explain the study and schedule an in person screening. **Results:** In 2008-2009, over 15,000 children ages 4-8 had at least one height and one weight recorded in the EHR at the same visit with BMI > 85th % for age, sex. 11,276 physician letters were mailed: 9,954 opt in letters over 13-months (Cohorts 1-3) and 1,322 opt out letters in 2-months (Cohort 4). Of the 170 families screened, 58/107 (54%) identified opt in letters as recruitment source; 49/63 (78%) families in Cohort 4 reported opt out letters introduced them to the study. Fifty-six families gave written informed consent and/or assent and were randomized to one of two groups – Group Family Behavior Modification (FBM) or Enhanced Information Mailing (EIM) group. Three FBM and two EIM families dropped before treatment started. **Conclusions:** Physician letters to parents of eligible children identified in the EHR were the most successful recruitment strategies for the primary care obesity prevention study. Opt-out physician letters shortened recruitment time and doubled the number of participants recruited for the final cohort.

Keywords: Obesity, Prevention, Childhood

doi:10.3121/cmr.2011.1020.c-b5-05

C-C2-05:

Primary Care Web-Based Lifestyle Intervention for Type 2 Diabetes: Randomized Controlled Trial to Improve Knowledge and Self-Care

Margaret Rukstalis, MD¹; Mary Ann Blosky, MHA, MS, RN¹; Howard Steinberg, MBA²; Mary Anglade, MBA²; Tammy Anderer, PhD, MSN, CRNP¹; Frederick Bloom Jr., MD, MMM¹

¹Geisinger Health System; ²Life Med Media

Background: Rapidly growing numbers of Type 2 Diabetes (T2D) in the US continues to escalate need for evidence-based primary care interventions to reduce complications and costs. Limited time, information, and lack of revenue for chronic disease management create gaps between national guidelines and primary care for diabetes. **Methods:** Of the over 20,000 diabetics were identified in Geisinger EPIC® EHR, 3166 T2D with diagnosis on problem list or ICD-9 code had HgA1c > 8.0%. Physician letters or emails were sent to invite them to call to Opt OUT if they did not want more information. After a 10 day period, staff called 1932 eligible T2D to invite them to a shared medical primary care visit to participate in a randomized controlled trial comparing a tailored 5-month web-based lifestyle intervention (dLifeG.com) to usual care. 166 Type 2 diabetics gave written informed consent and were randomized 1:2 to control group or intervention group. In <20 minutes with simple computer instructions, T2Ds in intervention group created password protected personalized website to set goals, view weekly lessons, and take interactive quizzes to improve diabetes knowledge and self-management. Weekly emails with lesson topics and links to the dLifeG.com were sent to intervention group participants. At end of study, control group will also have access to website intervention. **Results:** At midpoint, ~3/4th of the 100 T2 diabetics in intervention group were engaged [defined by the number of site page viewed (0-3090 pages), emails opened (0-100%), and quiz pages consumed (0-578)]. Mid and end of study changes in diabetes knowledge, HgA1c, Blood Pressure, and weight will be discussed. **Conclusions:** Web-based lifestyle interventions can be employed in primary care to engage a majority of diabetics with HgA1c > 8.0 in a self-management lifestyle modification intervention. Importantly, the study also helped identify diabetics who may need additional resources and assistance with chronic disease management.

Keywords: Diabetes, Intervention, Self-care

doi:10.3121/cmr.2011.1020.c-c2-05

PS2-01:

Factors Influencing Completion in the IDEA Diabetes Education Study

Kenneth Adams, PhD¹; Sarah Beaton, PhD²; Emily Parker, MPH, PhD¹; Jodi Lavin-Tompkins, RN, CNP¹; JoAnn Sperl-Hillen, MD¹; Ann Hanson, BS¹; Herbert Davis, PhD²; Omar Fernandes, MPH¹; Ann Von Worley, RN, BSHS²; Patricia Glasrud, MS, RDABQ¹; William Parsons, MS²; Vic Spain, PhD, DVM³

¹HealthPartners; ²LCF Research; ³Merck and Co, Inc.

