Introduction:
Anemia is prevalent in critically ill traumatic brain injury (TBI) patients and red blood cell (RBC) transfusions are often required. Over the years, restrictive transfusion strategies have been advocated in the general critically ill population. However, considerable uncertainty exists regarding optimal transfusion thresholds in critically ill TBI patients due to the susceptibility of the injured brain to hypoxemic damages.

Methods:
We conducted an electronic self-administered survey targeting all intensivists and neurosurgeons from Canada, Australia and the United Kingdom working caring for TBI patients. The questionnaire was developed using a structured process of domains/items generation and reduction with a panel of experts. It was validated for clinical sensibility, reliability and content validity.

Results:
The response rate was 28.6% (217/760). When presented with a scenario of a young patient with severe TBI, a wide range of transfusion practices was noted among respondents, with 47% favoring RBC transfusion at a hemoglobin level of 7g/dL or less in the acute phase of care, while 73% would use this trigger in the plateau phase. Multiple trauma, neuromonitoring data, hemorrhagic shock and planned surgeries were the most important factors thought to influence the need for transfusion. The level of evidence was the main reason mentioned to explain the uncertainty regarding RBC transfusion strategies.

Conclusion:
In critically ill TBI patients, transfusion practices and hemoglobin thresholds for transfusion are said to be influenced by patients’ characteristics and the use of neuromonitoring in critical care physicians and neurosurgeons from Canada, Australia and the UK. Equipoise regarding optimal transfusion strategy is manifest, mainly attributed to lack of clear evidences and clinical guidelines.