South Carolina AHEC Resident Scholarship Symposium

Family Medicine Resident Abstracts

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Introduction

Each year we are proud to host the South Carolina AHEC Resident Scholarship Symposium in partnership with the South Carolina Academy of Family Physicians (SCAFP). Unfortunately, this year we were unable to host the event in person at the SCAFP's Summer Break Away and Annual Assembly due to the ongoing COVID-19 pandemic.

However, we still want to feature the work that family medicine residents across South Carolina had been working on leading up to the conference. In the following pages, please find abstracts for residents' original research or quality improvement initiatives that would have been presented at the 2020 Resident Scholarship Symposium. Join us in recognizing the outstanding efforts of these future leaders in family medicine.

Sincerely,

Kristin Cochran, MHA
Director of Recruitment & Retention Programs

Ann Lefebvre, MSW, CPHQ
Executive Director

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Quality Improvement Abstracts

Prospective Observational Analysis of Empowering Practice Change for Substance Use Disorder Screening and Intervention

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Introduction

The SAIL model is a strategy for healthcare providers to *SEE* substance use disorder as a disease (genetic predisposition, phenomenon of craving, brain chemistry of relapse), *ASSEMBLE* the tools to impact the disease (the use of validated tools such as the DAST-10 and AUDIT-C) and *INITIATE* practice change and clinical intervention to help patients *LIVE* free from the disease of substance use disorder (brief intervention and referral to treatment).

Methods

Over 84 medical providers participated in this project. This prospective observational analysis examined the methods of education, identified validated screening tools, and acknowledged barriers for practice change regarding the disease and treatment for Substance Use Disorders (SUD). Furthermore, various education methods including video presentation, in person presentation, and written presentation were investigated. Through using two research instruments, the Fund of Knowledge survey and Clinical Practice survey, the provider's fund of knowledge was assessed regarding validated screening and intervention. These areas were then reanalyzed following education using the SAIL Model. The survey instruments were administered three months' post education to determine if there was an association between education and practice change.

Results

Results indicate that there was an observed association between education and practice change using the SAIL model. Specifically, these associations are consistent with an increase in the use of validated screening, an increase in the use of prescription monitoring (SCRIPTS/ PMP-WARE), fewer prescriptions for controlled substances written for a duration greater than 7 days, and an increase in referral to treatment.

Discussion

Provider education using the SAIL model can be considered for further research to determine efficacy in general practice for decreasing the gap between disease and treatment for substance use disorders.

Do Nursing Protocols Improve A1c Monitoring in Diabetic Patients at Mcleod Family Medicine Center?

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Introduction

Diabetes control is measured by hemoglobin A1c every 3-6 months per recommendations from the American Diabetes Association (ADA). Nursing protocols often increase the likelihood that labs are ordered and performed in a timely manner. However, at this residency program's Family Medicine Center (FMC), nurses do not order hemoglobin A1c on their own. This project seeks to improve the percentage of diabetic patients at the McLeod FMC who have a current hemoglobin A1c test as defined by the ADA through a nursing driven protocol.

Methods

Snapshot Data was collected on April 30, 2019 from patients who had a diagnosis of diabetes mellitus type 2, identifying 1160 patients as the sample size. The percentages were calculated for well controlled patients without an A1c within six months and for poorly controlled patients without an A1c within 3 months, per ADA guidelines. During the intervention stage, from July 1, 2019 to August 31, 2019, nurses were asked to identify patients with a diagnosis of diabetes and order a hemoglobin A1c if appropriate. Snapshot data was collected on September 1, 2019 for comparison.

Results

Pre-intervention data revealed 40.0% of FMC patients whose hemoglobin A1c was less than 8 did not have an up to date lab test. Slightly higher, 55.5% of uncontrolled diabetic patients did not have an up to date hemoglobin A1c. Post intervention data had a reduction in out of date hemoglobin A1c to 36.9% for controlled FMC patients. However, there was a slight increase in out of date hemoglobin A1c for uncontrolled FMC patients to 59.5%.

Discussion

Having a nursing protocol may help increase our up to date hemoglobin A1c numbers for McLeod FMC patients. Inconsistency of protocol utilization by nurses due to competing demands at our clinic likely played a role in the mixed results.

Does a Disease Specific Clinic within a Primary Care Clinic Improve Patient Outcomes?

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Self Regional Family Medicine Residency Program

Introduction

Diabetes is one of the most common chronic illnesses and is a leading cause of death and disability. Due to the increasing number of patients affected by diabetes, many more patients with diabetes are being managed by their primary care doctor. The diabetes clinic provides specific care focusing on diabetes and allows residents to learn the most up to date information about caring with those with diabetes.

Methods

Residency clinic patients were referred to the diabetes clinic if their A1c were uncontrolled. Patients were selected by reviewing charts of initial visits and excluded for having type 1 diabetes. Initial data was gathered on A1c, weight, age, number and types of medication, as well as other quality measures. 22 charts were selected. Follow up data was collected 9-12 months after initial visits and data was compared.