Background/Aims: Participant non-adherence to study protocols can adversely affect clinical trials by reducing statistical power. Similarly non-adherence is an important issue in clinical practice. Ceasing to participate is one form of non-adherence. Subject characteristics appear to influence adherence. We evaluated relationships between subject characteristics and completion of educational sessions in IDEA, a clinical trial testing 2 modes of diabetes education in patients with sub-optimal diabetes control. **Methods:** IDEA eligibility criteria included Type 2 diabetes, A1c = 7%, and no recent diabetes education. Subjects (n=623) were randomly allocated to one of 3 diabetes education treatment arms; individual education, group education, or a comparison group with no active intervention. Individual education consisted of three 1-hour sessions, following an AADE program. Group education was delivered in four 2-hour group sessions that emphasized patient interaction. Subjects were considered adherent if they completed all assigned sessions. At the end of the study, tracking data indicated completion rates of 72.0% (175/243) in the group education intervention and 86.1% (211/245) in the individual treatment intervention. We sought to identify demographic, psychosocial and clinical characteristics that might explain non-completion. We hypothesized that, within each arm, baseline health status (SF-12 mental composite and physical composite scores), depression (PHQ9), personality type (TIPI Big 5; extraversion, agreeableness, emotional stability, conscientiousness, and openness), and Hb A1c level were associated with completion. **Results:** In the group education arm, subjects scoring higher on the emotional stability scale were more likely to complete (p<0.05). Generally, demographic factors were more strongly associated with completion of group education than were psychosocial or clinical factors: women and older subjects were more likely to complete than men and younger subjects (gender, p=0.008; age, p=<0.0005). Within the individual education arm, completion was predicted by higher physical health score (SF12-PCS; p=0.005), higher mental health scales (SF12-MCS, p=0.008), lower depression score (PHQ9, p=0.002), and lower Hb A1c (p<0.05). However, neither gender nor age was associated with completion. **Conclusions:** Factors related to study completion appear to differ between the 2 diabetes educational interventions. These results may be relevant to diabetes educational programs considering strategies to improve “no show” and lack of completion rates.

Keywords: Diabetes education, Group education, Adherence

doi:10.3121/cmr.2011.1020.ps2-01

PS2-06:

Regional Variation in Response to Diabetes Education in the IDEA Study

Sarah Beaton, PhD¹; JoAnn Sperl-Hillen, MD²; Omar Fernandes, MPH²; Ann Von Worley, RN, BSHS¹; William Parsons, MS¹; Herbert Davis, PhD¹; Ann Hanson, BS²; Emily Parker, MPH, PhD²; C. Vic Spain, DVM, PhD³

¹LCF Research; ²HealthPartners Research Foundation; ³Merck and Co., Inc.

Background/Aims: ‘Journey for Control of Diabetes: The IDEA Study’ is an ongoing randomized trial evaluating the efficacy of group diabetes education (GE) using US Diabetes Conversation Maps™ and conventional individual diabetes education (IE) among adults with sub-optimally controlled Type 2 diabetes (A1c >= 7%). The study is being conducted at 2 sites, Minneapolis, MN, and Albuquerque, NM. Because the 2 sites are regions with diverse demographic characteristics, the goal of this paper was to identify differences in the main outcome (A1c) between sites. **Methods:** In addition to A1c >= 7, study inclusion criteria were patients who were diagnosed with diabetes, and were diabetes education-naïve within the last one to two years. Consenting patients were randomly assigned to receive either: GE, IE or usual care (UC) as recommended by the primary care provider. All education was provided through each care system’s ADA-recognized education program. Follow-up A1c levels were obtained from electronic laboratory data. Differences in A1c levels were evaluated using Generalized Linear Models (SAS 9.2). **Results:** There were 623 patients enrolled: 337 from MN and 286 from NM. Sample demographics were: mean age of 60.0 (MN) and 64.0 (NM); percent female, 44.8 (151/337) for MN and 54.9 (157/286) for NM; race/ethnicity, 81.1% (276/337) white, 8.1% (27/337) black, 3.6% (12/337) Hispanic, and 7.2% (24/337) other for MN, and NM 45.6% (130/286) white, 2.5% (7/286) black,

