## Title
PREDICTORS OF PATIENT-PROVIDER RACE AND ETHNICITY CONCORDANCE



## Authors
Traylor, A
Schmittdiel, J
Uratsu, C
et al.

## Publication Date
2009

Peer reviewed

of home address changes, emergency department (ED) visits, hospital admissions, and proximity to HIV specialty and primary care clinics were assessed through multivariable logistic regression. 6 month risk was calculated from time of first contact in 2007. We internally validated model coefficients by applying bootstrap sampling to candidate variables; variable selection was performed using step-wise regression and the Bayes Information Criterion. We assessed model fit through calibration, discrimination, and reclassification and assessed overall model improvement using the AUC, Hosmer-Lemeshow test, and integrated discrimination improvement index. The final model was externally validated using 2,181 patient in the validation set.
**RESULTS:** Yhe unadjusted 6 month hospitalization rate was 11%. Significant predictors (of stability p<.05) after multi-variable adjustment included CD4>250 (Odds Ratio: 0.63), RNA viral load <400 (0.47), no prior screening for cocaine use (.68), no prior hospitalizations (.28), and no prior ED visits (.62) over the last year. The AUC for the derivation and validation model was 0.75 (95% CI: 0.71, 0.78) and 0.76 (95% CI: 0.72, 0.79) respectively.
**CONCLUSION:** A set of automated clinical and non-clinical indicators can predict 6 month risk for hospitalization among community dwelling HIV patients in a large academic safety net hospital. Electronically derived risk models may allow public health systems to identify HIV patients that could be successfully migrated to primary care sites without requiring expensive chart review.

**PREDICTIVE VALUE OF ALERT TRIGGERS FOR IDENTIFICATION OF DEVELOPING ADVERSE DRUG EVENTS** C.R. Moore[1]; J. Li[1]; C. Hung[1]; J. Downs[1]; J.R. Nebeker[2]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC; [2]VAMC, Salt Lake City, UT. *(Tracking ID # 205185)*

**BACKGROUND:** Computerized event triggers alert clinicians to the possibility of adverse drug events (ADEs) based on trends in lab results and pharmacy orders, and have historically been used to detect existing ADEs. However; the ability of computerized event triggers to identify patients at high risk for inpatient ADEs before they occur has not been well studied. If these primary prevention event triggers can be designed to detect patients at increased risk for ADEs, before ADEs occur, then patient harm can be avoided. The objective of this study is to assess the positive predictive value of computerized event triggers to detect emerging ADEs in hospitalized patients before they occur.
**METHODS:** We conducted a prospective observational study in patients at a university-based teaching hospital during a 5-month period. Patients were monitored using primary prevention computerized event triggers designed to detect patients at increased risk for 4 types of ADEs: hypoglycemia (blood glucose 50 mg/dl), hypokalemia (blood potassium 3.0 mmol/l), hyperkalemia (blood potassium 6.0 mmol/l), and thrombocytopenia (platelets 60 k) (Table). Each patient for whom an event trigger fired was followed in order to determine whether a drug-induced episode of hypoglycemia, hypokalemia, hyperkalemia, or thrombocytopenia occurred 1 to 72 hours after the incident trigger firing. Inciting drugs for hypoglycemia were defined as: insulin, sulfonylureas, metformin, and thiazolidinediones. Potassium reducing () drugs were defined as: loop or thiazide diuretics. Potassium increasing () drugs were defined as: angiotensin converting enzyme inhibitors, angiotensin-2 receptor antagonists, potassium supplements, or potassium-sparing diuretics. Drugs that can cause thrombocytopenia were defined as: heparin, trimetheprim/sulfamethoxazole, clopidogrel, valproate, or chlordiazepoxide.
**RESULTS:** Overall, the computerized event triggers fired 611 times on 456 patients. Of the 456 patients, 101 experienced one or more related ADEs between 1 and 72 hours after the incident trigger firing. The positive predictive value of the triggers and median time from trigger firing to ADE was 31% (CI95%=25% - 38%) and 11.6 hours for hypoglycemia, 4.0% (CI95%=1% - 9%) and 17 hours for hypokalemia, 31% (CI95%=18% - 47%) and 25.4 hours for hyperkalemia, and 21% (CI95%=17% - 39%) and 48.4 hours for thrombocytopenia.
**CONCLUSION:** Primary prevention event triggers designed to identify hospitalized patients at increased risk for drug-induced hypoglycemia, hyperkalemia, and thrombocytopenia have sufficient predictive value and timeliness to potentially help clinicians avert ADEs.

