

defined as having a baby with birth weight  $\geq 4000$  g or 8 lb or 13 oz, ICD-9 or ICD-10 code for GDM during pregnancy or at delivery, or an oral glucose tolerance test (oGTT) 12–16 weeks before delivery with 2 or more abnormal results by Carpenter and Coustan criteria. We anticipate that our final GDM data set will include 2000–3000 individuals. We will then calculate the percentage of individuals receiving recommended screening tests at 6–12 weeks (fasting glucose or 2 h oGTT) and 1–3 years postpartum (fasting glucose, 2 h oGTT, HbA1C). We will use multivariable regression techniques to identify risk factors for lack of screening. We will be able to incorporate predictors not previously evaluated including distance from home to health center, access to public transport, specialty and training of the patient's providers, pregnancy weight gain, postpartum appointment time of day, and number of various types of office visits. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The creation of a linked data set of pregnancies complicated by GDM in women receiving care in FQHCs in Missouri is the first step toward better characterizing follow-up diabetes screening rates in this population and understanding patient, provider, and healthcare system variables that affect postpartum screening. The ultimate goal is to translate evidence-based patient-centered sustainable interventions into practice for low-income women with a history of GDM and improve population outcomes with the ability to track progress prospectively over time.

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### Decreasing loss to follow up after surgery for meningioma

Whitney Muhlestein, Alice Song, David G. Schlundt and  
Lola B. Chambless

**OBJECTIVES/SPECIFIC AIMS:** "Loss to follow up" is a common phenomenon and challenge in clinical medicine. Missed appointments are a well-documented source of waste in the health care system, and can lead to strained patient-physician relationships and inferior quality of care. Meningiomas are relatively common, benign tumors that arise from the dural coverings of the brain. Although complete surgical resection is considered curative, surgically excised meningiomas have a well-documented propensity to recur, necessitating continued imaging surveillance of postresection patients. A recent retrospective study at our institute demonstrated that 20% of postresection patients fail to return for follow up within a year of their surgery. Although social determinants of health have been associated with failure to follow up in this population, there has been no research identifying patient-reported barriers that result in loss to follow up in this patient population. The purpose of this study is to identify specific barriers that prevent patients from returning for surveillance. **METHODS/STUDY POPULATION:** We used an IRB approved, prospective brain tumor clinical database to identify patients who underwent surgical resection of intracranial meningioma at our institution between 2001 and 2013. "Loss to follow up" was defined as failure to attend follow-up appointments with neurosurgery, radiation oncology, or neuro-oncology within a year of the most recent assigned follow-up interval, as recorded in the electronic medical record. Structured interviews were conducted with patients who met study criteria and specific barriers to follow-up were elicited, transcribed, and coded. In 2 cases, a primary caregiver participated in all or portions of the interview with the patient. A general assessment of patient knowledge about meningioma and a screening for basic health literacy were also conducted. **RESULTS/ANTICIPATED RESULTS:** There were 80 patients in the brain tumor clinical database met chart review criteria for inclusion in the study. A total of 9 structured interviews were conducted; 1 interview was excluded from analysis for failure to meet study criteria. In total, 24 unique obstacles to follow up were recorded. These were stratified and grouped into 4 broad categories: 2 of 8 (25%) patients identified environmental factors, including distance to appointment and challenges with insurance coverage as barriers to follow up; 2 patients (25%) identified psychosocial factors, including poor communication with and distrust of their neurosurgeon as barriers to follow up; 2 (25%) patients identified health factors, including poor health and old age, as barriers to follow up; 6 patients identified healthcare systems factors as barriers to follow up, with 6 patients (75%) reporting seeing a non-specialist for follow up after surgery and 4 patients (50%) reporting not being told by their neurosurgeon that they would need continued follow up. Of those patients seen by non-specialists, only 1 reported any recent brain imaging by those providers. All patients had limited to no prior knowledge of meningiomas before their diagnosis. Four (50%) patients reported satisfaction with the level education about meningiomas they received from their physician. Of these patients, 3 (75%) correctly reported that meningiomas may recur following surgery. Of the patients who did not report satisfaction with physician counseling, 3 (75%) did not realize that meningiomas can recur. **DISCUSSION/**

