Monday September 26th, 2016

trauma

NOUN
Injury to human tissues and organs resulting from the transfer of energy from the environment

Optimizing Tar Heel Trauma Care: The Golden Hour

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UNC HEALTH CARE

Tar Heel Trauma

Trauma is the **leading cause of death** for individuals up to the age of forty-four, costing the US an estimated **$671 billion** in healthcare costs and lost productivity.[1,2]

1. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web–based Injury Statistics Query and Reporting System (WISQARS) [online]. http://www.cdc.gov/injury/wisqars. Accessed February 17, 2014.
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) 2015 [cited 2015 01/26/15].

Sentinel Event Data
Root Causes by Event Type

2012 (N=901)		2013 (N=887)		Jan to Jun 2014 (N=394)	
Human Factors	614	Human Factors	635	Human Factors	290
Leadership	557	Communication	563	Leadership	269
Communication	532	Leadership	547	Communication	248
Assessment	482	Assessment	505	Assessment	208
Information Management	203	Information Management	155	Physical Environment	53
Physical Environment	150	Physical Environment	138	Care Planning	38
Continuum of Care	95	Care Planning	103	Information Management	36
Operative Care	93	Continuum of Care	97	Continuum of Care	33
Medication Use	91	Medication Use	77	Operative Care	29
Care Planning	81	Operative Care	76	Health information technology-related	27

The Joint Commission

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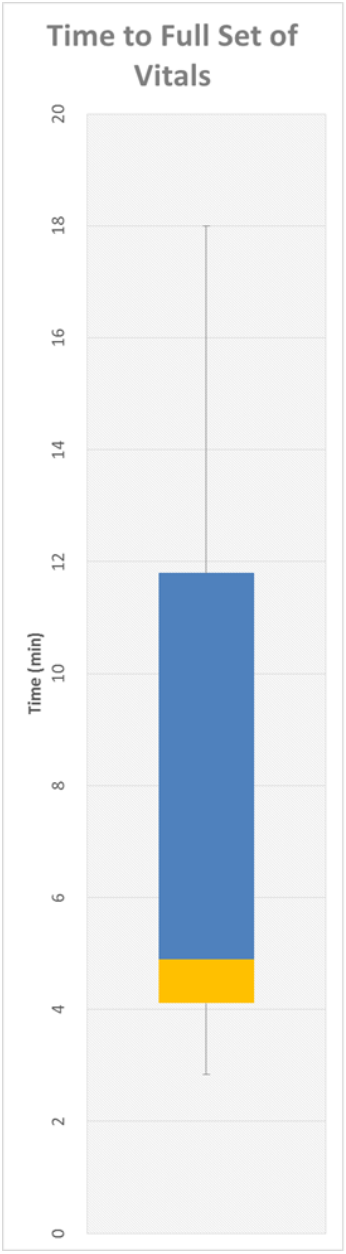

