The Impact of a Displayed Checklist on Simulated Pediatric Trauma Resuscitations

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Disclosures

- There are no financial disclosures
Introduction

- Pediatric trauma resuscitations are fast paced and often chaotic
- Multiple team members involved from varying disciplines
- Communication may be effected and result in missed information
- May lead to compromise in patient care and medical error
1978 the Advanced Trauma Life Support (ATLS) protocol was developed.

Adherence to guidelines has been shown to decrease morbidity and mortality.

Despite guidelines there are still omissions:
- May result in patient injury
- Poor outcomes
Checklists

- Role of checklists
  - Improve communication
  - Improve completion of tasks
- Recent studies regarding handheld checklist for trauma resuscitations
  - Improve adherence to guidelines
  - Reduce omissions
  - Improve time to completion of tasks
Objective

- The primary purpose of our study is to determine if a displayed checklist improves the time to completion of tasks during pediatric trauma resuscitations.
- Secondary purpose is to determine if a displayed checklist improves the absolute completion of tasks of the primary and secondary survey.
- Tertiary purpose is to determine if a displayed checklist decreases effect on workload.
Methods

- Scenarios were created following ATLS core competencies
- Study broken into three arms
  - One without a checklist
  - One with the team leader using a handheld checklist
  - One with the checklist displayed on a monitor visible to all team members
### Pre-arrival Plan
- **Check or Prepare:**
  - PPE
  - Oxygen
  - Suction
  - Bag and Mask
  - Intubation Tray
  - Intubation Medications
  - Defibrillator
  - CPR Board
  - Consider Ordering Blood

**Assign Team Roles:**
- Airway
- IV/IO Access
- Primary Survey
- Team Leadership
- Brief Team on Incoming Patient
- Est. Weight: kg

### Primary Survey
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| **A** | Confirm Airway is Protected  
Confirm C-Spine is Immobilized |
| **B** | Check Breath Sounds  
Place O2 Mask or Connecting Existing Mask to O2 |
| **C** | Check Pulses  
Establish IV/IO Access  
Consider Ordering Blood |
| **D** | State GCS (eyes, verbal, motor) |
| **E** | Completely Remove Patient’s Clothing |

**Re-Evaluate Airway**
- Evaluate Need for Intubation
- Report ET Tube Size and Depth (if applicable)
- Confirm ETCO2 Color Change (if applicable)

**Monitor**
- Confirm Heart Rate is Displayed
- Confirm Pulse Ox Waveform is Displayed

**State and Evaluate Whether WNL:**
- Heart Rate
- Respiratory Rate
- Blood Pressure
- Oxygen Saturation
- Temperature

### Secondary Survey
**Evaluate and State Finding**
- Head
- Ears
- Eyes
- Face
- Nose
- Mouth
- Neck/C-spine
- Chest
- Abdomen
- Pelvis
- Upper Extremities
- Lower Extremities
- Log Roll and Back Exam
- Perineum
- Cover with Warm Blanket

### Plan of Care
- Determine Need For
  - Laboratory Tests: Yes / No
  - X-rays: Yes / No
  - CT Scans: Yes / No
  - OR Notification: Yes / No
  - PICU Notification: Yes / No

### Departure Plan
- State Patient Destination
- Prepare Patient Destination
- Equipment
- Medications
- Identify who will Travel with Patient
Time to Completion of Surveys

- Primary Survey Completion Time (sec)
  - No Checklist
  - Paper Checklist
  - Displayed Checklist

- Secondary Survey Completion Time (sec)
  - No Checklist
  - Paper Checklist
  - Displayed Checklist
Omission of Tasks

![Box plots showing the number of tasks omitted during primary and secondary surveys for different checklist conditions.](image-url)
Conclusion

- There was no significant decrease in time to completion of tasks during the primary or secondary survey with the use of the checklist.
- There was a significant decrease in the number of tasks omitted during the primary and secondary survey with use of the displayed checklist.
References

Questions