Abstract Session C2: Joint AACH Session

Educating underserved patients about colorectal cancer screening: multimedia vs print Gregory Makoul 1; Denise Scholtens 2; Ashley Negrini 1; Kenzie A Cameron 2; Jason Thompson 2; Adam Williams 2; David Baker 2. 1Saint Francis Hospital and Medical Center, Hartford, Connecticut; 2Northwestern University Feinberg School of Medicine, Chicago, Illinois. (Proposal ID # 8326)

BACKGROUND: Colorectal cancer (CRC) is one of the most common types of cancer in the United States. Despite strong evidence and recommendations supporting CRC screening, screening rates remain low. This study focuses on comparing message-equivalent patient education programs (multimedia vs print) designed to provide patients with understandable information and motivational messages about CRC screening. Primary questions: Do messages have a different impact on knowledge and/or screening behavior when delivered by multimedia or print? Does literacy level affect response? Based on our review of the literature, we believe this study is the first to explicitly compare the effects of message-equivalent print and multimedia materials.

METHODS: In this randomized controlled trial, patients 50-80 years of age at the time of their clinic visit are assigned to one of three study arms: (1) Control/usual care; (2) Multimedia; (3) Print. The multimedia program incorporates illustrations, animations, photographs, and voice-over. Using the multimedia program as our starting point, we reverse-engineered a print version to yield materials with the same text and graphics. Lexile analysis indicates that the text is geared to a 4th grade reading level; there are English and Spanish versions of both interventions. Study sites are 3 Midwest clinics for the poor and underserved. After engaging in an IRB-approved consent process with a bilingual RA, patients engage in a structured interview, view the randomly assigned intervention, and complete a literacy assessment (S-TOFHLA). Immediately after their doctor visit, patients have a brief follow-up encounter with the RA and receive a $10 gift card. Completion of CRC screening within 3 months of the index visit is determined using the clinic registry. If there is no record of screening completion, RAs attempt to ascertain reasons by calling patients approximately 100 days after the index visit.

RESULTS: This report includes data collected for 690 patients. Mean age was 57.7 (sd=6.4), 68% of the patients were female, 58% self-identified as Hispanic/Latino, and 53% of the surveys were conducted in Spanish. Nearly half (46%) of the patients had 8th grade education or less; 35% had inadequate health literacy. Print and multimedia interventions both led to marked increases in knowledge regarding polyp, colon, stool cards and colonoscopy. While there was very little difference in evaluation of the interventions by the adequate literacy group, subjects in the inadequate literacy group found the multimedia program more informative, believable, interesting, and understandable (p<.05 for each). In terms of actual screening, completion rates are low across all three arms of the study. Telephone follow-up with 241 of the patients who did not get screened provides insight: the doctor did not recommend it was the overwhelming reason for not getting screened, mentioned by 61% of the patients.

CONCLUSION: The print and multimedia interventions in this study optimize message design and include parallel content to allow direct comparison. Data collected to date indicate that, despite the demonstrated quality of both interventions across literacy levels, physician recommendation is the most powerful vector for patient uptake of CRC screening. While physicians at the study sites are periodically reminded to talk with patients about CRC screening, more robust physician-directed interventions are required to achieve the ultimate goal of markedly increasing CRC screening.
Improving Patient Understanding of the Discharge Plan by Implementing a New Patient-Centered Discharge Process on an Academic Service Jimmy Daniel Fernandez 1; Jennifer Caceres, MD 2. 1University of Miami, Coral Gables, Florida ; 2University of Miami at JFK, Atlantis, Florida . (Proposal ID # 8431)

BACKGROUND: According to a study funded by the Agency for Healthcare Research and Quality, patients are 30% less likely to be readmitted or visit the emergency department if they have a clear understanding of their discharge instructions. Despite the importance of the discharge process, very few medical residency training programs offer formal discharge planning education. We hypothesize that introducing a new discharge order form that is completed by a medical resident and reviewed with each patient as part of the discharge process will improve patients' understanding of the discharge plan.

