Implementing Resident-Led Interdisciplinary Quality Improvement

Advocate Lutheran General Hospital

Advocate Childrens Hospital—Park Ridge

Resident-Led Quality Improvement

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Advocate Lutheran General Hospital Family Medicine Residency

Why our model?

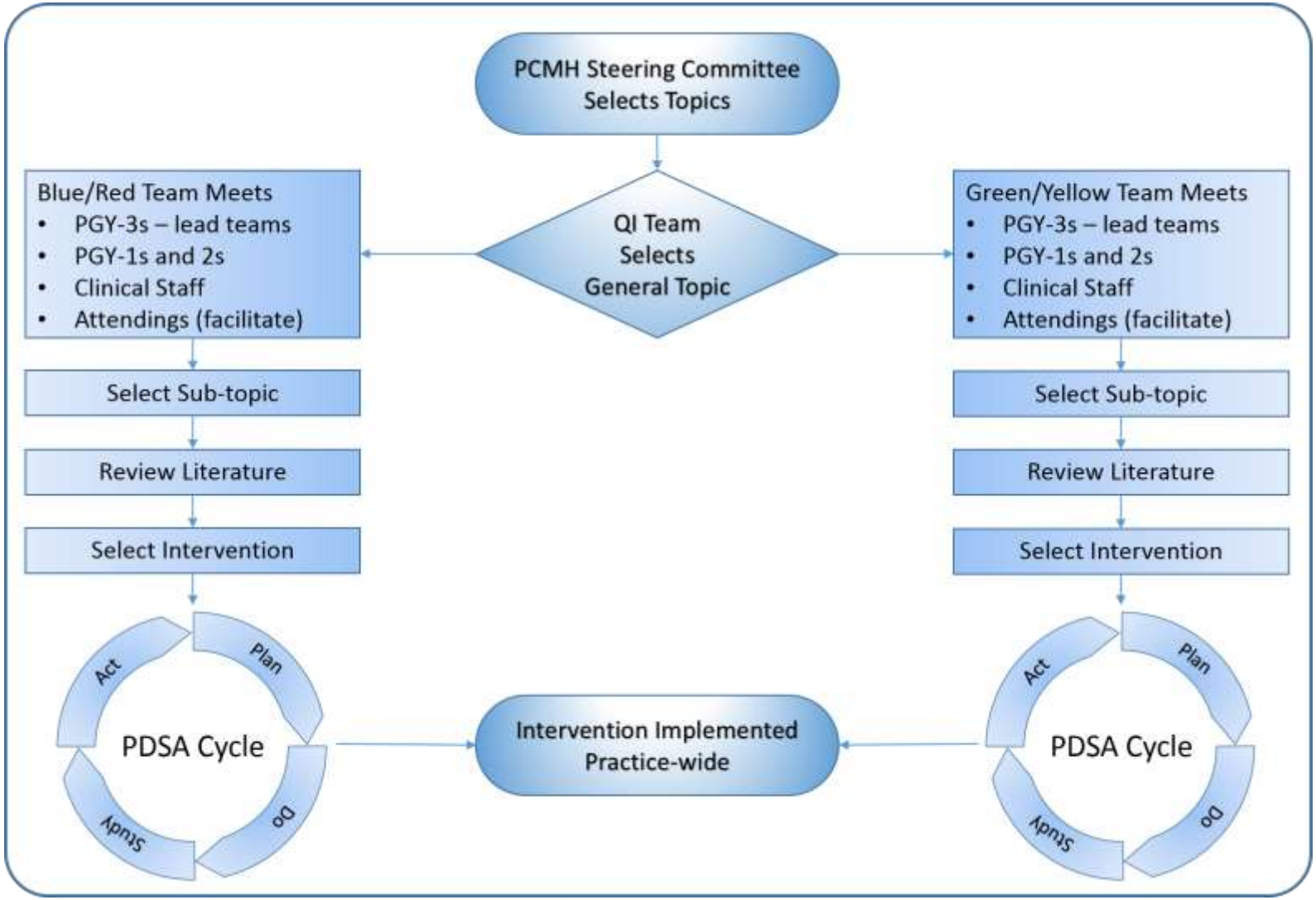
Goals

- Develop resident leadership
- Increase collaboration with staff
- Develop skill in working with teams
- Teach quality improvement
- Basic research skills