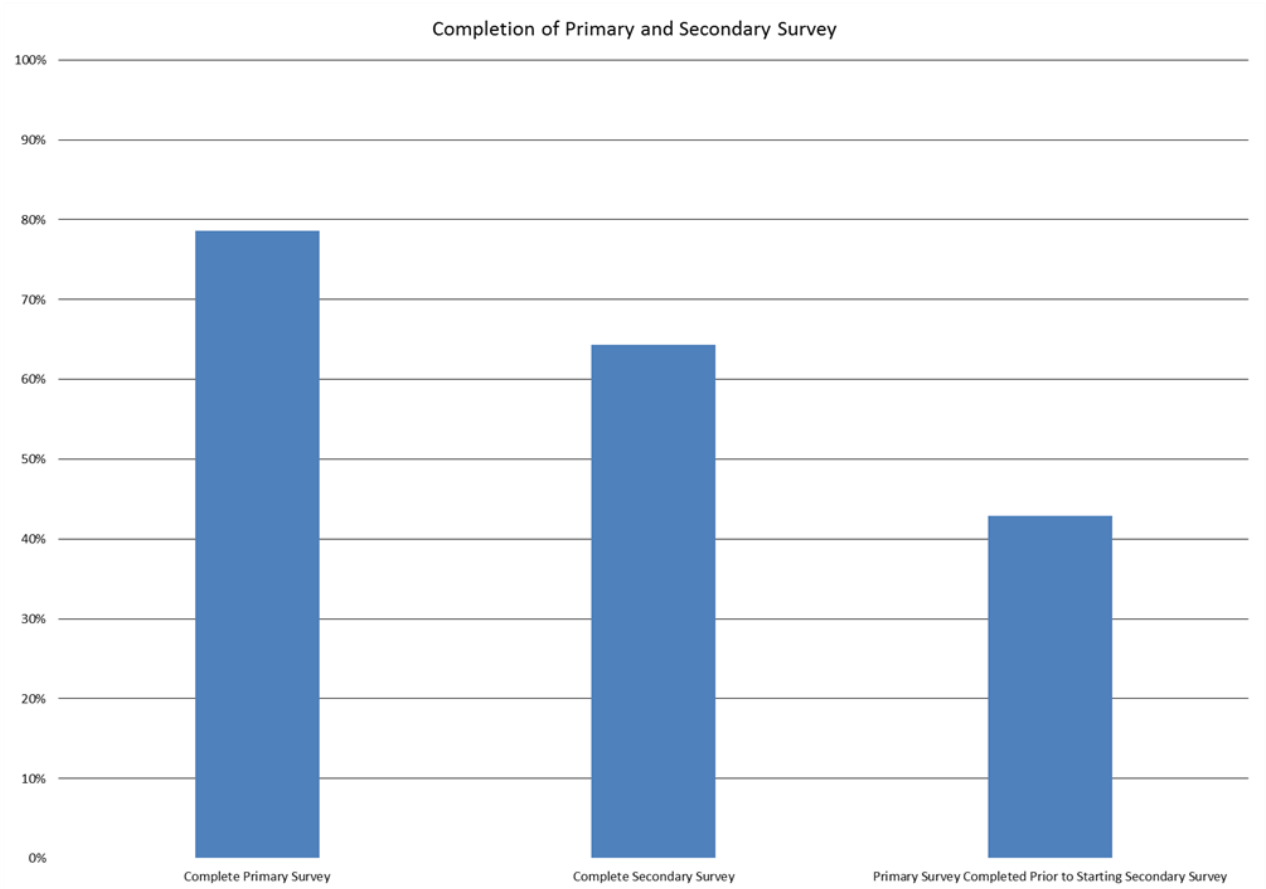

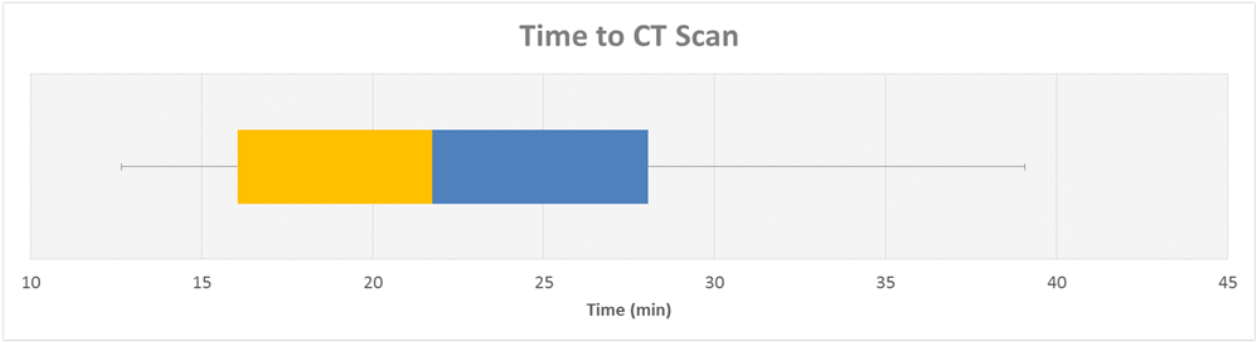

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Trauma Evaluation Tool v.1

Optimizing Tarheel Trauma: The Golden Hour and Beyond

Patient ID sticker

PATIENT NUMBER

Legend
- [U] "Unobservable" if checked
- [ ] "Yes" if checked otherwise "No"

Date: NA Time: NA

Coded by: _____

1 Trauma Bay Prep
- [ ] [U] Trauma Bay stocked?
- [ ] [U] Trauma Bay clean?

2 Trauma Team Prep
- [ ] [U] Trauma Leader relayed plan?
- [ ] [U] Trauma Team met?
- [ ] [U] Team roles clearly defined?
- [ ] [U] Trauma team recieved report?

3 Patient Arrival Time: :

4 Primary Survey
- [ ] [U] C-spine stabilized?

A
- : Airway assessed?
- or → [ ] Already intubated?
- : Time to Intubation? or [ ] N/A

B
- : Respirations assessed?

C
- : Assessed for hemorrhage?

D
- : LOC assessed?

E
- : Patient undressed?
- [ ] [U] Warming Measures provided?

Vitals
- : Time to first Blood Pressure?
- : Time to first Heart Rate?
- : Time to first Temperature?
- : Time to first Pulse Ox?