METHODS: All patients who were discharged over a 4-week period from the academic service at John F. Kennedy Medical Center were called within one week of discharge and asked if they knew their diagnosis at discharge, were clear on medications to administer, knew the side effects of any new medications, who to call with any concerns, and if a follow up appointment was made with a primary care physician prior to discharge. A new patient-centered discharge order form as part of the discharge process was introduced after the survey was completed. Medical residents were trained how to use the discharge order form during orientation to the inpatient rotation. The discharge form required a medical resident to complete and discuss each component with the patient and obtain a signature from the patient acknowledging the discussion before the order could be executed by the nursing staff. Four months after the new discharge process was implemented, the same survey was conducted over a 4-week period. Proportions before and after the intervention were compared using chi-square tests for independence.

RESULTS: Eighty-six patients were surveyed before and after the intervention (total n=172). 52.3% versus 68.6% knew their diagnosis pre-intervention and post-intervention respectively (p= 0.0290). For the proportion of patients who knew what medications to take, 77.9% versus 74.4% answered “yes” pre-intervention and post-intervention respectively (p= 0.5914). For the proportion of patients who knew side effects of medications, 17.4% answered favorably before the intervention compared with 46.5% after the intervention (p= 0.0001). For the proportion of patients who knew who to call after discharge, there was an increase from 20.9% to 45.4% after implementation of the new discharge form (p=0.0007). For the proportion of patients who had primary care physician appointments scheduled prior to discharge, there was an improvement from 41.9% to 57.0% (p=0.0474).

CONCLUSION: Implementation of a new discharge order form as part of the discharge process allows medical residents to improve patients' understanding of the discharge plan. There were statistically significant improvements in the following areas: knowledge of their diagnosis, side effects of medications, who to call after discharge, and appointments scheduled with a primary care physician prior to discharge.
Effects of a patient activation intervention to overcome clinical inertia to control blood pressure.
Christopher N Sciamanna\textsuperscript{1}; Jeffrey Thiboutot\textsuperscript{1}. \textsuperscript{1}Penn State Milton S. Hershey Medical Center, Hershey, Pennsylvania . (Proposal ID # 10687)

BACKGROUND: Hypertension is a common chronic disease known to have many adverse health effects. Unfortunately, physicians have a tendency not to intensify their treatment of hypertension in response to uncontrolled blood pressure values; this tendency has been labeled “clinical inertia”. This trial was aimed at determining the impact of providing patients with tailored, web-based feedback to help them know when to ask questions aimed at intensifying their hypertension care.

METHODS: Diagnosed hypertensive patients (n=500) were enrolled in this RCT and randomized to one of two study groups: (1) Intervention condition--Web-based hypertension feedback, based on the individual patient's self-report of health variables and previous BP measurements, to prompt them to ask questions during their next physician's visit about hypertension care (e.g., “What can you do help me lower my blood pressure?”); (2) Control condition--Web-based preventive health feedback, based on the individual's self-report of receiving preventive care (e.g., pap testing). The feedback gave participants questions to ask which they could discuss with their primary care provider (PCP) at their next visit. The primary outcome of the study is change in blood pressure and change in the percentage of patients in each group with controlled blood pressure.

RESULTS: Of 500 patients enrolled at baseline, 418 (83.6%) completed the 1-year follow up visit. Most (82.2%) participants utilized the intervention during at least 6 of 12 months, though this did not differ between groups. In addition, most (61.2%) participants reported asking questions directly from the web-site with no difference between study groups. As an example of the control condition (preventative maintenance), if participants had not received a recent tetanus shot they were prompted to ask their PCP if they might benefit from receiving one. Significantly more patients in the control group reported discussing this with their PCP (30.9% control, 13.9% intervention; p<0.001). This led to significantly more subjects in the control group (20.7% control, 8.7% intervention, p=0.005) reporting receiving a tetanus shot in the past year at follow-up. As a similar example of the intervention condition (hypertension care), if participants had not received a creatinine test or urine protein in the past year, they were prompted to ask their PCP if they might benefit from such tests. Significantly more participants from the intervention condition reported discussing creatinine testing (45.8% intervention, 30.2% control; p=0.009) and urine protein testing (40.3% intervention, 30.2% control; p

