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Cancer

A1-1:

Linking Electronic Health Records across Institutions to Understand Why Women Seek Care at Multiple Sites for Breast Cancer

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Background/Aims: Research in a fragmented healthcare system can be challenging when one seeks to follow patients within a care episode. Breast cancer treatment can continue for months or years and a care trajectory may reflect many decisions. Women may seek evaluations or specialty care at more than one medical center, either through physician referrals or “shopping” behavior. Claims data can track where patients are seen, but lack clinical detail. This study aims to better understand treatment location decisions among women seen at more than one healthcare facility. **Methods:** The OncoShare database combines EHR data from two large healthcare facilities in the same catchment area—a multisite community practice and an academic medical center—for all women treated at either site for breast cancer from 2000-2011. We use descriptive statistics and longitudinal modeling strategies to characterize treatment trajectories and define predictors of treatment facility decisions. **Results:** In a previous cross-sectional analysis of these data, the 16% of women who received treatment at both institutions had comparable prognostic factors, but far more diagnostic and treatment interventions than those treated at only one facility. We use a longitudinal analysis to characterize the care trajectories of these women, and test predictors of their treatment decisions such as geographic location, previous diagnostic tests performed, and timing of interventions. **Conclusions:** Preliminary results from this data revealed a marked difference in treatment intensity among women who sought care at both institutions, despite comparable prognoses. The richness of the EHR now allows the extraction of predictors such as patterns of medical care use before the breast cancer diagnosis.

Keywords: Breast cancer; Data linkage

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A1-3:

Small-scale Implementation Study of the Cancer Survival Query System

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Background/Aims: The Cancer Survival Query System (CSQS) is a second generation prototype cancer prognostic tool developed by the National Cancer Institute (NCI). It was designed for physicians to use so they could better understand and communicate with prostate and colorectal cancer patients valid estimates of their cancer survival within the context of all causes of death. The aim of this study was to assess the market readiness and enhance the likelihood of large-scale adoption of CSQS. **Methods:** We conducted a small-scale implementation study of the CSQS prognostic tool in two, purposively selected, diverse healthcare delivery systems (Kaiser Permanente Colorado and Penrose Cancer Center) in the specialty care

context (oncology, urology, surgery) using a mixed method design. Additionally, two private urology practices affiliated with Penrose were incorporated into the study. Implementation strategies included identifying site champions, champions working with study staff to conduct a roll-out meeting for their department, and champions sending CSQS reminder emails drafted by study staff. Data collection consisted of automated usage tracking, follow-up champion interviews, and field notes from roll-out meetings and champion interviews. **Results:** 96 providers attended the roll-out meetings with study staff across the seven departments. 110 providers were reached through the follow-up email sent by champions. 158 providers had login information created for access to CSQS, with 16 individual providers entering 52 different case scenarios (n=26 prostate, n=16 colorectal). KP Urology and Penrose GI departments utilized CSQS the most. Seven of the nine site champions completed the key informant interview. Ten themes were identified from qualitative analysis, including champion recommendation of CSQS to colleagues, providers using CSQS without patients in the room, and discussion of CSQS results by nurses was out of their scope of work. **Conclusions:** Usage was consistent between the data pulls over five months. All champions agreed a patient-facing version would benefit patient-provider communication. Next steps include usability testing of CSQS with prostate and colorectal cancer survivors. Data collected from the one-on-one testing will be used to inform NCI on a patient-facing version of CSQS.

Keywords: Prognosis; Web-based

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C1-1:

Evaluation of Screening Colonoscopy per Patient Adenoma Count at a Large New York City Center Using Population-based Data

