

Relative influence of physicians versus patients in measures of diabetes control

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Background: While quality improvement (QI) interventions are often delivered to providers and staff, their evaluation is based on patient-level outcomes. One such intervention, performance reports, often meets resistance from providers who do not consider themselves responsible for the patient-level outcomes included in the reports. Although patient-level factors are known to account for the majority of differences in outcomes among patients, we sought to perform an analysis to measure the contribution of individual primary care physicians (PCPs) on measures of diabetes control.

Methods: We used data from a randomized study of resident PCPs at our three teaching clinics in Bronx, NY. The experimental group received quarterly performance reports documenting appropriate testing and level of control for their patients with diabetes. In addition, they completed worksheets by ordering necessary testing and titrating medications as appropriate for the 5 patients with the highest HbA1c. The control group received performance reports only. Our outcomes were HbA1c $\leq 8\%$, LDL ≤ 100 , microalbumin ≤ 30 , BP $\leq 130/80$ or $\leq 140/90$ for the most recent value in the past 12 months. Our analysis at 6 months showed improved blood pressure control in the experimental arm compared to the control arm but these differences were present at baseline. To measure the relative contribution of individual PCPs, we measured the percent of variance explained by PCP in a hierarchical model that included two levels or sources of variance (patient-level repeated measures and PCP). The model was adjusted for baseline performance, clinic at which each patient received care, the PGY level of the PCP, and patient age, sex, race/ethnicity and insurance. Our model considered PCP as a random effect since it defines the hierarchical level that we are interested in. The intra-correlation effect of repeated measures of each patient was taken into account using generalized estimating equation (GEE) method in our hierarchical model.

Results: Our study included 2,091 patients of 141 residents. The individual PCP significantly influenced the variance of all 5 outcomes measured. The percent of the variance in the outcomes between arms explained by the PCP was 11.2% for HbA1c $\leq 8\%$ ($p=0.002$), 15.8% for LDL ≤ 100 ($p<0.001$), 45.2% for microalbumin ≤ 30 ($p<0.001$), 10.1% for BP $\leq 130/80$ ($p=0.002$), and 16.4% for BP $\leq 140/90$ ($p<0.001$), with the rest of the variance being explained by patient-level factors. For example, in the HbA1c outcome, we observed a 13-fold difference in the odds of meeting the control outcome cutoff ($\leq 8\%$) for some resident PCPs versus others.

Conclusions: In our teaching sites, diabetes control is significantly associated with the individual resident PCP assigned to each patient even after adjustment for site of care, patient characteristics, and PGY year of the PCP. Our study highlights that providers play an important role in disease control for patient with diabetes and that measuring patient-level outcomes is a valid way to measure differences in performance among PCPs even in a medically and socially complex patient population. As health systems transform into Patient-Centered Medical Homes and strive to become Accountable Care Organizations, we must identify and foster those panel management practices and processes followed by trainees associated with improved diabetes control, and organize systems of care that support those best practices.

The Impact of Primary Care Weight Advice

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Background: Individuals in the United States continue to be greatly affected by the epidemic of overweight and obesity. Additionally, physicians struggle with identifying and providing effective weight counseling to their patients. Thus, there is a need for simple and effective interventions for physicians to help their overweight and obese patients to lose weight. Physician acknowledgement of a patient's weight has recently been shown to have a significant effect on patients' perceptions of their own weight, in addition to their desire and attempts to lose weight. The objective of this study is to examine the association of a doctor's acknowledgement of a patient's weight status with reported weight loss by comparing 2005 to 2008 data from the National Health and Nutrition Examination Survey (NHANES).