CONCLUSION: The use of a patient activation intervention designed to overcome clinical inertia for hypertension care did not lead to more changes in hypertension medication use or blood pressure control. This was despite high levels of adherence, which led to positive changes in the use of preventive care services (e.g., tetanus immunization) as well as hypertension care services (e.g. creatinine testing, urine protein testing). By providing patients with individually tailored questions to ask during their PCP visits, this study demonstrated that participants were likely to discuss the questions with their PCP. These discussions led to changes in care, demonstrating that the feedback led to a positive change in the health management process.
Disparities in Enrollment in and Use of an Electronic Patient Portal Mita Sanghavi Goel 1; Tiffany Brown 1; Adam Williams 1; Romana Hasnain-Wynia 1; Jason Thompson 1; David Baker 1. 1Northwestern University, Chicago, Illinois. (Proposal ID # 11357)

BACKGROUND: The Health Information Technology for Economic and Clinical Health Act aims to accelerate the "meaningful" use of electronic health record (EHR) technology. One key strategy for realizing a variety of meaningful use criteria is providing patients access to their EHR (i.e., a "tethered" personal health record or "patient portal"). If patient portals are going to increasingly become a standard part of care delivery, it is important to ensure they are accessible to everyone and to minimize disparities in their use. Currently, little is known about the use of patient portals; therefore, we aimed to examine variations in enrollment in, and use of, an electronic patient portal by race/ethnicity, gender and age among patients directly offered this service by their providers.

METHODS: We performed an observational, cross sectional study of established patients with attending physicians at one urban, academic general medicine practice who received electronic orders from their providers requesting their enrollment in a patient portal. Our primary outcomes of interest were: (a) enrollment in the patient portal, (b) solicitation of provider advice among those enrolled, and (c) request for medication refills among those enrolled.

The primary independent variable was race/ethnicity, as determined by the EHR; internal reviews determined the kappa between EHR and self-reported race/ethnicity to be 0.98. Age, gender and provider were extracted from the EHR. Educational attainment and income were determined by linking individual patients' home addresses to census block group (CBG) level data and determining the percent of people in the CBG who completed high school and the percent below the federal poverty level.

To examine differences in enrollment by sociodemographic characteristics, we used chi-square statistics and performed multivariate logistic regression adjusting for race/ethnicity, age, gender, imputed education, imputed income, and provider. For regression analyses, we also adjusted variances to account for clustering of patients by provider. Lastly, we repeated similar analyses for our other outcomes: use of the advice and refill functions among those who had enrolled in the patient portal. We considered p<0.05 significant for all analyses.

RESULTS: Overall, 69% of 7088 patients with electronic orders enrolled in patient portals; however there were significant differences by race/ethnicity. All minority patients were significantly less likely to enroll than whites: 55% of blacks, 64% of Latinos and 66% of Asians compared with 74% of whites (chi-square p<0.05 for all pairwise comparisons). These differences persisted in adjusted analyses, although differences between Asians and whites were no longer significant. In addition, those who were 65 years and older were significantly less likely to enroll in the portal than those ages 18-34 years (adjusted OR 0.79, 95% CI 0.65-0.97). Of those 4091 patients enrolled in the portal, 76% solicited provider advice and 22% requested medication refills. There were no racial/ethnic differences in either advice solicitation or medication refills in unadjusted or adjusted analyses. There were however, differences by age and gender. The youngest patients, ages 18-34 years, were significantly less likely to solicit provider advice or request medication refills than any other age group in unadjusted and adjusted analyses. Similarly, male patients were less likely to solicit provider advice or medication refills than women, although only the disparity for soliciting provider advice remained significant after adjustment.