How the model works

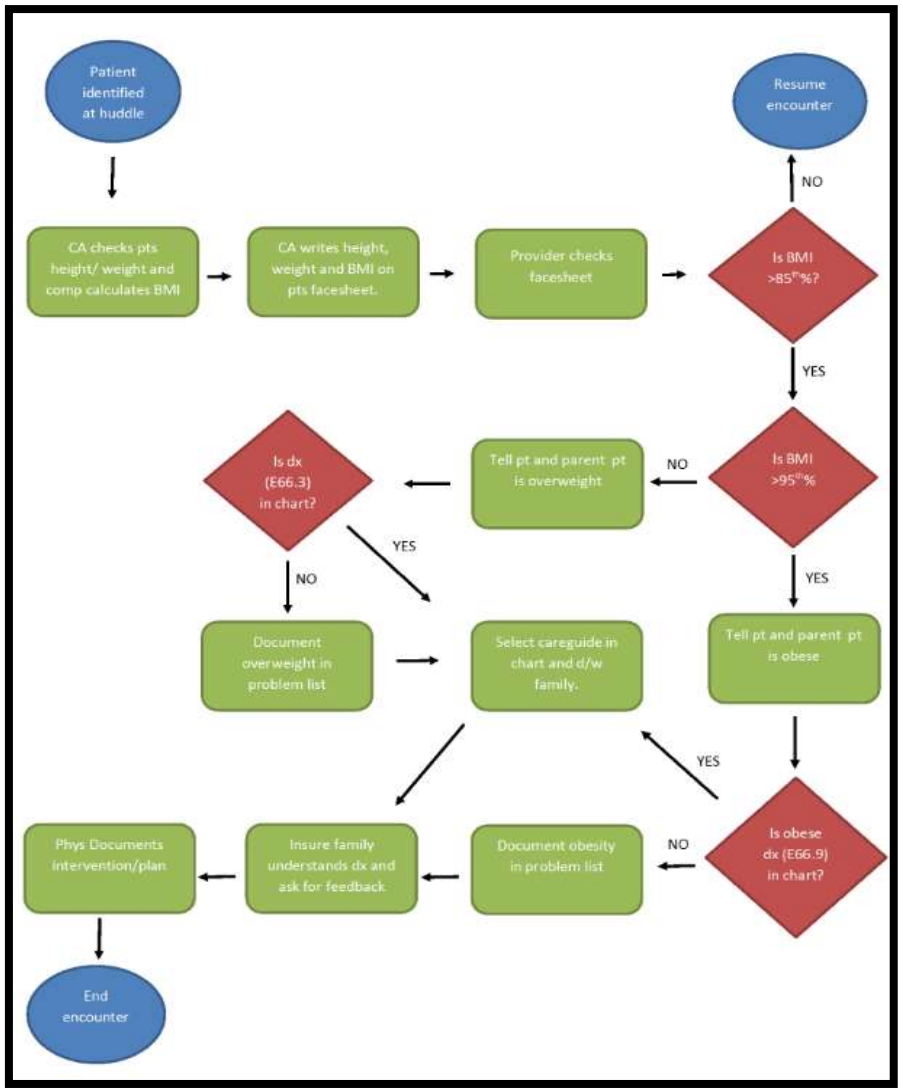
Team members

- Leaders: PGY3 residents
- PGY2 residents
- PGY1 residents (schedule permitting)
- Faculty
- Clinical Associates
- Front desk staff


PCMH Steering Committee
Selects Topics
QI Team
Selects
General Topic
Blue/Red Team Meets
• PGY-3s – lead teams
• PGY-1s and 2s
• Clinical Staff
• Attendings (facilitate)
Green/Yellow Team Meets
• PGY-3s – lead teams
• PGY-1s and 2s
• Clinical Staff
• Attendings (facilitate)
Select Sub-topic
Review Literature
Select Intervention
Select Sub-topic
Review Literature
Select Intervention
Plan
Do
Study
Act
PDSA Cycle
Intervention Implemented
Practice-wide
Plan
Do
Study
Act
PDSA Cycle

Recent topics

- Diabetes
  - Team 1: HbA1C education
  - Team 2: Referrals to ophthalmology
- Pediatrics
  - Team 1: Diagnosis and education of pediatric obesity
  - Team 2: Vaccine education
- COPD
  - Project topics pending



Process Map Example

Increasing Accurate Identification and Documentation of Overweight and Obese Pediatric Patients

Increasing Accurate Identification and Documentation of Overweight and Obese Pediatric Patients: A Quality Improvement Project

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Abstract:

The number of overweight and obese children is continually rising and becoming a significant problem in the United States, leading to both increased morbidity and financial burden.