| Adverse Event Caused by a Drug | Computerized Event Trigger Algorithm |
|---|---|
| Hypoglycemia | Active hypoglycemic drug ***AND*** 3 glucose results < 65 mg/dl within 48 hrs |
| Hypokalemia | ([potassium↓ drug started] ***OR*** [potassium↑ drug stopped] 1-5d prior) ***AND*** (potassium<3.8 and reduced by 0.8 over 72 hrs ***OR*** potassium<3.4 and reduced by 0.5 over 72 hrs) |
| Hyperkalemia | potassium↑ drug started 1-5d ***AND*** (potassium>5.5 and increased by 0.8 over 72 hrs ***OR*** potassium>5.9 and increased by 0.5 over 72 hrs) |
| Thrombocytopenia | (Platelets < 100k ***AND*** Platelets reduced by ≥ 50k within 4d prior) ***AND*** Taking drug that can cause thrombocytopenia since start of decrease |

**TABLE. Primary Prevention Computerized Event Triggers**

**PREDICTORS AND OUTCOMES OF DIFFICULT PATIENT-DOCTOR ENCOUNTERS** S. Hinchey[1]; J.L. Jackson[2]. [1]Uniformed Services University of the Health Sciences, Bethesda, MD; [2]Society of General Internal Medicine, Bethesda, MD. *(Tracking ID # 205438)*

**BACKGROUND:** Previous studies have shown that some encounters are experienced as difficult by clinicians. Our goal was to assess patient and physician correlates with difficult encounters and the impact of such encounters on short-term patient-health outcomes.
**METHODS:** Seven hundred and fifty adults presenting to an Internal medicine clinic with a physical symptom were enrolled and surveyed at three time-points, immediately before and after their clinic visit, and again 2 weeks later. . Pre-visit patient measures included symptom characteristics, expectations, mental disorders (PRIME-MD),and functional status (MOS SF-6). Post-visit patient measures included satisfaction (RAND 9-item survey), symptoms resolution, health services utilization (6 month), visit costs and residual expectations. Clinicians completed the Physicians Belief Scale (PBS) that measures psychosocial attitudes toward care and were surveyed immediately after each encounter for perceived difficulty using the Difficult Doctor-Patient Relationship Questionnaire..
**RESULTS:** One hundred thirty-three (17.8%) of patient encounters were rated as difficult by their clinician. On multivariable analysis, patient correlates with difficulty included having poorer functional status (0.95, 95% CI: 0.90–0.99), greater number of "currently bothersome" physical symptoms (1.1, 95% CI: 1.01–1.19) and having higher utilization rates (1.10, 95% CI: 1.05–1.15). Clinician correlates included worse psychosocial orientation (PBS score: 1.08, 95% CI: 1.05–1.12) and fewer years as a practicing clinician (0.95, 95% CI: 0.93–0.98). Difficult encounter outcomes included more unmet expectations both immediately post-visit (1.64, 95% CI: 1.03–2.61) and at two weeks (1.49, 95% CI: 1.18–1.89), lower satisfaction at both time points, worse functional status at 2 weeks (p=0.005), and reporting their physical symptom to be more severe at 2 weeks (p=0.008).
**CONCLUSION:** Both patient and clinician characteristics affect whether an encounter will be perceived as difficult. Patients involved in such encounters experience worse immediate and 2-wk outcomes.

**PREDICTORS OF PATIENT-PROVIDER RACE AND ETHNICITY CONCORDANCE** A. Traylor[1]; J. Schmittdiel[2]; C. Uratsu[3]; C.M. Mangione[4]; U. Subramanian[5]. [1]Goldman School of Public Policy; University of California, Berkely, Berkeley, CA; [2]Kaiser Permanente of Northern California; Division of Research, Oakland, CA; [3]Kaiser Permanente Division of Research, Oakland, CA; [4]University of California, Los Angeles, Los Angeles, CA; [5]Diabetes Translation Research Center; Indiana University School of Medicine, Indianapolis, IN. *(Tracking ID # 204784)*

**BACKGROUND:** African-American and Hispanic patients are less likely than Whites to have a same race physician despite evidence suggesting race concordance improves trust, reduces bias, and improves patient-physician communication for minority patients. Few studies have evaluated predictors of concordance in large samples, included patient, provider and organizational factors; or evaluated concordance for patients needing chronic care. Objective: The purpose of this study was to simultaneously examine the patient, physician and medical facility predictors of patient-physician race concordance among a large cohort of diabetes patients in an integrated healthcare delivery system.