43.9% (126/286) Hispanic, and 8.1% (23/286) other. Mean baseline A1c was 8.1% for MN and 8.3% for NM. There was a significant difference in percentages of patients having an A1c in the post-randomization follow-up period (approximately 6 months), 89.0% (300/337) for MN and 67.5% (193/286) for NM. Of those with an A1c test, NM patients had a significantly greater A1c reduction with GE (-0.947 for NM vs. -0.136 for MN), IE (-1.093 for NM vs. -0.497 for MN), and UC (-0.700 for NM vs. -0.253 for MN), ($p < .0001$). **Conclusions:** Although it appears that IE and GE were more effective for NM patients compared to MN, the large number of NM patients without A1c values in the follow-up period makes any conclusions tentative. The long-term data analysis is pending and should provide a more definitive conclusion.

Keywords: Diabetes, Diabetes education, Site differences

doi:10.3121/cmr.2011.1020.ps2-06

PS2-31:

Cystatin C Heralds Early Chronic Kidney Disease Especially in Diabetes (CHECKED): Conducting a Pilot Feasibility Study

Brandi Robinson, MPH¹; E. Darlene Brannon, MSNNP-C¹; Suma Vupputuri, PhD, MPH¹

¹Kaiser Permanente Georgia

Background/Aims: Studies to identify early chronic kidney disease (CKD) among patients with diabetes are important. However, collecting blood samples from patients to measure new biomarkers of kidney function can be invasive, inconvenient, and may not be well-accepted. The purpose of this study was to describe the methods for collecting cystatin C measures, using both capillary and venous blood samples, to measure early CKD. **Methods:** We recruited members who were English-speakers, non-pregnant, aged 25-74 years, enrolled in the Kaiser Permanente Georgia diabetes registry, and reported an eGFR > 60 ml/min/1.73m². Members were recruited using an initial introductory letter with a follow-up phone call. A one-time clinic visit was scheduled for the collection of capillary and venous blood samples, anthropometric measures, and questionnaire data. Patients received a \$25 gift card for participating in the study. Clinic visits lasted 20-30 minutes. At the end of the study, a debriefing session was conducted to discuss feasibility issues and barriers to recruitment. **Results:** A total of 343 patients were contacted with initial mailings (a second repeat mailing to 88 patients was done halfway through the recruitment period). Over 7 weeks, 315 members were contacted by telephone; 56% (177 of 315) could not be reached after 3 follow-up phone calls, 10% (32 of 315) had bad or disconnected numbers, 7% (23 of 315) declined, and 26% (83 of 315) agreed to participate. (Among members we spoke to, the response rate for participation was 78% [83 of 106]). Some patients did not show up for their scheduled appointment, leaving a total of 59 completed visits. Feedback from study staff included having a shorter time window between mailings and calls, appointment reminder cards, and proper labeling of samples going to the laboratory. In general, the protocol was easy to follow and patients were eager to participate. **Conclusion:** Our pilot study indicated that collecting blood samples to measure cystatin C in a clinic setting can be done with minimal inconvenience to the patient. Our study methods were well received by patients and clinic staff. For future studies, the use of appointment reminder postcards may reduce the number of no-shows.

Keywords: Diabetes, Early chronic kidney disease, Cystatin C

doi:10.3121/cmr.2011.1020.ps2-31

PS2-02:

Micronutrient Deficiencies After Bariatric Surgery: Does Ethnicity Matter?