**SIGNIFICANCE OF IMPACT:** Healthcare system factors, including uncoordinated transition of postoperative care to non-neurosurgeons and uncertain postoperative surveillance schedules, represent that most common patient-identified barriers to follow up after meningioma resection. Improving transition of care from specialists to non-specialists, including designation of appropriate imaging surveillance schedules, as well as improving communication between specialists and patients about the need for continued follow up, represent clear points for intervention that could improve care for this patient population. In addition, consistent and clear counseling about meningioma and its disease course may reduce loss to follow up following meningioma resection. It is important to note, however, that the small sample size represents a significant limitation of the study.

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### Incidence and predictors of noncompliance with evidence-based guidelines for early stage breast cancers using the National Cancer Data Base

Albert Liao, Grant W. Carlson, John William Eley and  
Theresa W. Gillespie

**OBJECTIVES/SPECIFIC AIMS:** Evidence-based guideline-concordant care leads to better outcomes in patients with early stage breast cancer, including survival. However, previous studies of guideline compliance have been limited by small study sample sizes, localized geography, unknown causal factors, and lack of diverse population. We use a national database to assess socio-economic, clinical, and facility factors that impact treatment compliance with evidence-based guidelines from the American Society of Clinical Oncology (ASCO) and the National Comprehensive Cancer Network (NCCN). **METHODS/STUDY POPULATION:** This is a retrospective cohort study of the National Cancer Data Base Participant User File Breast 2014, which captures ~70%–80% of all newly diagnosed cancer cases in the United States. Female patients who were diagnosed with early stage breast adenocarcinoma (T0, T1, T1A, T1B, 2, 2A, or T2N1) from 2004 to 2014 were eligible for this study. **RESULTS/ANTICIPATED RESULTS:** A total of 807,314 patients were included in this study. Evidence-based guidelines examined with associated compliance rates include surgery completion (79.3% overall compliance), breast conserving surgery Versus mastectomy (88.05% vs. 11.95%, respectively), radiation after breast conserving surgery (77.5% overall compliance), HER2 testing (88.6% overall compliance), estrogen/progesterone receptor (ER/PR) testing (96.3% overall compliance), hormone treatment for positive ER/PR breast cancer (80.2% overall compliance), and sentinel lymph node biopsy completion (67.5% overall compliance). Univariate association between these guidelines and covariates such as facility type, facility location, age, race, insurance status, median income quartiles, achievement of high school degree, urban Versus rural, Charlson-Deyo score, year of diagnosis, and overall survival were assessed. Logistic regression analysis will be used to determine multivariate relationships between these characteristics and the probability that a patient will be compliant to guideline regimen. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The results of this study will help identify socio-economic, clinical, and facility factors that influence guideline-concordant care and subsequent critical outcomes for patients with early stage breast cancer. Lack of guideline concordant care for specific stages of cancer or treatment modalities will point to a need for tailored interventions to enhance compliance. A prediction model will help identify the most important predictors of noncompliance in breast cancer treatment so noncompliance can be prevented in at-risk populations.

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### Brain thermometry to detect neuroinflammation in traumatic brain injury

Kelsey Campbell, Joanne C. Lin, Robert C. Brunner,  
Thomas A. Novack and Jarred W. Younger

**OBJECTIVES/SPECIFIC AIMS:** In this pilot study, we are testing a new approach for detecting neuroinflammation in individuals who have sustained a traumatic brain injury (TBI). We hypothesize that many long-term adverse consequences of TBI are driven by abnormal inflammatory processes in the brain that occur secondary to the original neural injury. This inflammation can spread well beyond the damaged tissue and cause profound fatigue, widespread pain, cognitive impairment, and depressed mood. **METHODS/STUDY POPULATION:** Using a technique based on magnetic resonance spectroscopy, we can obtain precise and accurate temperature measurements throughout the human brain, which may serve as a proxy for neuroinflammation. In this study, we examine 20 men who have sustained a moderate-to-severe TBI and 10 age-