provider in the previous 12 months, having had a lapse of insurance in the previous 3 years, and having had a mammogram in the previous 12 months. Associations were examined with Spearman correlation analyses. A logistic regression analysis was performed to identify variables associated with having had a mammogram in the previous 12 months. **Results:** Over ninety percent of respondents (91.2%; 563 of 617) self-reported having had a mammogram in their lifetime and 62.4% (385 of 617) reported having had a mammogram in the previous 12 months. Of the females who had a mammogram in the previous 12 months, 14.0% (24 of 171) reported having not visited a medical provider in the previous 12 months. Having received a mammogram in the previous year was significantly correlated with having more education ($p=0.083$, $P<0.05$) and not having a lapse in health insurance coverage over the previous 3 years ($p=0.155$, $P<0.01$). Having received a mammogram in the previous 12 months was significantly associated with having visited a medical provider in the previous 12 months ($OR=28.352$, $P<0.001$). **Conclusion:** Most women have had at least one mammogram, which suggests the successful dissemination of preventive cancer screening guidelines and minimal evidence of health disparities. Routine check-ups are the major driver for meeting prior mammogram recommendations, which emphasizes the importance of access to regular care when implementing the new screening guidelines.

Keywords: Breast cancer, Mammograms, Preventive cancer screening
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C-C3-04:

Neighborhood Socioeconomic Conditions and Use of Preventive Health Care Services in Insured Populations

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Background and Aims: Several studies have found variations in cancer health outcomes among persons in different socioeconomic (SES) groups, but the presence and extent of such disparities in insured populations is unclear. The objective of this study was to determine whether, among persons enrolled in HMOs, there are differences in the use of services for early detection of cancer according to neighborhood SES. **Methods:** This was a retrospective cohort study of men and women aged 50+ years, enrolled for at least 1 calendar year beginning in 2000 at one of 3 health plans participating in the Cancer Research Network. Follow-up was to the date of disenrollment from the health plan, or December 31, 2007, whichever was earlier. Using administrative data, we obtained dates of examinations and tests related to screening for colorectal cancer (CRC) for men and women and mammography among women. CRC tests were defined as time to the first colonoscopy or sigmoidoscopy (endoscopy) during the follow-up period; and also time to an endoscopy that was not preceded by gastrointestinal conditions in the 6 months prior to the test. SES neighborhood measure was computed using 12 US Census (2000) measures of racial and SES composition and context at the tract level. **Results:** A total of 123,222 members, 54% women and average age 64 years, were followed for an average of 5.5 (SD=2.8) years. During 673,938 person-years of follow-up, about 41% had at least 1 endoscopy and 32% had an endoscopy not associated with prior GI-related diagnoses. Among women, 77% had at least 1 mammogram during the study period; 7% had mammograms during each of the first 5 years of follow-up. In Cox regression models, compared to lowest quartile of SES, persons residing in the highest quartile had a hazard ratio (HR) of 0.76: (95% confidence interval (CI): 0.75-0.78) for receipt of any endoscopy; 0.72: (CI: 0.70-0.74) for 'screening' endoscopy; and 0.86: (CI: 0.84-0.88) for mammography. **Conclusion:** Even among patients receiving care in HMOs, those in socioeconomically deprived neighborhoods are less likely to undergo cancer early detection services. Interventions targeting enrollees residing in lower SES neighborhoods may help reduce cancer health disparities.

Keywords: Cancer health outcomes, Socioeconomic status, Health disparities

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PS3-07:

A Microsimulation Model of the Natural History of Smoking in the US

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Background: Smoking and other forms of tobacco use is the largest preventable cause of morbidity and mortality in the US. An understanding of the natural history of this behavior can help in improving smoking cessation efforts. **Aim:** To develop a microsimulation model to depict the natural history of smoking in the US using data from the National Health Interview Survey (NHIS) and a structured literature review. **Methods:** Data from NHIS and the literature were used to model smoking prevalence by year of age over the lifetime of a birth cohort of US teenagers. The model accounted for age at initiation, quit attempts by age, success of quit attempts, and relapse. Smoking states in the model were "never smoker," "current smoker," "recent quitter," and "former smoker." Demographic variables such as age, gender and race/ethnicity were also analyzed to understand variations in smoking behavior by individual characteristics. Utilization of clinical interventions to promote cessation was built-in to the model in order to create two scenarios for use in evaluating the benefit of interventions to reduce smoking. In these two scenarios, lifetime smoking patterns in the absence and presence of clinical intervention were estimated. Use of these scenarios facilitated the comparison of smoking patterns with and without clinical intervention. The second scenario was also used to validate the model against observed prevalence rates and will facilitate future analyses of smoking patterns with selected community interventions incremental to current use of clinical interventions. **Results:** Model estimate of overall smoking prevalence of approximately 20% (for ages 18-65 years) was comparable to the available national estimates for the US. The model also successfully reproduced the smoking prevalence by age, gender and race/ethnicity, thus allowing for future analyses of various interventions at the clinic and at the community level. The model predicts a reduction of smoking prevalence by 4% at age 65, due to clinical interventions. **Conclusions:** Microsimulation modeling provides a useful framework for understanding smoking prevalence by individual variables such as age, gender and race/ethnicity. The current model will be expanded to include the impact of community interventions targeted at smoking reduction/cessation.