Ameena Ahmed, MD, MPH¹; Yihe Daida, MS¹; Rachel Novotny, PhD, RD²

¹Center for Health Research, Hawaii; ²Department of Human Nutrition, Food and Animal Sciences

Background: Micronutrient deficiency is a well-known complication of bariatric surgery, and daily, lifelong multivitamin and multi-trace mineral

supplementation is recommended after surgery. Risk of vitamin deficiency is known to vary by ethnicity, with several studies reporting higher incidence of deficiency of vitamins A and D and B vitamins among blacks compared to whites. We were unable to locate studies that examined risk of micronutrient deficiency after bariatric surgery among ethnic groups other than whites or blacks. The aim of this study was to determine if incidence of micronutrient deficiency after bariatric surgery differs among Asians and Pacific Islanders, compared to whites. **Methods:** We determined prevalence of micronutrient deficiency among 627 adults (36% white, 30% Pacific Islander, 11% Asian, 22% other/unknown) who underwent Roux-en-Y gastric bypass, gastric banding, or gastric sleeve for morbid obesity between 2002 and 2009 in Kaiser Permanente, Hawaii. Data on serum micronutrient levels, demographics, anthropometrics and comorbidities were collected from the VDW. **Results:** During up to 7 years follow-up after bariatric surgery, 78% (488 of 627) patients developed deficiency of at least one micronutrient, and incidence did not differ by ethnicity. Rates of deficiency of specific micronutrients were 61% vitamin A, 47% thiamine, 12% vitamin B12, 4% folate, 25% calcium, 43% iron. Procedure type (Roux-en-Y gastric bypass) and higher percentage of excess weight lost (%EWL) were associated with deficiency of several micronutrients. After adjustment for age, sex, procedure type, and %EWL, ethnicity was not significantly associated with deficiency of any micronutrient after surgery. **Conclusion:** We found no evidence that the incidence of micronutrient deficiency after bariatric surgery differs between whites, Asians, and Pacific Islanders. The low numbers of blacks and those of other ethnicity in our cohort precludes comparison to prior studies. Despite attempts at universal prescribing of multivitamin and multiminerals supplements, incidence of at least one micronutrient deficiency after bariatric surgery remains high in all ethnic groups. Results suggest the need for increased efforts to ensure patient knowledge of and compliance with lifelong supplementation.

Keywords: Micronutrient, Obesity, Bariatric surgery

doi:10.3121/cmr.2011.1020.ps2-02

Disparities and Vulnerable Populations

C-C3-01:

Implicit and Explicit Ethnic/Racial Attitudes Among Primary Care Providers and Community Members

Irene Blair, PhD^{1,2}; David Price, MD³; Ed Havranek, MD⁴; John Steiner, MD, MPH²; Rebecca Hanratty, MD⁴; Diane Fairclough, DrPh⁵; Tillman Farley, MD⁶; Holen Katz, MA¹

¹University of Colorado Boulder; ²Kaiser Permanente Colorado; ³Kaiser Permanente Colorado Institute for Health Research; ⁴Denver Health; ⁵University of Colorado Health Sciences Center; ⁶Salud Family Health Center

Aims: To investigate the implicit (unconscious) and explicit (conscious) attitudes of primary care providers (PCPs) toward African Americans and Latinos, and compare them to the attitudes of community members. **Methods:** A computer-based survey was completed by 210 PCPs (60% participation) and 190 community members (55% participation) in primary care clinics of three different health care organizations throughout the Denver metro area. Results were analyzed in aggregate. The survey measured attitudes toward African Americans and Latinos, compared with Whites in each case. Implicit attitudes were measured with Implicit Association Tests (IAT) and explicit attitudes were measured by self-reported scale ratings. **Results:** A wide range of implicit attitudes was found among both PCPs and community members, from greater favorability toward Latinos or African Americans to greater favorability toward Whites (Latino:White IAT range = -0.91 (pro-Latino) to 1.28 (pro-White); Black:White IAT range = -1.11 (pro-Black) to 1.32 (pro-White). Consistent with other research, implicit pro-White bias was the more frequent and stronger response (Latino:White IAT M=0.31, Cohen's d=0.78; Black:White IAT M=0.27, Cohen's d=0.76), and the two samples did not differ in their implicit bias ($p > .20$). The only consistent demographic predictor of implicit bias was participants' self-identified ethnicity/race. White participants demonstrated stronger pro-White bias than did minority participants. A comparison adjusting for differences in