Results

Average A1c dropped by 2.48 points and weight dropped about 4 kg per person. The percent of screenings for microalbuminuria, eye exams and foot exams increased. There was no change in the percent of patients on an ACE-Inhibitor/ARB. On average, the number of medications per patient increased from 2 to 2.9. Overall there was an increase in the use of Metformin, SGLT2 inhibitors, and GLP-1 while a decrease in insulin and DPP4 inhibitors.

Discussion

Patients receiving specific diabetes care within a primary care office had improved both clinical and quality outcomes. Improved outcomes may be due to becoming more comfortable with novel diabetes management and drugs. It also may benefit residents as they learn more about diabetes so they can use this knowledge within their primary care clinic.

Targeted Interventions to Improve Perceived Quality of Medical Student Education

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Introduction

Several studies and evaluations of student perceptions have shown that greater involvement and organization of family medicine rotations leads to improved student perception of the field but may also be a driver in choosing said specialty. The family medicine rotation at McLeod Regional Medical Center has certain areas where it could stand to benefit from improved student involvement. This project seeks to identify specific changes which can be made, implement said changes, and then gauge the effect on student perception.

Methods

This project isolates four distinct steps to target improvements to medical student education. 1 - Students who rotated in the 2018-2019 academic year were sent an optional survey to gauge their perceived educational value in a number of areas, as well as to discern areas which may be targeted for improvement. 2 - Attempts were made to implement targeted changes to medical student education for the initial portion of the 2019-2020 academic year. 3 - Students from the 2019-2020 academic year were surveyed as well. 4 - Comparisons were made to extrapolate the impact of changes from step 2.

Results

Comparisons between the 2018-2019 and 2019-2020 survey data do not highlight any profound differences in perceived medical education and perhaps even highlight a slight deterioration in perceived education.

Discussion

There are several potential explanations for the data received. Sample sizes were relatively small and prone to variation. Additionally, the time of year when students rotate might affect expectations. Data from the 2019-2020 academic year skews early in the academic year. As such, students are more likely to have a vested interest in this particular rotation, which may impact their expectations. To obtain better data, this project would best be continued for a number of years.

Colon Cancer Screening Process Improvement Project

Thu Pham, DO and Elizabeth Kiser, DO
Spartanburg Regional Family Medicine Residency Program

Introduction

Worldwide, colon cancer is the second most commonly diagnosed cancer in women and third most common in men. In the United States, it is the second leading cause of cancer deaths. The USPSTF recommends screening for colon cancer using fecal occult blood testing (FOBT), sigmoidoscopy, or colonoscopy in adults beginning at age 50 years and continuing until age 75 years.

Methods

ACO Dashboard on Epic EMR was used to identify patients from 50-75 years old who need colon cancer screening. Screening methods must be reflected by USPSTF guidelines. Dr. Kiser's data was collected over a 4 month period, and Dr. Pham's data was collected over a 2.5 month period based on convenience of residency clinic rotations. Monthly report was obtained, and Health Maintenance tab in Epic was used to document dates and types of screening used. Patients who refused screenings were also documented.

Results

Dr. Kiser's initial data started with 5/16 (31%) patients with adequate screening. Two new patients were gained during data collecting process who were eligible. Final data after 4 months showed 10/18 (56%) with adequate screenings. Dr. Pham's initial data showed 10/19 (53%) patient with adequate screening. Three new patients were gained during data collecting process who were eligible. Final data after 2.5 months showed 10/22 (45%) with adequate screenings.

Discussion

The final data was affected by time limitation and increase in patient panel. Screening effectiveness depends on patient's compliance, specialist schedules and insurance. Future challenges to overcome including poor documentation of prior colonoscopy screenings and older documentation not scanned into Epic. Also, metric data does not distinguish between inadequate and adequate screening (i.e. FOBT annually acceptable in lieu of colonoscopy), and this must be manually overridden.

Quality Improvement a Moving Target

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Introduction

Quality Measures are standardized numeric evaluations of performance intended to allow comparison between health systems or providers. Provider Dashboards provide feedback on individual performance against national standards and allow individuals to self-correct deviations from the standards of care.

Methods

This quality improvement intervention was based on an EHR dashboard that tracked performance on provider response time to patient phone calls. The intervention involved training on the method measurement of the quality measure, use of the EHR and clinic procedures. Performance on the quality measure was measured before and after intervention for the primary investigator.

Results

The average response time for patient telephone calls before the intervention was 8 days. The response time 4 months after the intervention was less than 1 day.

Discussion

The immediate feedback provided by provider dashboards can facilitate improvement in Quality Measures without additional supervision or management. Many provider compensation programs now include components based on performance against quality measures. Dashboards can be an effective tool to assist providers in making appropriate changes to their practice to improve quality of healthcare and individual compensation. Similar methods could be adopted by residency programs to train residents to utilize these systems prior to graduation. Further research into residency wide adoption of this method is warranted.

