Purpose
We want to bring emphasis to the importance of fluid resuscitation to reduce stroke damage. Through this effort, we expect to see a reduction in delay in fluid resuscitation and administration with stroke patients in the Emergency Department. Research shows a link between dehydration and increased cerebral damage related to stroke.

PICO Question
Will the initiation of early fluid resuscitation in stroke patients reduce cerebral damage and decrease the long-term deficits?

Summary of Evidence
- Of 19,503 patients, 2,591 patients were dehydrated. Dehydration after stroke increases the risk of venous thromboembolisms and is associated with poor outcomes. (Rowat, et. Al., 2011)
- Stroke condition worsened or stayed the same in 42% of dehydrated patients compared to only 17% of hydrated patients. (Sullivan, 2015)
- Dehydrated patients are four times more likely to have worse outcome than people that are hydrated. (Salamon, 2015).
- NIHSS scores showed improvement in 83% of patients without dehydration and 58% of those with dehydration. (Sullivan, 2015)
- Dehydration causes lower fluid volume of blood resulting in an increased prothrombotic state which increases stress on the vessels and resulting in further clotting. (Kelly et. Al, 2004)
- Dehydration decreases cerebral blood flow and perfusion. (American Heart Association, 2015)
- Early fluid resuscitation is an inexpensive, safe, and globally available technique to provide better outcomes in acute stroke patients. (Jagt, 2016)

Recommendations
- Revision of brain attack packet to include early fluid resuscitation.
- Replacement IV fluid should be isotonic fluids without dextrose (Filho, et. Al, 2017)
- Continue to monitor patients blood osmolality via routine lab work.
- Revision of brain attack packet to include repeat NIHSS score 15 minutes after initial assessment in conjunction with repeat neuro checks.

Conclusion
- Early fluid resuscitation improves outcome in stroke patients by reducing cerebral damage resulting in fewer long term deficits.
- Dehydration and increased osmolality should be managed for stroke patients.
- Isotonic fluids should be used when resuscitating in the acute phase. Dextrose solution should be avoided.
- Patient’s hydration status should be evaluated upon admission.

References available upon request.