Methods: We analyzed data from the 2005 to 2008 National Health and Nutrition Examination Survey to examine the association of a doctor's acknowledgement of patient weight status and patient reported weight loss. We included nonpregnant overweight and obese (body mass index [BMI] ≥ 25) participants between the ages of 20 and 64 years who had responded to the question, "Has a doctor or other health professional ever told you that you were overweight?" (n=5054). The main outcome measure was the proportion of participants who lost at least 5% of their body weight in the past year. Bivariate relationships by BMI category were evaluated using chi square tests between participants who had and had not been told by a doctor that they were overweight, demographic characteristics and weight loss. To determine the odds of losing at least 5% weight, a logistic regression was performed, controlling for the following variables: age, sex, education, marital status, poverty to income ratio (PIR), ethnicity, place of routine care, number of physician visits in the past year, and doctor's acknowledgement of weight status.

Results: Overweight participants were significantly more likely to report a 5% loss of weight in the past year if their doctor told them they were overweight (adjusted OR 2.08; 95% CI 1.62-2.66). Obese participants reported similar results (adjusted OR 1.81; 95% CI 1.34-2.44). Also, overweight and obese patients, respectively, were also more likely to report a 10% loss of body weight in the past year if their doctor told them they were overweight (adjusted OR 2.81; 95% CI 1.93-4.06 for overweight; adjusted OR 2.27; 95% CI 1.31-3.94 for obese).

Conclusions: Physicians' recognition of their patients' weight status is associated with significant patient weight loss. Specifically, overweight and obese individuals have almost two times the odds of reporting a 5% loss of weight in the past year – a weight loss amount that has been found to significantly improve the comorbidities associated with being overweight or obese. In addition, overweight and obese individuals were more than twice as likely to report a 10% weight loss in the past year if their doctor had told them that they were overweight. This suggests that physician acknowledgement of weight status may have a measurable impact on weight.

Characterizing Healthcare Utilization Among Older Adult Latinos With A History Of Depression And Access To Healthcare

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Background: Effective treatments for depression in older adults are available. Older adult Latinos, however, are less likely to be treated for depression than older non-Latino whites. Using the largest qualitative dataset collected to date on older Latinos with a history of depression and healthcare access, we aim to characterize how and why this unique population uses healthcare services and treatments for depression management.

Methods: We used data from the qualitative sub-study at 10-year follow-up of participants in the Partners in Care (PIC) study, a RCT of QI programs for depression among people with depression and healthcare access. For the qualitative sub-study, all PIC Latino participants (n=205) were invited to complete 3 semi-structured qualitative interviews over 12 months. We evaluated Latino sub-study participants age ≥ 50. We developed a descriptive framework to model the pathways along which a patient may proceed as s/he engages in health care services/treatments for depression management. This framework allowed us to identify participants who moved further along the healthcare utilization pathway. To facilitate data management and analysis, we constructed a data matrix (Microsoft Excel 2007) based on the framework; each column represents a step along the healthcare utilization pathway outlined by the framework, each row an individual transcript. For every health care encounter described, we identified meaningful quotations using standard qualitative content-analysis methods and input them into the data matrix. We identified recurring concepts representing contextual factors and participants' behaviors and attitudes associated with use, or lack of use, of mental healthcare services/treatments, which we developed into codes. We organized coded quotations into themes, and analyzed the themes for their association with participants' progression along the healthcare utilization pathway.

Results: Ninety-five older adult Latinos (77% response) completed at least one qualitative interview (75% female, age range 50-88 years, 265 interviews). Certain themes (e.g., patient activation, patient awareness of depression as a disease, positive past experiences with depression care, perceived provider traits (e.g., empathy, willingness to listen), repeated provider-led outcomes assessment, patient-provider ethnic/gender concordance) facilitated care and were more common in responses among depressed older Latinos who proceeded further along the healthcare utilization pathway. Other themes (e.g., mistrust of provider due to a negative experience and/or general beliefs, absent outcomes tracking) inhibited care and were more likely to be present in responses of those participants who disconnected from care. Some themes (e.g., beliefs about depression, attitudes towards medications, other medical problems, social relationships, media) were associated with variable progression along healthcare utilization pathway.

Conclusions: Our findings highlight that, even with a history of depression and healthcare access, depressed older Latinos engage in &/or disconnect from using depression services/treatments for myriad reasons at different points in the healthcare utilization process. By describing the reasons associated with patient utilization of and disengagement from mental healthcare services and treatments, our study may help inform the development of future interventions to improve depression care for older depressed Latinos and reduce mental health disparities.

