stage IV disease—of these only 216 (1.2%) had BMs at the time of diagnosis. Patients presenting with bone, liver, or lung metastases were more likely to present with synchronous BMs. Brain involvement demonstrated significantly more frequently at presentation (25% vs. 11%), M. Alexander, Alex Jellinek, and Jordan Wishart.

Compared to non-BM stage IV disease, UBM patients were more likely to have surgery for metastatic disease and receive radiotherapy (p<0.001); but were less likely to have primary resection of their tumors than BMs patients (p<0.001). In multivariable analysis of stage IV uterine cervical BMs, demonstrated significantly worse OS (HR 1.43, 95% CI: 1.20–1.72, p<0.001). In our institutional data, 10 uterine cervical patients developed BMs; of which 7 were male, median age and KPS at diagnosis were 64-9yo (IQR 56-92) and 85 (IQR 75–100). Four patients had symptomatic BMs; the median number of BM lesions was 2 (IQR 1–2), with a median size of 2.6cm (IQR 1.6–3.3). All 10 underwent GTR, 3 also with SRS and 7 with WBRT, associated with a median OS of 16.5mos. CONCLUSION: Our results confirm the rarity of UBM and suggest that BM screening may only be indicated in stage IV patients with neurological symptoms. Systemic therapies demonstrate improved OS in these patients.

OTHR-05. THE ABILITY TO MAKE INFORMED TREATMENT DECISIONS IS COMPROMISED IN ADULTS WITH ADVANCED STAGE CANCER
Kirsten Treibel, Kyler Mulhauser, Meredith Gammon, Adam Gerstenecker, L. Burr Nabors, and John Fwach

OBJECTIVE: To investigate medical decision-making capacity (MDC) in patients with advanced stage cancer. METHODS: Participants were 113 newly diagnosed or recurrent solid tumors with brain metastases. The MDC was assessed using the Capacity to Consent to Treatment Instrument (CCTI). Vignette B and its four clinically relevant consent standards (expressing a treatment choice, appreciation, reasoning, and understanding). Capacity impairment ratings (no impairment, mild/moderate impairment, and severe impairment) on the consent standards were also assigned to each participant using cutoff scores derived statistically from the performance of the control group. RESULTS: Both of the metastatic cancer groups (with and without brain metastasis) performed significantly below controls on consent standards of understanding and reasoning. The brain metastasis group performed below the non-metastatic cancer group on understanding. Capacity compromise was defined as performance ≤1.5 standard deviations (SD) below the control group mean. Using this definition, approximately 65% of the participants with brain metastasis and 51% of participants with metastatic cancer without brain metastases were impaired on at least one MDC standard. CONCLUSION: Over half of participants with metastatic cancer regardless of whether they have brain disease have reduced capacity to make treatment decisions. The finding of impaired MDC in patients without brain metastasis is surprising and suggests this group likely exhibits cognitive deficits that impact their ability to understand and reason about different treatment options. The reasons underlying this impairment will be investigated. This highlights the importance of routine clinical assessment of MDC in all patients with advanced cancer when important treatment decisions are being discussed. These results also indicate a need for the development and investigation of interventions to support or improve MDC in this patient population.

OTHR-06. ANALYSIS OF GENOMIC ALTERATIONS IN 154 BRAIN METASTASES
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INTRODUCTION: The incidence of brain metastases (BM) among Canadian cancer patients is unknown. We aimed to estimate the incidence proportion (IP) of BM at the time of all cancer diagnoses and during follow-up of cancer patients with the top six primary tumors that are most likely to metastasize to the brain. METHODS: Data on BM at diagnosis from 2010–2015 was obtained from the Canadian Cancer Registry (CCR). Site-specific IPs of BM was estimated for patients from provincial registries that achieved ≥90% complete data. The remaining IP was estimated using the literature. RESULTS: We identified 1,105,905 cancer cases in the CCR from 2010–2015, of which 51,950 (4.7%) were from the six primaries. The annual average number of patients with BM at diagnosis from all cancer sites was approximately 2,800 and was highest for lung cancer (2,400). The site-specific IPs of BM at diagnosis were: lung (9.6%; 95% CI: 9.3–10.0%), esophageal (2%; 95% CI: 1.5–2.7%), kidney/renal pelvis (1.3%; 95% CI: 1.0–1.5%), skin melanoma (1.1%; 95% CI: 0.9–1.3%), colorectal (0.3%; 95% CI: 0.2–0.5%), and breast (0.2%; 95% CI: 0.2–0.3%). Using clinical and population data from the literature, we estimated that nearly 7,400 lifetime BM cases occur annually for these six primaries. CONCLUSIONS: Each year in Canada, approximately 2,800 BMs from all primary cancers are found at the time of diagnosis and approximately 7,400 lifetime BM occur annually from the six selected primary tumours.

OTHR-08. PREDICTION OF RISK OF CENTRAL NERVOUS SYSTEM METASTASIS FOR AJCC STAGE III MELANOMA PATIENTS
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Among common solid tumors, melanoma has the highest risk of CNS metastasis. Improved understanding of the incidence, risk factors, and timing of CNS metastasis is needed to inform surveillance strategies for at-risk patients. Clinical data were extracted from two institutions for AJCC 8th edition stage III melanoma patients, diagnosed from 1998–2014 who had negative baseline CNS imaging within 4 months of diagnosis. The cumulative incidence of CNS metastasis was calculated in the presence of the competing risk of death from stage III presentation, and benchmark time points 1-, 2-, and 5-years post-diagnosis. The cohort (N=1,918) consisted of patients from major melanoma centers in the US (50.6%) and Australia (49.4%). The first site of distant metastasis was CNS only (15.5%) for patients who developed distant metastases (N=708) had CNS involvement at first diagnosis of stage IV disease. Cumulative incidence of CNS metastasis from stage III diagnosis was 3.7% (95% Confidence Interval (CI): 2.9–4.6) at 1-year; 9.6% (95% CI: 8.3–11.0) at 2-years and 15.9% (95% CI: 14.2–17.7) at 5-years. Conditional analyses showed that only high primary tumor mitotic rate (>9 per mm2) was significantly higher for males; younger patients; increasing AJCC stage group; scalp primary tumor site, acral melanoma subtype, and increased primary tumor mitotic rate. Conditional analyses showed that outcomes were impacted by total tumor burden (total >5% vs mm2) was significantly associated with risk of subsequent CNS metastasis among patients who survived without CNS recurrence 1-, 2-, and 5-years after the diagnosis of stage III disease. Similar rates of CNS metastasis were achieved between these two, geographic subsets of stage III melanoma patient cohorts. These results provide a framework for developing evidence-based surveillance strategies and for evaluating the impact of contemporary adjuvant therapies on the risk of melanoma CNS metastasis.