Implementation of PHQ-2 and PHQ-9 for Major Depression Screening in the Adult Primary Care Setting

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McLeod Family Medicine Residency Program

Introduction

Major depressive disorder is the leading cause of disability seen in adults in high income societies. Prevalence of major depressive disorder in the United States is approximately 7% and causes a significant economic burden of approximately $23 billion annually. Because of this, implementation of a validated screening tool for major depression is beneficial in the adult primary care setting.

Methods

This quality improvement project at the Family Medicine Center (FMC) focused on implementation of the PHQ-2 and PHQ-9 on the electronic medical record (EMR). Adult patients were screened with an electronic version of the PHQ-2 via nursing staff. A positive score of two or higher resulted in the patient being administered a written PHQ-9 to encourage discussion with the patient's provider for further evaluation.

Results

Preintervention data was extracted from January 1, 2019 to June 7, 2019 and a total of 4332 patients were evaluated for a negative PHQ-2 or completion of the PHQ-9 in any of the patient's encounters during this time period. Preintervention screening rate was calculated to be 0.2%. Implementation of the PHQ-2 and PHQ-9 was performed from July 1, 2019 to September 30, 2019 with 2109 individual patients seen during the intervention period. Postintervention screening rate was calculated to be 23.7%.

Discussion

This study was limited secondary to patients not being screened during urgent care visits, which accounts for a significant amount of patient encounters. Also, some PHQ-9s were scanned into the EMR, which will not flag the MIPS dashboard as a completed screening. Because of these limitations, the calculated screening rate is likely lower than the actual screened rate. Regardless, the project is a step forward in implementing a reliable and efficient method to improve major depressive disorder screening at the FMC.

Research Abstracts

Retrospective Review to Ascertain the Incidence of Occult Anemia in Female College Athletes Using Hematocrits

Kristy Atkinson, DO, Michael Sandago, ATC, Emily Staggs, DO,
and Stefan Montgomery, MD

Introduction

The study hypothesized the incidence of anemia differs between sports. By measuring hematocrit in collegiate level athletes, the goal is to provide data that can be used to determine if there is a need to implement routine screening for occult anemia in female athletes.

Methods

Retrospective study of 265 Division I NCAA female athletes hematocrit values that participated in university sports offered between 2011-2018. Anemia was defined as hematocrit value < 36. Athletes and results were de-identified. Participants were grouped by sport, age, high vs. low endurance sports in relation to hematocrit. Incidence of anemia in these categories was conducted using chi-squared statistical analysis.

Results

Chi-squared analysis of the incidence of anemia for individual sports when compared to others indicated basketball had a p-value of 0.0076, showing an association between basketball and increase risk of anemia with 14 of 38 players being anemic. Golf vs other sports resulted in a p-value of 0.9139, showing no association with anemia. The same was true for softball, tennis, track and volleyball with p-value equal to 0.4625, 0.4296, 0.3619 and 0.2687; respectively. The opposite was true for soccer, with a p-value=0.0090 with 3 of 52 athletes having anemia. This implies an association between low incidence of anemia and soccer. There was no association seen between age vs. anemia or endurance vs. anemia with p-values of 0.0514 and 0.5527.

Discussion

The results supported an association between certain sports and anemia. Female basketball athletes had a higher incidence of anemia compared to those who participated in volleyball, track, tennis, softball, golf and soccer. Soccer showed the lowest incidence of anemia when compared to others university sports studied. Screening may be warranted among female college athletes participating in basketball. A larger sample size may show other sports for which routine screening for anemia would be beneficial.

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Implementation of Depression Screening as Part of High School Athlete Pre-Participation Physicals

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Introduction

In 2016, the United States Preventative Task Force reaffirmed a Grade B recommendation for screening all adolescents aged 12 to 18 for major depressive disorder. The Patient Health Questionnaire-Adolescent (PHQ-A) is a validated screening tool for depression in this age group. In South Carolina, over 20% of patients aged 12 to 17 did not have a preventative care visit in the last year. Pre-participation examinations (PPEs) are a frequent point-of-contact with the healthcare system for adolescent student-athletes and may represent a screening opportunity. The purpose of this project was to assess the rate of positive depression screens in Charleston-area high school athletes by having them complete the PHQ-A as part of the PPE.

Methods

This was a prospective cohort study of high school athletes, aged 13 to 18 at a single site. PHQ-A screening was done as part of the standard pre-participation exam. A protocol was created and implemented for the handling of any positive screens with particular emphasis on the handling of any suicidal ideation. A “patient FAQ” was available for athletes, and a list of local resources was available to athletes and providers.

Results

52 athletes were screened. Fifty percent were male. Eleven (21.1%) of the screens were positive. Of those screening positive, 81.8% were in female athletes ($p=0.02$). Single-sport athletes had 23.8% screen positive, while 19.4% of multi-sport athletes screened positive ($p=0.70$). The average age of the screened athlete was 14.8 years.

Discussion

The rate of positive PHQ-A screens in the athletes at this Charleston-area high school (21.1%) was greater than the published national rate of adolescent depression (approximately 5%). Positive screens were more common in female athletes and single-sport athletes. PPEs represent an opportunity to implement adolescent depression screening, although ensuring appropriate follow-up is a barrier to be addressed before implementation on a broader scale.