanged, showing no adverse impact

NEXT STEPS
• Monitoring the results to sustain the gains
• Systematize the process changes
“The Innovation Units and Care Redesign Teams have been working together over the past two years to advance patient- and family-focused care, improve processes and ensure care is safer, more timely and more equitable. We have a great past and a bright future with these teams working together.”

Jeanette Ives Erickson, RN, DNP, FAAN
Chief Nurse and Senior Vice President for Patient Care Services
The Premature Neonate Care Redesign Team is a multidisciplinary group, representing physicians, nurses, case managers, social workers, physical therapists, occupational therapists and dietitians. The team has focused its efforts in the following areas:

- **Utilization of routine head ultrasounds for premature neonates:** After reviewing Mass General newborn outcomes since 2006, the team implemented updated routine head ultrasound screening guidelines, based on American Academy of Neurology recommendations, improving value by reducing the number of unnecessary studies and improving clinical care by not subjecting premature babies to unnecessary stress. After implementing the revised guidelines for babies born less than 30 weeks gestation, the Premature Neonate Care Redesign Team measured a 60% reduction in head ultrasound utilization, which would lead to an approximate cost savings of $200,000. While this initiative reduced costs, it also achieved the goal of improved patient care by eliminating unnecessary procedures for our tiniest patients.

- **Optimizing nutrition and growth:** The team collected data on infant growth and determined that establishing processes to optimize nutrition and growth were needed. First, the team brought awareness to data and the issue. Next, the team implemented a comprehensive approach to improving nutrition delivery, including standardizing initiation and advancement of both enteral and IV nutrition, making pasteurized donor human milk available, and developing an electronic growth chart for closer monitoring. After nine months the team significantly improved the growth outcomes in all gestational age categories, with the greatest improvements in the most premature neonates.

- **Medical insurance and newborn names:** The team is currently working to address issues surrounding administrative hurdles Neonatal Intensive Care Unit (NICU) infants face because they are born and admitted to the NICU without a name. It causes barriers to obtaining medical insurance and facilitating transfers. The Team is working with representatives from different departments across the hospital to develop a solution.
**AIM:** Implement updated routine head ultrasound screening guidelines to improve the value of care that is provided by reducing the number of unnecessary studies and also improve clinical care by not subjecting premature babies to the stress of studies that are not helpful.

**TEST**

After reviewing local outcomes, changed routine head ultrasound screening guidelines to improve value of care by following the AAN recommendations:

- Routine screening head ultrasounds will only be done in babies of less than 30/7 weeks gestation
- Screening will occur at 7 – 14 days of age, with follow-up at 36 – 40 weeks corrected gestational age (if no concerns on first ultrasound)
- If intraventricular hemorrhage is found, guidelines for follow-up are specified
- A non-routine head ultrasound will still be done for any clinical indication where a head ultrasound would help guide management

**RESULTS**

![Graph showing Actual/Predicted Head Ultrasound Utilization]

**CONCLUSIONS**

- 60% reduction in head ultrasound utilization post-intervention

**NEXT STEPS**

- New guidelines adopted as standard clinical practice
The Rheumatology Care Redesign Team focused on specialty drug prescription and utilization patterns in the Rheumatology Clinic. Between FY 2007 and FY 2013, the number of infusions taking place in the Rheumatology Clinic has increased approximately 350%, and the number continues to grow.

This rapid increase caused a strain on staff resources and also affected patient care. To address this problem, the Rheumatology Care Redesign team worked to create new streamlined workflows relating to scheduling, obtaining prior authorizations, and accessing the clinic, so as to reduce delays for clinically effective treatments and maximize utilization of existing infusion chairs.

This new streamlined system resulted in:

- Decreased time between infusion appointment scheduling and infusion appointment
- Decreased percent of no-shows for infusion appointments
- Increased percent of arrival for infusion appointments

“We had great enthusiasm from the members of the Rheumatology Care Redesign Team. From the faculty, fellows, nurses and staff, everyone was motivated to address the challenges the clinic faces and work together to develop a system to improve the patient care and staff experience.”

John Stone, MD
Physician Lead, Rheumatology Care Redesign Team

TEAM LEADERS

| John Stone, MD, MPH | Margaret Martin |
| Andrew Luster, MD, PhD | Mark Schnell |
| Brit Nicholson, MD | Mary Cramer |
| Deborah Collier, MD | Ray Mitrano, MS, RPh |
| Jaime Tirrell | Sean Gilligan |
| Joseph Ianelli | Traci Powers, RN |
| Liza Nyeko, MS | |
Rheumatology Care Redesign — Specialty Drugs

AIMS
• Streamline processes/enhance efficiency (prescribing, authorizations, scheduling, utilization)
• Determine whether tradeoffs in treatment regimens can reduce total specialty drug costs while upholding clinical quality

INTERVENTIONS
• Transition to electronic prescription and prior authorization forms
• Redesign prior authorization tracking and scheduling processes
• Implement SmartCalling
• Redirect incoming phone calls and redesign PSC/MD model
• Expand infusion chair access — collaboration with other infusion unit(s)/ resource allocation
• Design patient education packets
• Revisit departmental policies (e.g. no show/cancellation)
• Explore relative specialty drug costs
• Explore clinically equivalent alternative treatment regimens
• Collaborate with other Mass General and Partners teams exploring similar questions

RESULTS (TO DATE)

<table>
<thead>
<tr>
<th>MEASURE</th>
<th>DESIRED DIRECTIONAL</th>
<th>BASELINE CY12</th>
<th>RESULT TO DATE CY13 as of 6-30-13</th>
<th>ACTUAL DIRECTIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infusion sched. to appointment time</td>
<td>30-45 days</td>
<td>47.7 days</td>
<td>39.0 days</td>
<td></td>
</tr>
<tr>
<td>Infusion appt. no show %</td>
<td></td>
<td>5.1%</td>
<td>3.8%</td>
<td></td>
</tr>
<tr>
<td>Infusion appt. arrival %</td>
<td></td>
<td>61.2%</td>
<td>65.9%</td>
<td></td>
</tr>
<tr>
<td>OPA complaints</td>
<td></td>
<td>16</td>
<td>3</td>
<td></td>
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</tbody>
</table>

CONCLUSIONS (TO DATE)
• Access numbers are moving in the right directions
• Prior authorization/scheduling changes have enhanced capacity to track/manage denials for expensive drugs
• Patients, clinicians and staff report increased satisfaction with access and processes
• Transition to alternative potentially less costly clinically equivalent therapies is challenging due to variety of factors

NEXT STEPS
• Develop education packets
• Continue to identify ways to maximize chair utilization
• Quantify changes in total denials
• Continue to explore relative drug costs and potential alternative treatment regimens
• Continue to explore potential collaborations at Mass General and Partners levels

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