Between 2011 and 2014 nearly twenty percent of children between the ages of 2 and 19 met criteria for obesity, costing 14 billion dollars in prescription drug and physician visits costs each year.

Pediatric obesity is diagnosed when a child's BMI is greater than the 95th percentile of all children in their age group. A BMI between the 85th and less than the 95th percentile for a patient's age group is classified as being overweight.

These patients have a significantly increased risk of developing asthma, sleep apnea, orthopedic issues, diabetes mellitus, and psychosocial impairment.

The need to provide proper intervention to children and families, therefore, becomes a necessity. However, physicians may not have the proper education or experience to identify these children and provide useful education and intervention strategies.

Physician level barriers to appropriate care include inadequate training in weight counseling and limited knowledge of the tools needed for the diagnosis and treatment of obesity. Moreover, if physicians are to become responsible for intervening, the accurate identification and diagnosis of pediatric obesity is a necessary precedent.

Aim Statement:

The purpose of this quality improvement project is to increase accurate identification and documentation of obese and overweight pediatric patients. The first step in managing pediatric weight issues is through proper identification and diagnosis.

We aim to increase accurate identification and documentation of obese/overweight patients by 75% and provide one documented counseling intervention to those identified by March 15th, 2017.

Table 1. BMI Percentile and Definitional Categories of Childhood Weight	
Underweight	< 10th percentile
Normal	10th to 84th percentile
Overweight*	85th to 94th percentile
Obese*	≥ 95th percentile
Extreme obesity	≥ 120% of the 95th percentile

*The US Department of Health and Human Services uses the terms overweight and obese interchangeably.

Figure 1. Weight status definitions based on BMI percentile

Methods:

Implementation Process:

1. Identify patients as obese or overweight using BMI calculated at the beginning of the visit
2. Check the problem list
3. Diagnosis of other obese/overweight given if applicable and not already documented. The following diagnostic codes will be used: Pediatric obesity: E669 and Pediatric overweight: E663.
4. Select care guide associated with each of the above diagnoses
5. Printed care guide will be given to patient (this will serve as both our intervention and method of documenting the provision of an intervention)

Data Collection:

1. Baseline data collected over a 6 month period of time prior to implementation on all patients age 2 through 17 with BMI over the 85th percentile
2. Identify the number of obese patients diagnosed as obese or overweight
3. Identify the number of patients who did not have these codes applied when they should not have been.
4. Data then collected covering the first month time period following implementation
5. Patient data reviewed, looking at accurate diagnosis and documentation of overweight/obese as well as education intervention on patients diagnosed with obesity

Figure 2. Process map outlining the steps our quality improvement process.

Figure 3. Obesity prevalence in the United States

Data:

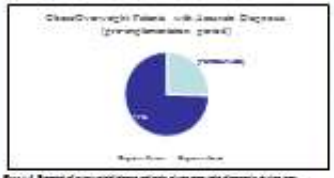


Figure 4. Percent of overweight/obese patients given accurate diagnosis during pre-implementation period

Figure 5. Percent of overweight/obese patients given accurate diagnosis during implementation period

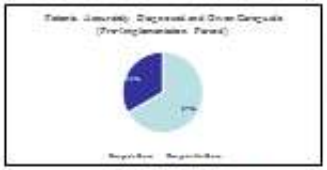


Figure 6. Percent of overweight/obese patients with accurate diagnosis and given counselling during post-implementation period

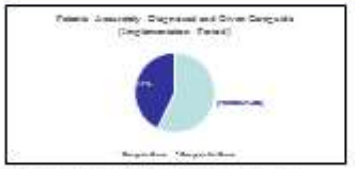


Figure 8. Patients accurately diagnosed and given counselling during implementation period

Pre-Implementation Period	12	19
Implementation Period	23	33
Post-Implementation Period	47	66
Accurate Diagnosis	25.5%	31.8%
Counseling Given	0	0
Accurate Diagnosis and Counseling Given	0	0
Patients with Obesity/Overweight Diagnosis Missing	12	14
Total	82	113
Percent Missing	14.7%	12.4%

Figure 7. Table form summarizing all the data

Analysis:

