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
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PS2-31:

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

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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
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PS2-02:

Micronutrient Deficiencies After Bariatric Surgery: Does Ethnicity Matter?

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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 multimineral 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
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Disparities and Vulnerable Populations

C-C3-01:

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

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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

the ethnic/racial composition of the PCP and community samples showed that once these differences were controlled, PCPs showed less pro-White bias than the community members. Both groups reported little explicit bias (Cohen's d=0.04), with most participants reporting they felt similarly toward the ethnic/racial groups. **Conclusions:** Numerous studies have shown that implicit ethnic/racial attitudes in the U.S. generally favor Whites over other ethnic/racial groups. The current study finds that implicit attitudes among PCPs and community members in the Denver metro area are no exception. Despite these general trends, this study also shows that people are not all the same, with some individuals demonstrating strong pro-Latino or pro-African American bias while others show strong pro-White bias. Phase two of the study will begin to investigate whether such biases are related to patient care and hypertension control.

Keywords: Attitudes, Ethnic/Racial

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PS2-36:

Population-based Evaluation of Patients with Methicillin-resistant *Staphylococcus aureus* (MRSA) Infection in Relation to Animal Feeding Operations in Pennsylvania

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Background/Aims: New MRSA strains and epidemiologic patterns of infection have emerged in the past decade, with community-associated patterns now dominant. In Europe, these new community strains have been linked to animal feeding operations (AFOs), raising concerns about the widespread use of non-therapeutic antibiotics in animal feeds. No prior population-based studies have evaluated the risk of MRSA infection in relation to AFOs in the U.S. **Methods:** We used Geisinger Clinic electronic health record data from 2001 to February 2010 on all primary care patients (n = 440,000). Three groups of patients were identified using specific ICD-9 codes: (1) Community-onset MRSA (CO-MRSA) without risk factors (i.e., infection diagnosed as an outpatient, no antibiotics or hospitalizations in the prior year, no household contacts, no history of MRSA colonization); (2) Hospital-onset MRSA (HO-MRSA) with risk factors (i.e., diagnosed in the hospital with at least one MRSA risk factor); and (3) Skin infection (e.g., cellulitis, carbuncle, skin abscess) without MRSA infection or colonization history and without MRSA risk factors. MRSA cases were frequency-matched to controls with no history of MRSA or risk factors. Information on concentrated animal feeding operations (CAFOs) were obtained from the Pennsylvania Department of Environmental Protection, and included data on animal species (e.g., swine, dairy cattle, chickens), counts, animal equivalent units (AEUs), farm acreage, and manure generated, exported, and stored. Measures of density (e.g., AEUs per sq. mi. in township) and accessibility (e.g., distance from residence to nearest CAFO, gravity models) were derived and used in logistic regression models comparing the four groups. **Results:** A total of 1926 MRSA cases were identified from 2003 to 2010. Of these, 1058 (55%) were identified in outpatient records, 530 (28%) from inpatient records, and 290 (15%) from medication orders. Inpatient cases increased from 2 in 2003 to 88 in 2005, remained at the same frequency through 2008, and then increased to 116 in 2009. In contrast, outpatient cases increased steadily from 4 in 2003 to a peak of 325 in 2008. **Conclusions:** The data clearly show a steady increase in the incidence of CO-MRSA in this region. Relations with AFOs will be presented and discussed.

Keywords: Methicillin-resistant *Staphylococcus aureus* (MRSA), Community-onset, Animal feeding operations

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C-C3-02:

Developing a Culturally Appropriate Weight-Loss Intervention Program for Spanish-Speaking Mexican-American Women

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Background: In the USA, 77% of Hispanic women age 20 and older are classified as overweight or obese. There is evidence that Hispanics tend to be less successful than non-Hispanic whites in standard weight-loss interventions. This study assessed the feasibility of a culturally-tailored behavioral weight-loss intervention specifically designed for Spanish-speaking women of Mexican origin. **Methods:** This 6-month intervention consisting of weekly sessions was based on approaches previously used successfully with English-speaking participants in the PREMIER and Weight Loss Maintenance trials. Cultural adaptations were implemented throughout the program based on information derived from focus groups, available literature, and a multidisciplinary team that included Mexican experts in behavioral interventions and nutritional anthropology. The intervention was conducted entirely in Spanish. Beyond language, specific cultural adaptations included: 1) "Grupos de mujeres" ("women-only" groups) of a wide range of age—covering topics central to the immigration experience (e.g., the loss of social networks, differing body-shape ideals in Mexican and American cultures, and the pressure of maintaining Mexican traditions while adopting "American ways"). 2) Focusing on staple foods in the Mexican diet: returning to a traditional diet, how to make healthy choices. 3) Providing basic instruction on nutrition, and hands-on training on standard food measurement for portion control. 4) Addressing Mexican folk remedies and traditional beliefs regarding food and diet (e.g. "hot" and "cold" foods, "empacho," etc.). 5) Developing food-intake journals for people of limited literacy. **Results:** The recruitment strategies used resulted in a significantly larger-than-expected response. There were 47 participants in the study. Thirty-one participants completed the intervention and had main outcome data available. Participants did not complete the intervention because they became pregnant (2), had unexpected changes in school schedules (2), relocated to Mexico due to immigration problems (3), needed to follow agricultural work (6), unknown reasons (3). After 6 months, average weight decreased by 7.26 kg (16 lb), p< .0001. **Conclusions:** Mexican-American women have previously been underrepresented in weight-loss interventions; however, this study suggests that culturally-congruent recruitment methods can successfully attract this population to lifestyle intervention programs, and that carefully-tailored culturally adapted weight-loss interventions are feasible and potentially effective among Spanish-speaking Mexican-American women.

Keywords: Hispanic, Weight loss

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C-C3-03:

Using Area-Based Measures in the Absence of Individual-Level Measures to Target Enrollment into a Study

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Background: Targeting enrollment into studies on participant characteristics is increasingly possible within HMOs given improved computerized collection of individual characteristics. Some gaps remain – particularly with respect to socioeconomic status (SES). In the absence of individual-level SES data, selecting participants on area-based SES measures may be more efficient than selecting participants on simple random samples. We describe the use of an area-based measure of formal education for targeting enrollment of adults into an intervention to design and evaluate oral and print health literacy. **Methods:** Kaiser Permanente Georgia is one of 3 sites participating in a CRN study on health literacy. We enrolled 40-70 year olds with low, middle, and high levels of health literacy by selecting random samples within census tracts stratified according to percents of adults with a high school (HS) education or less obtained from US Census Summary File 3 records. Census tracts were stratified into tertiles of high percents (i.e. low education tertile), moderate percents, and low percents (i.e. high education tertile). **Results:** Sampling achieved approximately equal representation of each tertile: 34% (84 of 250) from the low education tertile, 31% (77 of 250) from the middle tertile, and 36% (89 of 250) from the high education tertile. Self-reported education varied significantly (p<0.01) with the area-based measure