Introduction:
The objective was to examine VTE prophylaxis practices among neurocritical care patients (NCC) and evaluate concordance with Neurocritical Care Society guidelines. Venous thromboembolism (VTE) is a leading cause of preventable, in-hospital deaths in high income countries, and patients admitted to ICUs are at increased risk. Effective and efficient strategies to prevent VTE exist; however, NCC patients present unique challenges due to competing risks of bleeding.

Methods:
Population-based administrative data and electronic medical records were used to retrospectively audit VTE prophylaxis practices among NCC patients admitted to 10 adult medical-surgical/neurological ICUs in Alberta, Canada in 2014. NCC patients were identified using admission diagnosis. Data included: demographic characteristics, form of VTE prophylaxis, contraindication for pharmacological VTE prophylaxis (platelet count <50 x10^9/L, INR ≥2, PTT ≥55 sec, diagnosis with high-risk of bleeding, documented therapeutic anti-coagulation) and outcomes of care. Guideline concordance was evaluated.

Results:
Of 7,669 admissions, 16.5% were NCC patients. Typically, NCC patients were 56 years-old, male, with no comorbidities (52.3%), and an APACHE II score of 17. Most NCC patients had a contraindication for pharmacological VTE prophylaxis (65.4%). Overall, NCC patients were more likely to receive mechanical (90.3% ICU days) than pharmacological VTE prophylaxis (74.1% ICU days), however pharmacologic was more likely among younger patients with lower APACHE II scores. Guideline concordant care varied by recommendation; lower for pharmacological and higher for mechanical VTE prophylaxis.

Conclusion:
NCC patients uncommonly receive guideline concordant pharmacological VTE prophylaxis. Collectively, our findings suggest that current VTE prophylaxis prescribing practices may reflect uncertainty around risks associated with VTE prophylaxis among NCC patients.