**METHODS:** The final study population consisted of 117,216 White, Hispanic and African-American patients that received care from 1750 physicians in 49 facilities across Northern California. Patients were drawn from Kaiser Permanente Northern California (KPNC) diabetes registry who were continuously enrolled in 2005. Patient race was obtained from KP member surveys, study surveys and hospitalization data. Physician level variables and facility level racial composition of patients and providers were obtained from KNPC automated databases. Patient-physician racial match or concordance (dependent variable) was indicated by a binary variable of 1 if a patient had a same-race provider and 0 if a patient had a provider of a different race. Our two main explanatory variables included a) "availability" of the same race physician, indicated by 3 continuous variables (one for each race); defined as the percentage of all patients at each facility treated by Black, Hispanic, or White physicians and b) 'patient-provider link' indicated by two binary variables of whether the patient chose the physician or was assigned a physician by KP. We conducted stratified logistic regression models predicting race concordance for African-American, Hispanic and White patients, controlling for patient choice in provider, medical facility racial composition, patient demographic, socioeconomic and health status; and physician demographic and practice characteristics, and for clustering of patients and physicians within medical facilities.
**RESULTS:** 46% of the patients were White, 14% Asian, 11% Hispanic and 10% were African-American. Physicians were disproportionately White (47%) or Asian (40%). Nearly 48% of white patients were racially similar to their physicians, whereas only 9.7% of African-American patients and 11.2% of Hispanic patients were racially/ethnically matched. African-American and Hispanic patients in concordant and discordant relationships were similar in age, gender, health status and Medicare status. Compared with patients who were assigned a physician by the health care organization, minority patients who chose their physicians were more likely to have a same race provider with Odds ratios of 1.71 (CI 1.44- 2.04) for Hispanic and 2.2 (CI 1.74–2.82) for African American patients. In the stratified analyses, availability of a same race provider was also a strong predictor of racial match for African American patients [OR 2.7; CI 2.45–2.98].
**CONCLUSION:** Efforts aimed at diversifying the medical workforce may increase race concordance for minority patients. If, as the literature suggests, race concordance improves outcomes, increasing the availability of minority physicians can reduce racial and ethnic disparities in health.

**PREDICTORS OF SEXUAL RISK BEHAVIOR: DIFFERENCES AMONG HIV-INFECTED HOMOSEXUAL MEN, HETEROSEXUAL MEN AND WOMEN** C. Golin[1]; C.A. Grodensky[1]; C.M. Suchindran[1]; A.J. Wong[1]; D. Long[1]; J.S. Groves[1]; S. Przybyla[1]; J.L. Earp[1]; Z. Chariyeva[1]. [1]University of North Carolina at Chapel Hill, Chapel Hill, NC. *(Tracking ID # 205309)*