- 47 obese/overweight pediatric patients were seen in the pre-implementation period; 12 were diagnosed appropriately
- 66 obese/overweight pediatric patients were seen in the post-implementation period; 14 were diagnosed appropriately
- Using Chi-Square analysis, the p-value is .507, not significant at $p = 0.05$
- In both the pre and post implementation period, 0 of the identified overweight/obese patients were given a care guide (0/12 patients from the pre-implementation period and 0/14 from the post implementation period)
- Using Chi-Square analysis, the p-value is .618, not significant at $p = 0.05$

Conclusions:

Our implementation did not significantly increase the percentage of diagnosed obese/overweight children or the number of care guides given to obese patients.

Possible Reasons Include:

- Many visits where obesity was not diagnosed were acute visits
- Providers often focus on a specific issue and omit discussion on preventative health topics such as obesity
- Full understanding of QI protocol was limited by conflicts with resident scheduling at QI meetings

Future Improvement:

- reminding providers even for acute visits to note the BMI, document the correct diagnosis, and ask parents to return for discussion on interventions
- increasing the period of data collection to obtain larger n

References:

[1] Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. JAMA. 2014;311(8):806-814. doi:10.1001/jama.2014.732.

[2] Skinner AC, Ravanbakht SN, Skelton JA, Perrin EM, Armstrong SC. Prevalence of Obesity and Severe Obesity in US Children, 1999-2016. Pediatrics. 2018;141(3):e20173459. doi:10.1542/peds.2017-3459.

[3] Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of childhood and adult obesity in the United States, 2011-2012. JAMA. 2014;311(8):806-814. doi:10.1001/jama.2014.732.

Select Benefits of Resident-run QI

- Residents invest in improving their own clinical practice
- Residents learn:
  - Principles of quality improvement
  - Conducting literature reviews
  - IRB submission process
  - Basic statistical analysis
  - Academic dissemination through presentation
  - Leadership skills
  - Interprofessional teamwork

Limitations

- Resident responsibilities limit their attendance
- Resident engagement has been varied
- Short data collection periods
- Single PDSA cycle per project
- Full collaboration with staff inconsistent
- Continuing project momentum
- Difficult to solicit patient engagement

Resident Evaluation

- Residents are evaluated during each QI meeting
  - Attendance
  - Participation
  - Leadership
- Evaluations linked to resident milestones

Upcoming Improvements

- Increase resident engagement
- Conduct projects over 2 years
  - Shorten and increase number of PDSA cycles
  - Perform SDSA cycle
  - Increase time frame for data collection
- Run multi-year projects in parallel
  - New project started each year
  - Continue previous year's project
  - This year's projects:
    - Continue Pediatric Vaccinations and Obesity
    - COPD (new)

Patient Centered Medical Home

Advocate Children's Hospital Park Ridge Resident QI Project

September 28th, 2017

Emily Dudek, DO PGY-3
Dana Fiszbein, DO PGY-3

How this project started in 2013…

- Advocate Children's Hospital Park Ridge Pediatric Outpatient Clinic (Yacktman) underwent certification to become a Patient Centered Medical Home (PCMH) office

- There is a national trend to create medical delivery systems that support high-quality, efficient, and safe patient care