Keywords: Variables in smoking prevalence, Microsimulation modeling, Smoking cessation

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PS3-10:

Barriers to Screening Colonoscopy Differ Among Health Plan Member Groups

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Background/Aim: Colorectal cancer screening for average risk patients is recommended beginning at age 50, with screening colonoscopy every 10 years considered by many to be the gold standard for screening (USPSTF, 2008). The purpose of this study is to explore the differences in barriers to colonoscopy between men and women. **Methods:** A stratified random sample of Scott & White Health Plan members was drawn—1000 50-year-old men, 1000 50-year-old women, 1000 men aged 51-80, and 1000 women aged 51-80. Sampled members received surveys by mail requesting information about colonoscopy in the past 10 years, readiness to have colonoscopy in the next six months, demographic information, time since last primary care visit and barriers to colonoscopy for those who had not had the procedure in the past 10 years. We compared barriers to colonoscopy between males versus females by the chi-square test or Fisher's exact test. **Results:** Response rate was 31% (1234 of 4000). Over 35% of the sample (438/1234) reported not having a colonoscopy in the past 10 years. The most commonly reported barriers were "My regular doctor has not told me I need a

colonoscopy “(42%) followed by “I do not think I need the test” (21%). Males were more likely than females to report that they did not think they needed the test ($p = 0.042$) and that they could not take the time off of work ($p = 0.025$), and that they had a bad experience with colonoscopy ($p = 0.027$). **Conclusions:** Survey responses point to the important roles healthcare providers and approaches tailored to the barriers to specific groups can plan in intervention strategies.

Keywords: Colorectal cancer screening, Colonoscopy barriers, Intervention strategies

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PS3-12:

Obesity and Risk of Proliferative Hyperplastic Lesions

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Background and Aims: Obesity is a risk factor for breast cancer for postmenopausal women. Aromatization of androstenedione to estradiol in the peripheral adipose tissue and low levels of sex-hormone binding globulin as well as increased serum levels of insulin-like growth factors have been proposed as the underlying biological mechanisms. Women diagnosed with hyperplastic lesions with/without atypia have increased risk for a subsequent breast cancer. We conducted a retrospective study with the primary objective of assessing the association between body weight and the diagnosis of hyperplastic lesions. Our specific aims were: 1) to compare the prevalence of biopsies prior to the diagnosis of breast cancer and 2) to estimate the risk of hyperplastic lesions after adjusting for Body Mass Index (BMI), and other potential confounders. **Methods:** This case-series study benefits from an existing cohort of women ($N = 882$), ages 40 years and older, diagnosed with and treated for their first primary invasive breast cancer at the Geisinger Health System between 2001 and 2007. Data were obtained from Geisinger's electronic health record; the diagnosis atypical ductal hyperplasia (ADH) was the outcome of interest. Women were categorized according to their BMIs as normal, overweight or obese. All statistical tests were two-sided and analyses were performed using SAS version 9.3 (SAS Institute, Inc. Cary, NC). **Results:** The prevalence of biopsy prior to the diagnosis of breast cancer was not statistically different among the three groups of women. The risk of hyperplastic lesions was elevated for overweight ($OR = 13.58$; 95% $CI = 1.03-178.84$; $P = 0.047$) and obese ($OR = 14.76$; 95% $CI = 1.09-200.09$; $P = 0.043$) women relative to women in their ideal body weight. The association between BMI and other risk factors for breast cancer did not reach the level of statistical significance. **Conclusions:** Preliminary results suggest that excess body weight increases the risk of hyperplastic lesions in postmenopausal women. Biologically, this observed risk may be the result of higher serum levels of unbound estradiol in overweight and obese women. Future larger studies should validate our findings.