CONCLUSION: Future efforts to expand use of the patient portal need to address potential mechanisms for these disparities to ensure this technology is accessible to diverse patient populations.
Background: Shared decision-making (SDM) is a process where patients are active partners in the discussions and decisions about treatment. Both physician trust and shared decision-making are associated with positive health outcomes. African-Americans are less likely to trust their physicians and less likely to experience SDM than non-Hispanic whites, but previous research exploring trust and SDM in this population is limited.

Methods: We conducted five focus groups (n=27) and a series of in-depth interviews (n=24) among a purposeful sample of African-Americans with diabetes. All patients had insurance and received their care at an urban academic medical center. Interviews and focus groups were conducted by trained race-concordant interviewers with experience in discussing health and communication issues. Each interview/focus group was audio-taped, transcribed verbatim and analyzed using the qualitative software package of Atlas.ti. Coding was conducted using an iterative process and each transcription was independently coded by two members of the research team.

Results: Participants in this study described physician trust/mistrust as arising from two domains: physician bias/cultural discordance and concerns about technical competence/medical skills. Trust-building factors focused on interpersonal skills/relationship building and demonstration of medical knowledge/skills. Some participants described how trust in their physician led to adoption of more shared decision-making preferences and behaviors (from prior autonomous role preferences/behaviors). For example, one participant described the decision to start insulin this way: 'It could have gone so bad with a strong personality like mine; I usually want to call all the shots. But I really trusted him, and he was patient and he talked me through it...So we ultimately decided together that insulin would be the best thing...and I think that [physician encounter] was one of the best experiences of my life and I respect that he was a good doctor.' Conversely, other participants noted that physician mistrust allowed them to play a more passive role in the clinical encounter. For example, one participant noted 'I prefer that my doctor tell me what to do. I have a trust issue, but I really trust this doctor, so I'm more comfortable with him just telling me what to do.' Interpersonal skills were more commonly reported than medical knowledge/skills as factors that would enhance shared decision-making.

Conclusion: This study is consistent with prior research asserting that perceived bias/cultural discordance is a major source of physician mistrust among African-Americans. In addition, our research suggests that physician mistrust among this group may partially be addressed through relationship building activities and patient education efforts (i.e. 'demonstration of medical knowledge/skills'). Finally, increased physician trust may have the potential to either enhance shared decision-making or reduce SDM among African-Americans. Identifying ways to improve physician trust among African-Americans while simultaneously empowering them to play more active roles in the clinical encounter has the potential to improve diabetes outcomes in this population, and is an important area of future research.
Who Should be Responsible for Test Results Returning After Hospital Discharge: A Provider Survey

Martin C. Were 1; Xiaochun Li 1; William Michael Tierney 2.
1 Regenstrief Institute Inc, Indiana University School of Medicine, Indianapolis, Indiana; 2 Regenstrief Institute, Indiana University School of Medicine, Indianapolis, Indiana. (Proposal ID # 12462)

BACKGROUND: Transitions in health care between venues provide opportunities for miscommunication and errors. An area of significant process breakdown during the inpatient-to-outpatient care transitions is in the management of tests with pending results at hospital discharge. Studies show that errors related to missed test results occur in nearly half of patients discharged with pending results. To reduce these errors, a responsible provider for the pending tests needs to be identified. This provider would follow-up on the pending results and determine what actions need to be taken once the results return.

Identifying an appropriate responsible provider is not trivial, however, especially given that the decision involves and affects multiple inpatient and outpatient providers and venues. To date, almost no research exists to help inform how to identify the provider(s) responsible for following up on pending tests. In this study, we used survey methodology to assess whether perceptions regarding who is (or should be) the responsible provider for managing tests with pending results at hospital discharge differed between hospitalists, outpatient staff physicians, and physicians-in-training (residents). We evaluated provider attitudes based on the various clinical scenarios that surround pending results to evaluate consistency of opinions within each provider group, and differences in opinions between the three groups.