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Background/Aims: Bowel preparation quality is critical to adequate visualization of adenomas during colonoscopy. We determined the total per person adenoma count (PPAC) in a population undergoing screening colonoscopy during a six month period to assess the utility of this measure as an indicator of bowel preparation quality. **Methods:** Records of outpatients 50-74 years who had undergone screening colonoscopy between September 1, 2012, and February 28, 2013 were extracted. Excluded were diagnostic and surveillance colonoscopies, pre-surgical assessment for organ transplant, and persons with inflammatory bowel disease, and personal or family history of hereditary non-polypoid colorectal cancer, colorectal cancer or polyps. Colonoscopy and pathology reports were manually reviewed to abstract age, gender, examination date, time of procedure, bowel preparation quality, procedural difficulty and tolerability, and number, type, and size of adenomas. Comparisons between those in whom adenomas were and were not detected were performed and associations between study covariates and adenomas detected were examined using multivariable regression. PPAC and adenoma detection rate (ADR) by level of preparation quality were calculated. **Results:** Of 1584 colonoscopies identified, 815 (51.4%) were screening colonoscopies and, of these, =1 adenomas were detected in 203 (24.9%). Most patients were <60 years of age (52.5%) and female (57.4%). Bowel preparation quality was “excellent” or “good” for 81.7% of procedures.

Adenomas were more often detected among those >60 years (aOR 1.69, 95%CI 1.21-2.36) and males (aOR 1.61, 95%CI 1.15-2.26). The mean PPAC overall was 0.34 (SD 0.68) and was associated with age >60 years ($P<0.001$) and male gender ($P<0.001$). When analysis was restricted to only those with =1 adenomas, a negative linear trend of PPAC was observed with PPAC highest among excellent quality preparations (1.48 [SD 1.05]), and lowest for poor preparation quality (1.00 [SD 0.00], $P = 0.55$). The overall ADR was 25.0% and by bowel preparation quality was 21.7% for excellent preparation, 26.6% for good, 25.5% for fair, and 13.1% for poor. **Conclusions:** Our findings suggest that PPAC is sensitive to changes in bowel preparation quality but is particularly sensitive when restricted to only those in whom adenomas were seen. Further exploration of PPAC as a bowel preparation quality indicator is warranted.

Keywords: Colonoscopy quality; Adenoma detection
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C1-3:

Longitudinal Predictors of Initial and Repeat Colorectal Cancer Screening

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Background/Aims: Few studies have used longitudinal data to examine predictors of colorectal cancer screening (CRCS). Further, there has been little research on repeat, on-schedule CRCS. **Methods:** We conducted a secondary analysis of data from the Systems of Support to Increase Colorectal Cancer Screening Trial (SOS), a randomized trial to increase CRCS in adults not current with screening recommendations. The sample consisted of 1,247 participants that completed a supplemental survey at baseline. Potential predictors included sociodemographics, medical/health history, intervention group assignment, and previously validated scales of CRCS pros, cons, self-efficacy, social influence, and cancer worry. Univariable and multivariable analyses were used to identify predictors of: 1) CRCS completion during the first year of the study, and 2) repeat, on-schedule CRCS during the second year of the study among those that completed an FOBT in Year 1. We also tested for moderation effects of the intervention on baseline predictors of screening completion. **Results:** In multivariable analysis, prior CRCS at baseline (OR 2.67, 95% CI 2.01-3.55) and intervention group assignment (Automated: OR 2.06 95% CI 1.44-2.96; Assisted: OR 3.97, 95% CI 2.65-5.92; Navigated: OR 5.65, 95% CI 3.76-8.49) were statistically significant predictors of CRCS completion at Year 1. Family history of colorectal cancer, higher self-efficacy, and higher health rating trended towards significance. For repeat CRCS at Year 2, prior CRCS at baseline (OR 1.97, 95% CI 1.26-3.07), intervention group (Automated: OR 9.97, 95% CI 4.97-19.98; Assisted: OR 12.34, 95% CI 6.07-25.09; Navigated: OR 14.44, 95% CI 1.06-29.52) and self-efficacy (OR 1.35, 95% CI 1.03-1.77) were statistically significant predictors. The intervention moderated the effect of prior CRCS and smoking status on CRCS completion at Year 1: 79.5% with prior CRCS were screened vs. 55.2% with no prior CRCS and 70.2% of non-smokers were screened vs. 53.9% of current smokers. **Conclusions:** Prior screening experience was a significant determinant of CRCS in both years 1 and 2, and the intervention amplified the effect of prior screening in Year 1. The intervention also was an important determinant of screening in both years suggesting that removing major access barriers increased screening completion.