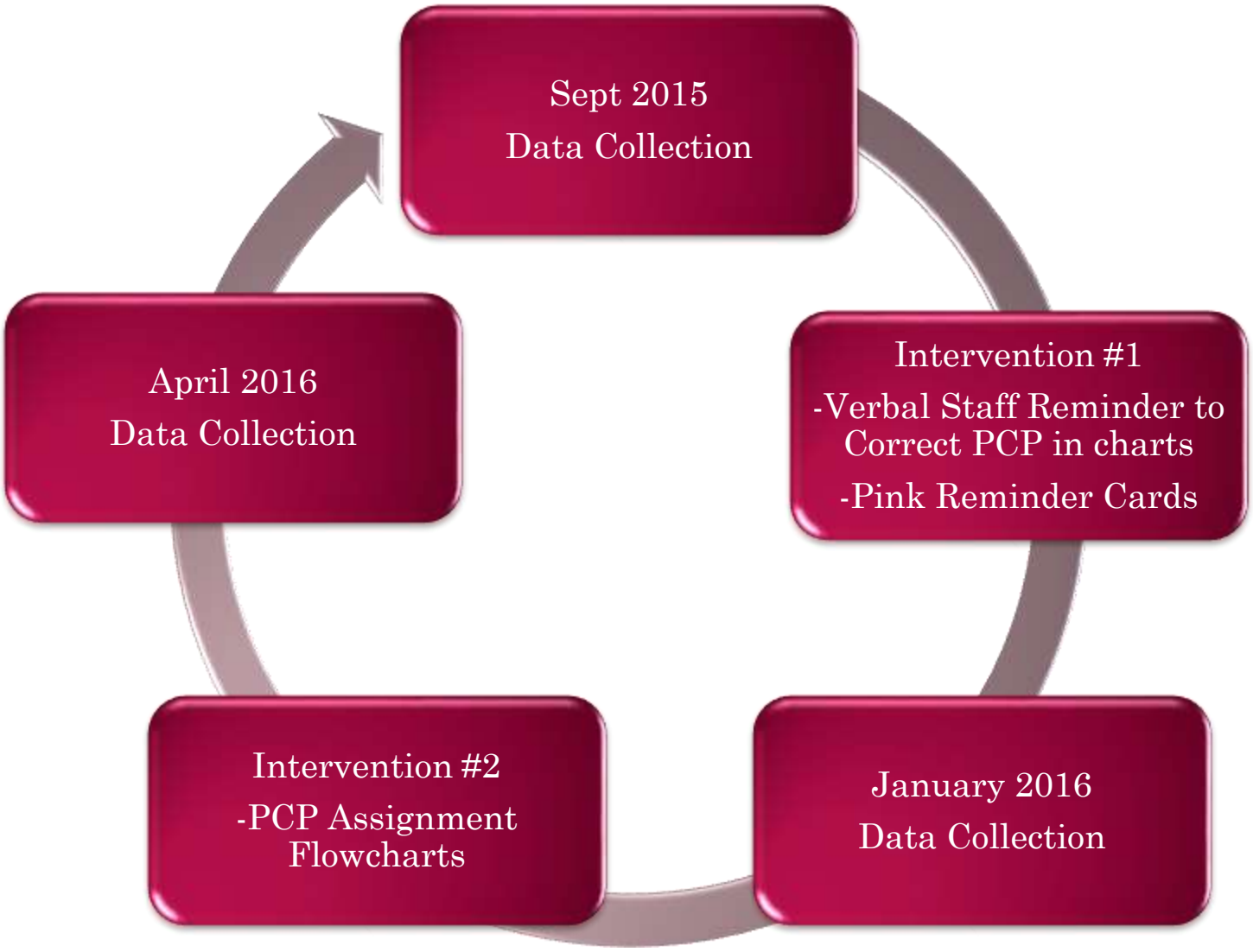
2013-2014 PROJECT

- Surveyed 500 families/parents in Yacktman Clinic about their perception of and satisfaction with their primary care physician (PCP)
  - Less than 60% of patients say they saw their PCP for at least half of well child visits
  - >96% of parents felt continuity with PCP was somewhat important
  - 62% parents were satisfied with their ability to make appointments with PCP
  - Intervention: A PCP designation slot created on Clinicare EMR system

2015-2016 Project

- Does listing the PCP in medical chart improve continuity of care?
- Does having a designated PCP improve continuity?
- Make the PCP a routinely checked and updated parameter by all staff members
- Create a flowchart for accurately updating the assigned PCP

Methods


Sept 2015
Data Collection
Intervention #1
-Verbal Staff Reminder to Correct PCP in charts
-Pink Reminder Cards
January 2016
Data Collection
Intervention #2
-PCP Assignment Flowcharts
April 2016
Data Collection

1. PCP is a current Yacktman provider and has seen the patient for 2 of their last 3 WCC

Keep that PCP listed at the patient's primary provider

2. PCP is outdated (graduated resident, former faculty)

3. PCP still at Yacktman, but sees pt <2/3 last WCC

4. No PCP listed

Pt has seen another provider 2/3 WCC-> new PCP

If no clear PCP, ask patient who they consider their PCP

If no clear provider, keep PCP blank

Chart Review Results: PCP Status

PCP Status	Sept 2015 # (%)	Jan 2016 # (%)	April 2016 # (%)
No PCP listed **p = 0.046**	186 (26%)	209 (27%)	244 (30%)
PCP listed BUT not up-to-date p = 0.085	79 (11%)	86 (11%)	67 (8%)
PCP listed BUT matches <2 of the last 3 WCC (aka 0 or 1) **p = 0.012**	159 (22%)	140 (18%)	136 (17%)
PCP listed AND matches at least 2 of the last 3 WCC* p = 0.216	297 (41%)	328 (43%)	356 (44%)