**BACKGROUND:** Few studies have examined whether HIV-positive people who feel more confident about practicing safer sex, perceive more HIV-related stigma, report more alcohol use, or have greater emotional well-being are less likely to engage in risky sexual behavior. We set out to answer this question for men who have sex with men (MSM), heterosexual men (MSW) and heterosexual women (WSM) for two groups: those with and without an at-risk partner.
**METHODS:** We enrolled 490 sexually active HIV-infected patients at one of three North Carolina clinics that are part of SAFETALK, a randomized controlled trial of a safer sex counseling intervention. Using baseline audio computer-assisted self interviews completed 7/06–5/08, we assessed: 1) unprotected anal/vaginal intercourse with any partner (UAVI) and with at-risk partners [transmission risk behavior (TRB)] in past 3 months; 2) psychosocial characteristics, including emotional well-being, stigma and safer sex self-efficacy; 3) alcohol and drug use in past 3 months; and 4) age, race/ethnicity, education, and income. We categorized participants as MSW, MSM, or WSM by gender of reported sexual partners or, if no sexual partners reported, self-reported sexual identification. We used Chi Square, Cochran-Mantel-Haenszel, or Kruskal Wallis tests to detect differences between MSW/MSM/WSM subgroups, and multivariate logistic regression with interaction variables to determine whether emotional well-being, safer sex self-efficacy, stigma, and alcohol use predicted UAVI and TRB differently in the MSW/MSM/WSM subgroups.
**RESULTS:** Our sample was 38% MSMs, 26%MSWs, and 32%WSMs; they were poor (54% <$10,000 annually), poorly educated (24% and predominantly African American (71%). Twenty-one percent engaged in UAVI, 12% TRB. Greater safer sex self-efficacy and emotional well-being each predicted a lower likelihood of UAVI and TRB for all groups ($p < .005$), with no differences by group. Neither alcohol use nor stigma were associated with UAVI or TRB for any group. UAVI, TRB, stigma, self-efficacy, emotional well-being and drug use did not differ for MSW/MSM/WSM subgroups. However, group differences did emerge in alcohol use (63% MSW; 72% MSM; 42% WSM $p<0.0001$), African American race (81% MSW; 59% MSM; 77% WSM: $p<0.0001$), age ($<0.0001$), education ($p<0.0001$), and income ($p=0.0003$). Controlling for self-efficacy and age, MSM, but not MSW, were more likely than WSM to engage in UAVI (OR: 2.659, CI: 1.568–4.50) and TRB (OR: 2.087, CI: 1.095–3.980). The picture was similar for emotional well-being and age for UAVI (OR: 2.352, CI: 1.425–3.882) and TRB (OR 1.912, CI: 1.016–3.598). In models controlling for stigma, alcohol use, and age, we also found MSM were twice as likely to engage in UAVI and TRB as WSM.
**CONCLUSION:** For all three groups, those who felt more confident about practicing safer sex and who had greater emotional well-being were less likely to engage in risky sexual behavior both with and without an at risk partner. Controlling for psychosocial factors, MSM but not MSW were more likely to engage in risk behaviors. To develop prevention with positive interventions these difference should be taken into account.

**PREGNANCY INTENTION IN WOMEN WITH CHRONIC MEDICAL CONDITIONS: A FOCUS GROUP STUDY** C.H. Chuang[1]; D. Velott[1]; C.S. Weisman[1]. [1]Pennsylvania State University, Hershey, PA. *(Tracking ID # 205327)*

**BACKGROUND:** Unintended pregnancy continues to be a major public health concern in the U.S. Women with chronic medical conditions are at increased risk for the adverse effects of unintended pregnancy as they are highly vulnerable to complications during pregnancy and adverse pregnancy outcomes. Understanding how women with chronic medical conditions formulate decisions about future childbearing will better inform interventions aimed at reducing unintended pregnancy occurrence. Using focus group methodology, we examined how women with chronic medical conditions viewed future childbearing and how their health status influenced their decisions.
**METHODS:** This study was designed to capture differences in pregnancy intention by chronic condition and prior pregnancy experience. Focus groups were stratified by chronic condition (diabetes, hypertension, obesity) and by previous live birth. This 3×2 design yielded 6 sampling frames; we planned 2 focus groups per sampling frame for a total of 12 groups. Participants were recruited using local newspaper/radio advertisements, flyers posted in clinical sites, and from a research volunteer call list from the Penn State Diabetes Registry. Participants were asked about their intention for future pregnancy, preconception planning, perceived risk of adverse pregnancy outcomes, and birth control practices. Transcripts from the 90-minute sessions were analyzed for major themes using a modified grounded theory method using NVivo8 qualitative research software.
**RESULTS:** The 12 focus groups included 72 women: 16 diabetic women, 16 hypertensive women, and 40 obese women. Of the participants, 21 had no previous live births and 51 had at least one previous live birth (more than half of whom had experienced at least one previous pregnancy complication). Four major themes were identified, consistent across all medical conditions and parity: (1) Lack of control over future pregnancy. Women adopted an "if it happens, it happens" attitude, with many women considering pregnancy not to be a matter of choice, but a matter of fate, or a decision made by God. (2) Downplaying pregnancy-related risks associated with chronic medical conditions. The perception that the risks were theoretical and not necessarily realistic was often justified by accounts of healthy women who had also experienced pregnancy complications. (3) Hostility toward providers' messages about their pregnancy-related risks related to the chronic condition, tempered in some cases by positive interactions with doctors. (4) Limited knowledge about how medical conditions might limit contraceptive choices. For example, there was no discussion about how birth control pills may affect women with hypertension or diabetes.
**CONCLUSION:** These themes allow us to better understand how women with chronic medical conditions think about reproductive health planning. Future unintended pregnancy and preconception health interventions for women with chronic conditions should consider