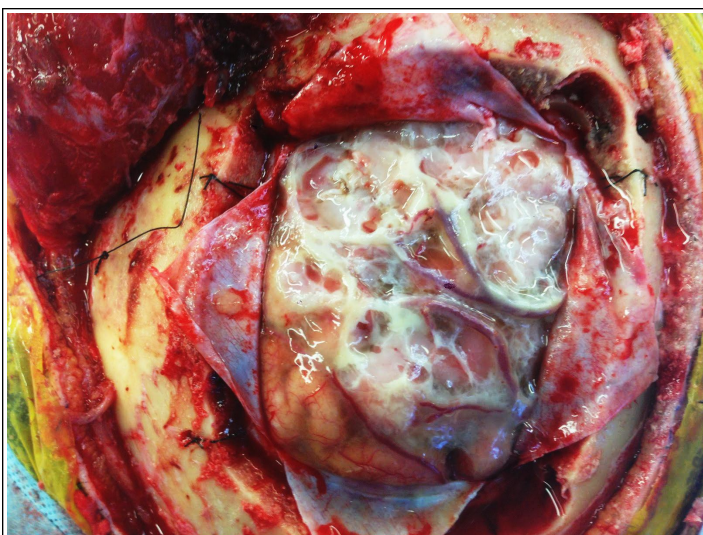


Introduction

External ventricular drains (EVD) are a common neurosurgical procedure performed that provides benefit to the patient, but carries the risk of infection. While studying the effect of improvements in EVD procedures is challenging, studies have demonstrated reductions in infection rates with implementation of care bundles. Measuring compliance with new protocols can also be challenging, but electronic databases can aid in compliance and ease tracking. Additionally, these databases offer the ability to recruit multiple institutions and pool data to evaluate variation in technique on infection rate.



Empyema from EVD infection.

Methods

A literature search was used to find existing EVD protocols and related techniques to improve infections. The literature review was used to establish an evidenced-based protocol. A REDcap database was made to reflect essential steps within the protocol, along with easy access via a Quick Response code. An IRB was approved to track retrospective and prospective EVD infection rates. Multicenter implementation took place.

REDcap EVD Insertion Form

EVD insertion form

Please complete the survey below.

Thank you!

MRN
* must provide value

Last Name of Patient
* must provide value

Hospital location
* must provide value

Location of placement
* must provide value

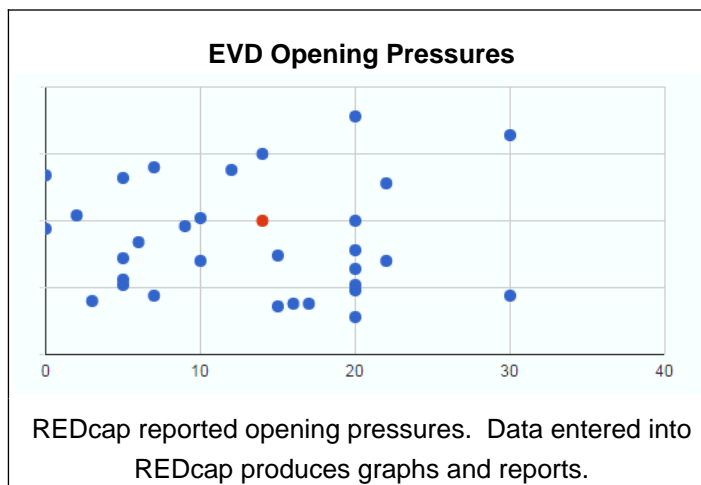
UMMC
HCMC
Children's

ICU
OR
Other

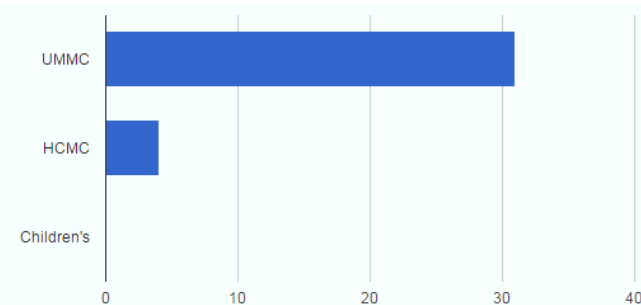
REDcap form accessible from any computer that is filled out by nurse during EVD placement.

Results

Fourteen articles were reviewed and used to create a protocol. A REDcap database was created and accessible from any location for secure data entry. Comprehensive implementation at the home institution was completed with presentations and resident education materials. An EVD committee is being formed to track the infection rate. Transitioning the database to be used at other institutions is underway by establishing a recruitment package, which includes template IRB, REDcap database, workflow, and sustainability measures.



Number of EVDs Placed at Various Institutions



Since implementation, EVDs placed as tracked using REDcap produced reports. (UMMC rollout 03/2015, HCMC rollout 07/2015).

Conclusions

There is sufficient evidence in the literature to design a comprehensive EVD protocol. Through planning and available technology, it is possible to develop a novel method of pooling EVD data from multiple institutions in order to test the efficacy of single components of a protocol while creating new methodology for tracking EVD infection rates.

Learning Objectives

- 1) Realize the importance of protocol implementation to improve infection rate in EVD procedures.
- 2) Acknowledge electronic databases provide up to date information and allow easy analysis of flaws within the protocol.
- 3) Multicenter approach provides increased data to support protocol implementation and can be easily transferred to various centers.