** exceptions: if the patient is new or an infant and has <3 WCC then the patient has to have seen the same provider for ALL visits*

Results (April 2016): Continuity by Age

Age	Continuity	No Continuity
≤ 1 yr	66 (33%) (29%) p = 0.460	135 (67%) (71%)
1-5 yrs	151 (55%) (50%) p = 0.258	125 (45%) (50%)
6-10 yrs	81 (51%) (42%) p = 0.136	79 (49%) (58%)
≥11 yrs	58 (35%) (41%) p = 0.262	108 (65%) (59%)

Age <1 yr = 201
Age 1-5 yr = 276
Age 6-10 yr = 160
Age ≥11 yr = 166

Percentage from 9/2015

Results (April 2016): Continuity by Physician Type

Physician Type	Continuity	No Continuity
Attending/Current Chief	313 (73%) (69%) p = 0.162	114 (27%) (31%)
Current Resident	**29 (64%) (38%) p = 0.027**	16 (36%) (62%)
Nurse Practitioner	15 (74%) (69%) p = 0.5	5 (26%) (31%)

N=803
43 patients had listed PCP as graduated resident or physician no longer here
244 patients samples had no physician listed

Percentage from 9/2015

Data Analysis

- From Sept 2015 thru April 2016, the percentage of patients with a correctly identified PCP increased (41 to 44%). However, this was not statistically significant.
- Percentage of patients with incorrectly labeled PCPs decreased (statistically significant). Continuity was higher among privately insured patients
- Continuity was higher in ages 1-10 yrs
- Attending physicians and NPs have greater continuity than residents.
  - However, continuity among residents has increased since the start of interventions

Future Project Aims and Methods

Current QI project:

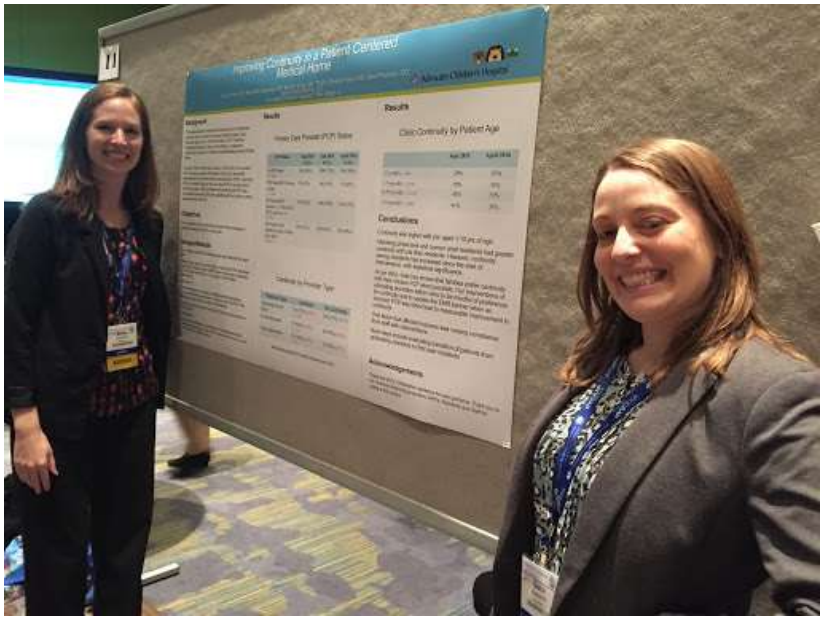
1. Continue to optimize PCP continuity among all patient groups
2. Continue to verify PCP listed at each visit
3. Continue to follow algorithm for updating and changing PCP

Potential new branch of project:

1. Evaluate transition of continuity patients from graduating residents to first year residents
    a. Provide interventions to promote continuity during times of transition in the office
2. If continuity is not attainable among a single provider, consider optimizing within a medical home group

Conclusions

- Our efforts are working, but there is more to do!
- Would like to see improved continuity in the >11yr age group
- More patients now have no PCP listed → encourage parents to identify a PCP to promote continuity



Acknowledgments

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- Our Co-Residents and the Yacktman Attendings

Questions or Comments?