Is Weight Gain Beneficial for HIV Infected Individuals Initiating Combination Antiretroviral Treatment (cART) Regardless of Initial Body Mass Index?

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Background: Since the advent of combination anti-retroviral therapy (cART), patients are living longer and increasingly experiencing comorbid disease associated with obesity. Most individuals initiating cART are now normal weight or overweight. We compare 12-month trends in weight among uninfected and HIV infected individuals initiating cART and ask whether benefits associated with weight gain depend upon weight status at cART initiation.

Methods: We analyzed data from the Veterans Aging Cohort Study (VACS), a longitudinal prospective multi-site observational study of HIV infected and uninfected veterans across 128 nation-wide Veterans Administration (VA) sites. We identified 4,732 HAART initiators between the years of 2000 and 2008 who were alive and in follow-up at one year, as well as 18,769 HIV negative comparators. Changes in weight were examined over a 12-month period. Patients were stratified into those who gained weight (> 5 lb. increase in weight), those who lost weight (> 5 lb. decrease in weight), and those who stayed the same (weight change within 5 lbs.). Our outcomes were the VACS Risk Index (a validated prognostic index comprising age, CD4, viral load, hemoglobin, FIB4, GFR and hepatitis infection) and all cause mortality.

Results: Fifty-one percent of HIV positive patients gained > 5 lbs. in the first year after cART initiation compared to 32% of uninfected patients in the same period ($p < .0001$). Mean one year weight change was 6.6 lbs. greater in HIV infected compared to uninfected veterans ($p > 0.05$). Among the 43% HIV+ who started out overweight (BMI>25), 72% gained >10 pounds and 36% gained >20 pounds. HIV positive patients who gained weight had lower baseline CD4 counts, higher viral loads, and experienced greater improvements in their VACS index. Among HIV positive veterans, weight gain was associated with improved survival across all starting BMI categories. For every five pounds of weight gained, mortality decreased by 4% ($p < 0.0001$, HR 0.96, CI 0.93-0.98). Half of this association was explained by VACS Index Score.

Conclusions: In the first year of cART, HIV infected individuals gain weight well beyond that observed among demographically and behaviorally similar uninfected veterans and, compared to HIV infected individuals who maintain weight, weight gain is associated with improved clinical biomarkers and overall survival regardless of baseline weight. Despite real weight gain after cART among normal and overweight individuals, we find no support for weight loss or maintenance interventions in this population.

The Role of Care Coordinators in Improving Care Coordination: The Patient's Perspective

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Background: Evidence suggests that care coordination can improve provider and health system quality and efficiency. To date, little is known about the impact of various approaches to improving care coordination from the patient's perspective. This paper focuses on the experiences of patients who received care from multiple doctors and explores whether patients who say they have a care coordinator, better access to primary care, and strong provider-patient communication are less likely to experience care coordination problems.

Methods: Data come from a telephone survey conducted in 2010 among a nationally representative sample of 19,738 adults in eleven countries. We examine self-reported coordination gaps related to medical records or tests, communication failures between providers including specialists, and failure to provide information about care received during a hospitalization and/or ER visit post discharge. We use multivariate logistic regression models to examine whether having a care coordinator, accessible care, and a strong patient-provider relationship reduces the risk of coordination gaps after controlling for cofactors.

