

## What the HECK? Developing a Hemorrhaging Extremity Control Kit to Improve ED Care (HECKit)

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### Purpose

The purpose of the project was to review current practice of extremity hemorrhage control in the Emergency Department of VCU Health, a Level 1 ACS verified Trauma Center.

### Background

- Tourniquets are a gold standard treatment for patients with extremity hemorrhage.
- In our Emergency Department (ED), staff have witnessed tourniquet failure due to slippage and prolonged time to tourniquet placement.
- Based on staff concerns, we conducted a comprehensive literature review using keywords: tourniquet and extremity hemorrhage. 10 articles met our inclusion criteria.
- Based on the evidence, we determined that a readily available kit of reliable supplies for rapid hemorrhage control would be the key to improved patient outcomes.
- We developed a "grab and go" Hemorrhaging Extremity Control Kit (HECKit).



### Methods

#### Product Review of Tourniquets

- Extensive product review of the top five tourniquets on the market with an informal application time trial was conducted with our medic staff.

#### Implementation of the HECKit

- An interdisciplinary in-service plan was developed and implemented for Emergency Medicine staff in collaboration with Trauma.

#### Evaluation of the HECKit

- A convenience sample of cases requiring hemorrhage control with a tourniquet application were reviewed pre and post implementation. Tourniquet time to application was reduced.

#### Post Implementation Staff Satisfaction Survey

- A convenience sample survey of 25 interdisciplinary ED staff was conducted.

### Results



#### STAFF SATISFACTION

>90% of staff indicated the HECKit implementation was successful and a beneficial addition.

#### STAFF FEEDBACK

Establish a process to restock

#### TOURNIQUET SELECTION

Based on the evidence, the determination was made to change from the SoftT tourniquet to the C.A.T. tourniquet.



### Discussion

The HECKit has:

- been successfully translated into practice, used at the site of a mass casualty incident, and has proven to be as functionally important to ED staff as other established kits.
- provided a reliable and easily recognizable box from which all emergent supplies for a hemorrhaging extremity can be extracted.
- improved patient outcomes by:
  - decreasing time to tourniquet application,
  - improving tourniquet function, and application by having the most reliable product available
  - improving hemorrhage control.
- Our organization is in the process of adopting the HECKit by placing the kit alongside each defibrillator and AED in house.

### Conclusions

- The recommendation is that trauma centers and EMS agencies adopt the HECKit principle, making all supplies necessary for extremity hemorrhage control immediately available.
- A future direction is to collaborate with manufacturers to develop commercially available kits for national distribution.

\*References available upon request.