Keywords: Breast cancer, Obesity, Hyperplastic lesions

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PS3-13:

Patient Barriers to Mammography Identified During a Mammogram Reminder System

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Background/Aims: Patient mammogram reminders are effective at raising screening rates, but patient screening barriers remain. We evaluated patient characteristics available in electronic medical records that might be associated with mammogram completion after a reminder program, and identified patient-reported barriers that could help to explain response differences. **Design:** Retrospective cohort study using electronic medical record data and a sub-group patient survey. Setting/Participants: Participants were female Kaiser Permanente Northwest HMO members aged 50-69 who were 20

months past their last mammogram (index date) and who were the target of a reminder intervention (Total $N = 4,708$). A mailed survey was completed by 336 of 665 (50.5%) members of the sub-group that received the survey. **Intervention:** “Mammogram due soon” post card 20 months after last mammogram, followed by a sequence of up to 2 automated phone calls and 1 live call for non-responders. Main outcome measure: Mammogram completion at 10 months following index date. **Results:** The characteristics associated with lower mammogram completion rates were age < 60 ($OR = 0.69$; $p < 0.0001$); health plan membership < 5 years ($OR = 0.81$; $p = 0.019$); family income $< \$40,000$ per year ($OR = 0.77$; $p = 0.018$); and obesity ($OR = 0.67$; $p < 0.0001$). Nearly 47% of the cohort was obese. Among survey respondents, being “too busy” ($OR = 0.54$; $p = 0.048$), feeling “embarrassed” ($OR = 0.09$; $p = .001$) and “too much pain” ($OR = 0.41$; $p < .001$) were associated with lower likelihood of mammogram completion. Obese women were more likely to report “too much pain” from mammograms compared to non-obese women (31.3% of 160 vs. 18.8% of 176; $p < 0.01$). Younger women were more likely to endorse that they believed in preventive screening (84.4% vs. 71.6%; $p < 0.05$), but also that they were “too busy” (19.1% vs. 6.4%; $p < 0.001$) and had more worries about mammogram accuracy (2.5 vs. 2.3 on 5 point scale; $p < 0.05$) than older women. Pain mediated the relationship between obesity and mammogram completion rates (indirect effect = -0.111 , 95% $CI = -0.229$ to -0.025 , $p = .008$). **Conclusions:** Important barriers to mammogram completion remain even with effective reminder systems. Obesity is an especially prominent barrier due to patients concerns about pain associated with mammography. Interventions to address/reduce pain may help lower this barrier.

Keywords: Mammogram screenings, Mammogram reminder system, Patient screening barriers

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PS3-14:

Primary Care Providers Reported Use of Pre-Screening Discussions for Prostate Cancer Screening: A Cross-Sectional Survey

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Background and Aims: There is no scientific consensus for routine prostate cancer screening for men of average risk less than 75 years of age using the prostate-specific antigen test (PSA). However, suggested practice is for physicians to discuss the known harms and potential benefits of PSA testing and digital rectal exam (DRE) with their patients. We conducted a survey of primary care providers (PCPs) to determine their practice styles including discussion regarding prostate cancer screening; we also conducted a patient survey to learn whether their PCPs discussed PSA testing and DRE during a health maintenance exam (HME). **Methods:** PCPs in the Lovelace Health System were surveyed about their prostate cancer screening practices for average risk men. Based on their responses, they were divided into two groups: 1) routine screeners (RS), those who routinely order PSA testing without discussing potential harms and benefits and 2) informed decision makers (IDM), those who routinely discuss the PSA test and its benefits and harms. After the HME, patients were surveyed as to whether or not their PCP discussed the PSA test and its harms and benefits during their visit. **Results:** Among the physicians, 35.9% (23/64) were RS and 64.1% (41/64) were IDM. Of the RS patients, 82.3% (51/62) responded that their physician did discuss the PSA test compared to 71.2% (37/52) of the IDM patients ($p = 0.10$). For RS, 58.8% (36/62) of the patients stated their provider initiated the discussion, whereas 56.8% (30/52) of the IDM initiated it. Provider recommendations to have the test were higher for the RS (80.3%) (41/51) compared to 53.1% (20/37) of the IDM ($p = .0032$). **Conclusions:** By patient report, a higher percentage of RS providers discussed the PSA test with patients. As would be expected, most of the RS recommended the PSA compared to only one-third of the IDM providers. Further studies are needed to determine what other factors of physician practice styles relate to discussing or not discussing prostate cancer screening with patients, and how