METHODS: Validated instruments to assess provider opinions about responsibilities for care as patients transition from inpatient to outpatient venues do not exist. Therefore, we developed an original survey based on several scenarios that focus on how results of diagnostic tests pending at hospital discharge are managed. We surveyed all eligible resident physicians, and the inpatient and outpatient attending physicians who oversaw care for patients admitted to three hospitals in central Indiana.

Ratings of general attitudes towards management of tests with pending results were based on a 5-point Likert Scale. We compared attitudes regarding management of pending test results between inpatient staff physicians, outpatient staff physicians, and resident physicians. We also compared opinions about which physicians were (or should be) responsible for managing the pending test results depending on various clinical scenarios. For the primary analysis, we assessed the effect of the respondents’ practice venues by employing a variable representing the percentage of time each physician spends in inpatient versus outpatient care. Age, gender, practice type, years of experience, and outpatient clinic type were included as covariates in our analysis as they potentially affected attitudes towards pending test management.

RESULTS: Of the 129 residents (78% of those surveyed) and 75 staff physicians (70%) who responded to the survey, 93% agreed that all tests with pending results must be reviewed by a provider. Also, 83% felt that discharging providers needed to identify the provider responsible for following up pending tests, and 68% felt that outpatient providers deserved a say in this decision.

Compared to attending physicians, residents were less likely to believe that it was the inpatient providers’ responsibility to follow-up on pending tests (74% vs. 51%, p=0.04) or to always identify the follow-up providers (79% vs. 89%, p=0.03). As the amount of inpatient care time increased for attending physicians, fewer felt that hospital policy should determine the responsible provider for pending tests (p for trend=0.03), or that inpatient providers should be responsible for following up on these tests (p=0.004).

There was wide variability in opinion on who should be the responsible provider based on the type of pending test. Most respondents (87%) felt that inpatient providers should follow pending tests for patients with no existing responsible outpatient provider or for tests ordered in the Emergency Room prior to admission (86%) or if results returned before discharge summary reached outpatient providers (68%). Conversely, most respondents (88%) felt that outpatient providers should be responsible for results that took a long time to return (e.g. > 3 months).

Attending physicians were more likely than residents to think it was the inpatient physician’s responsibility to follow-up on tests for patients who left against medical advice (72% vs 42%, p=0.01) or were assigned new providers (64% vs. 31%, p=0.003) or for results that returned before discharge summary reached outpatient provider (80% vs 61%, p=0.02), return after 3 months (21% vs. 5%, p=0.049); and for sensitive tests, e.g. HIV test results (69% vs. 50%, p=0.03).

CONCLUSION: In this survey of attending and resident physicians practicing at three inner-city teaching hospitals, opinions on who should be the responsible provider for managing tests with pending result varied widely based on the physician’s role (resident vs. attending), the amount of time spent inpatient vs. outpatient care, and the characteristics of the pending test result. Respondents felt that it would be best to develop a consensus policy among inpatient and outpatient providers on who was responsible for managing pending tests at hospital discharge.

Respondents tended to disagree with statements that assigned responsibility to them in a way that would increase their workload. That is, inpatient physicians tended to feel that outpatient physicians should be responsible, and vice versa. In our institutions, residents are primarily responsible for preparing discharge summaries and spend the majority of their time on inpatient services. This might explain why resident respondents felt that outpatient providers should be responsible for various aspects around pending tests. We observed the same pattern among attending physicians: those spending more time in one venue (e.g. inpatient vs outpatient) felt that those in the other venue should be responsible for tests pending at discharge.

Similar to previous studies, our respondents felt that current systems of managing tests need improvement. Consensus policies should be established by hospitals to assign responsibility for following up tests pending at discharge.