Keywords: Colorectal cancer screening; Intervention trial
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PS1-44:

Time to Surgery for Melanoma

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Background/Aims: Cutaneous melanoma is among the most rapidly increasing malignancies in the United States, afflicting approximately 77,000 persons and causing over 9,000 deaths annually. Over half of incident

melanoma and melanoma-related deaths occurs in patients older than age 65. Barriers to accessing dermatologic care may impede timely surgical therapy for patients with melanoma, potentially resulting in psychological or physical harm. Accordingly, given the disproportionate burden of melanoma borne by the elderly and limited availability of dermatologic care, we sought to determine timeliness of surgical resection of melanoma and identify factors associated with time to surgery in the Medicare population. **Methods:** We conducted a population-based, retrospective cohort study of melanoma cases from years 2000 to 2009 using linked data from the Surveillance, Epidemiology, and End Results (SEER)-Medicare database. We identified cases of melanoma using ICD-O-3 and ICD-9 codes. Our primary outcome of interest was time to surgery (dichotomized at 21 days), ascertained by dates of ICD-9 and CPT skin biopsy and surgical procedure codes from Medicare administrative claims. Multivariate logistic regression with clustering of cases by patient and fixed effects for hospital referral region was used to evaluate the impact of type of surgery (Mohs versus non-Mohs technique), patient-level factors (age, gender, race, comorbidities, marital status, income, and prior history of melanoma), and tumor-level factors (stage and anatomic location). **Results:** We identified 32,666 cases of melanoma (1.04 cases per patient) during our study period. The median time to surgery was 27 days (IQR 16-42). Significant predictors of surgical delay ($P<0.05$) included: Mohs surgery (OR 1.10), Elixhauser comorbidity index of 3 or greater (OR 1.16), unmarried status (OR 1.17), regional disease (OR 1.44), and anatomic localization to trunk (OR 0.67) and extremities (OR 0.74). Age, gender, race, income, and history of prior melanoma were not associated with time to surgery. **Conclusions:** Time to surgery exhibits substantial variation among the Medicare population, with longer delays associated with select patient-, provider-, and tumor-level risk factors. Future research is needed to better understand the role these factors may play as possible barriers to dermatologic surgical care and their potential impact on patient morbidity and mortality.

Keywords: Melanoma; Surgical delay
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PS2-28:

Members' Suggestions for Improving FIT Kits

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Background/Aims: Our aim was to get member feedback about KPNC's FIT kit and changes they think would improve the kit. **Methods:** Self-administered survey of 3 groups of White, Black, and Latino KPNC members aged 52-75 who were mailed FIT kits in 2010, 2011, and 2012: "Compliers" (CMs) - did FIT all 3 years; "Converts" (CVs) - did FIT in 2012 but not 2010-2011; "Non-Compliers" (NCs) - no FITs 2010-12. **Results:** Preliminary based on responses from 596 CMs, 300 CVs, and 114 NCs. All comparisons reported are statistically significant. Nearly 90% suggested at least one change to the kit. About 53% suggested including a disposable glove (40% currently use their own to get their sample) and about 40% an antibacterial wipe. About half suggested an extra sheet of paper (1/3 have some trouble catching sample on the sheet), 45% a tube with a wider opening, and 22% a longer scooping stick. Blacks and Latinos were more likely than Whites to request the glove (60% vs. 41%), the wipe (46% vs. 26%), a wider tube (49% vs. 37%), and a longer stick (25% vs. 15%), and CVs were more likely than CMs to request a glove and longer stick. NCs recommended these additions also, but mostly wanted a frank discussion with their PCP. Only about 9% were interested in a video showing how to use the FIT kit (10% of Blacks and Latinos vs. 5% of Whites). For reminders, over 80% wanted to get mailed letters, with robo-calls and secure messages preferred by 19% and text messages by about 10%. Seniors were less interested than non-seniors in getting secure messages and texts. **Conclusions:** Adding items to the FIT kit to address concerns about mess/ bacterial exposure and need for precision might encourage adults to start or continue using this CRC screening tool.

Keywords: Colorectal cancer screening; Race-ethnic differences
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