Results: Transitions between different care settings are an especially vulnerable period for patients because of the potential for incomplete or inaccurate information transfer and lack of appropriate follow-up care. Having someone that helps coordinate or arrange the care patients receive from other doctors reduces the risk of coordination problems. Patients with a care coordinator were less likely to report that their test results or medical records were not available at their scheduled appointment (10% versus 23% , $p < .001$), they received conflicting information from different doctors (21% versus 34%, $p < .001$), or someone failed to follow-up about their test results (14% versus 34%, $p < .001$). Patients who saw specialists and had a care coordinator were also more likely to report that their regular doctor and specialist were sharing information about their care. Among hospitalized patients, those lacking a care coordinator were more likely than those with a coordinator to report that that no one made arrangements for a follow-up visit with a doctor post-discharge (35% versus 22%, $p < .001$) and that their regular doctor was not informed about the care they received while they were hospitalized (32%, versus 13% versus $p < .001$) and in the emergency room (46% versus 27% versus, $p < .001$). Having a care coordinator reduces the risk for all coordination problems, even after controlling for cofactors, including whether a patient has accessible care or a strong patient-doctor relationship.

Conclusions: Physicians care for a high percentage of patients with multiple chronic conditions who may be co-managed by numerous physicians and health care professionals in various settings. Not surprising, patients who receive care from multiple physicians can experience fragmented and uncoordinated care. Our findings indicate that patients who report having a care coordinator as part of their care team and who also report having a positive patient-provider relationship and easy access and communication with their practice are significantly less likely to experience care coordination problems. Results suggest that including care coordinators in care teams can be a promising strategy for improving the care of patients with complex healthcare needs.

A Comparison of eVisits and Office Visits for Sinusitis and Urinary Tract Infections at Four Primary Care Practices

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Background: There is growing recognition that many physician-patient encounters do not require face-to-face contact. The availability of secure internet portals and personal health records creates the opportunity for online care or structured “eVisits.” An increasing number of health systems provide eVisits and more health plans reimburse for eVisits (identified via CPT code 99444). While there is growing use of eVisits, little is known about their clinical effectiveness. To fill this gap in knowledge, we compared the care between eVisits and office visits.

To complete an eVisit in our healthcare system, patients log onto their secure personal health record and go through a structured questionnaire with branching logic that reviews their symptoms. This information is sent to their primary care physician who reviews this information and the patient’s chart and answers on average in ~4 hours. The physician response is via the secure portal, prescriptions are sent electronically to the pharmacy, and the care provider’s note is automatically put into the healthcare system’s electronic health record (EHR). Four commercial health plans in the region reimburse eVisits and for the eVisit a patient pays the typical office visit co-payment.

Methods: In the EHR for the University of Pittsburgh Medical Center, we used diagnosis codes to identify all eVisits and office visits for urinary tract infections (UTI) and sinusitis at four primary care practices that occurred between 1/1/10 and 5/31/11. We focused on UTI and sinusitis, because these were common reasons for eVisits and there are published practice guidelines on management. The four practices chosen were the first to adopt eVisits within the system (they are now offered at all practices) and have the highest number of eVisits per month. We abstracted the necessary information (e.g. problem list, prescriptions, tests ordered, follow-up care) from the EHR.

Results: We identified 5595 sinusitis visits (9% of which were eVisits) and 3341 UTI visits (3% eVisits). eVisit users were on average only slightly younger (>65yo, eVisits 6% vs. 13% office visits) and employed by self-report (75% vs. 62%). Surprisingly, there was no statistically significant difference in socio-economic status between eVisit and office visit patients (e.g. median household income in zip code <\$30,000, 12% vs. 10%). At eVisits, physicians were less likely to order any relevant testing for the condition (e.g. urine culture or urinalysis, 6.5% UTI eVisits vs. 53% UTI office visits). At eVisit physicians were more likely to prescribe antibiotics (e.g. visits with antibiotic prescription, 99% sinusitis eVisits vs. 93% sinusitis office visits). A similar number of patients had any follow-up in the subsequent 3 weeks for the condition (e.g. 9.9% UTI eVisits vs. 11.8% UTI office visits).

Conclusions: At these four primary care practices, eVisits accounted for almost 7% visits for sinusitis and UTI. eVisits attracted patients who were slightly younger and employed. In an eVisit, physicians are more likely to prescribe antibiotics and are less likely to order testing. There was no difference in the need for follow-up. Recognizing we cannot account for differences in diagnosis and severity of illness between the two groups of patients, these results will be helpful to physicians and health systems that are considering eVisits.