Introduction
Skull base meningiomas are challenging tumors, and while much is known about outcomes of primary treatment, little is known about outcomes following reoperation after recurrence.

Methods
A retrospective review of 2,120 patients who underwent resection of meningioma from 1985-2015 meningiomas was conducted. Demographic data, presenting symptoms, surgical management, outcomes and complications data were collected. Kaplan-Meier analysis was used to evaluate survival and logistic regression was used to evaluate for risk factors associated with complications after reoperation.

Results
Seventy-eight patients underwent 100 reoperations for recurrent skull base meningioma. Median follow up was 8.5 years. Median time from initial resection to first reoperation was 4.4 years and 4.1 years from first to second reoperation. Seventy-two percent of tumors were WHO Grade I, 21% were WHO Grade II, and 7% were WHO Grade III tumors. The sphenoid wing was the most common location (31%), followed by middle fossa (18%), olfactory groove (12%), cerebellopontine angle (11%), tuberculum (11%), and other (17%). Forty-four tumors were greater than 3 cm in maximum diameter at the first reoperation. There were 65 complications in 30 patients (38%). Nineteen of 65 complications required surgical intervention (29%). Surgical complications included hydrocephalus (12), cerebral spinal fluid leak/pseudomeningocele (11), wound infection (9), post-op hematoma (4), venous infarct (1) and pneumocephalus (1). Post-operative neurological deficits included new or worsened cranial nerve deficits (16) and hemiparesis (3). Logistic regression identified tumor size greater than 3 cm as a significant risk factor for complication (p = 0.04). Tumor location in the middle fossa or cerebellopontine angle trended

Learning Objectives
By the conclusion of this session, participants should be able to discuss, 1) the importance of reoperation in providing long-term survival for patients with recurrent skull base meningiomas, 2) understand the high rate of complications and risks associated with reoperation for these tumors, 3) be able to effectively counsel patients on options for management when tumors recur.

References