Access
- : Time to first access?
- or → [ ] First access already in place
- type → [IV] [IO] [Central]
- : Time to second access?
- or → [ ] First access already in place
- type → [IV] [IO] [Central]

5 Secondary Survey
- : Head and face assessed?
- : Neck assessed?
- : Chest wall assessed?
- [ ] [U] Chest auscultated?
- : Abdomen assessed?
- [ ] [U] Is abdomen palpated?
- : Perineum and genitals assessed?
- : All four extremities assessed?
- [ ] [U] Pulses checked in all four limbs?
- [ ] [U] Movement/Sensation assessed in limbs?
- : Thoracic and Lumbar spine assessed?
- [ ] [U] Is rectal tone assessed?

Studies
- : Time to X-Ray
- : Time to FAST Scan
- : Time to CT
- : Blood samples sent to lab?

6 Communication

Patient
- [ ] [U] Disposition in place?
- [ ] [U] Provided comfort measures?

Trauma Team
- [ ] [U] Debrief happened?
- [ ] [U] Closed-loop communication?
- [ ] [U] Followed direction of Leader?
- [ ] [U] Facilitated family presence?

Trauma Leader
- [ ] [U] Set clear expectations?
- [ ] [U] Used ATLS guidelines?
- [ ] [U] Led event?
- [ ] [U] Assigned Team tasks?

7 Notes

Write on Back →

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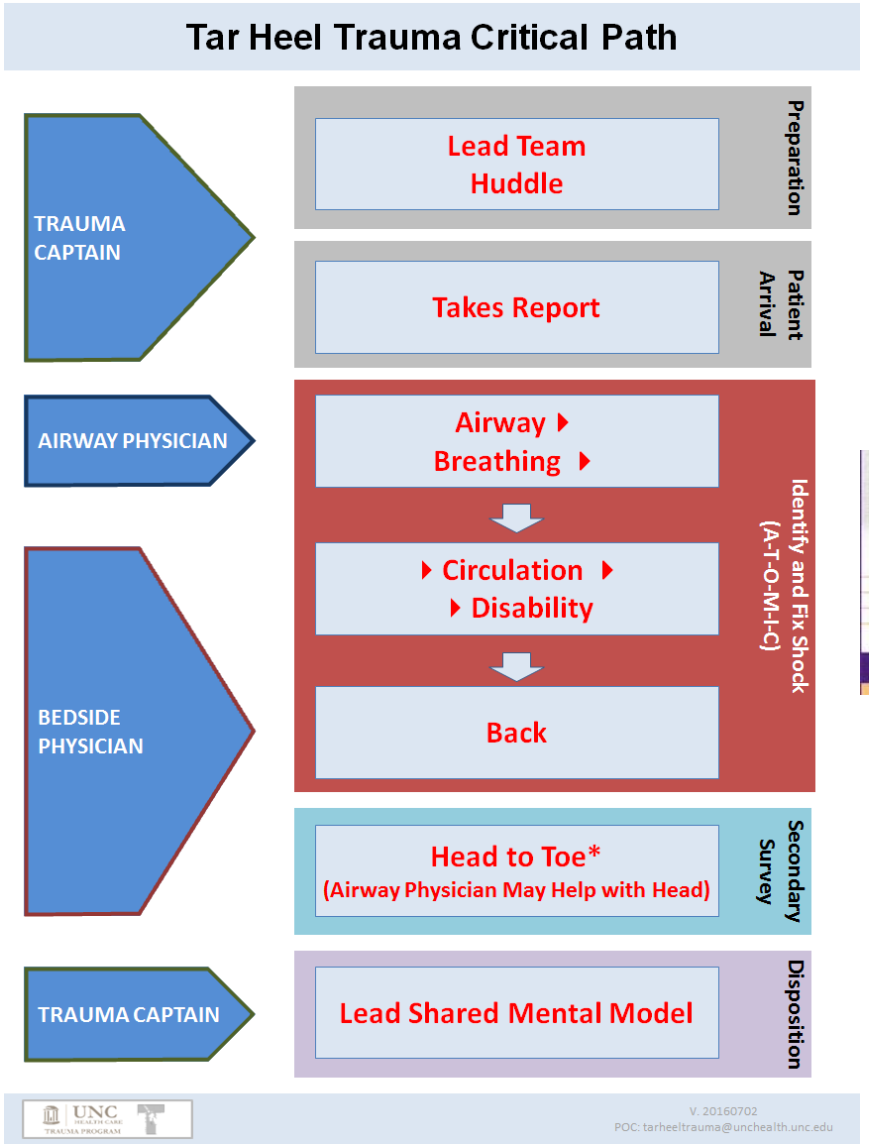
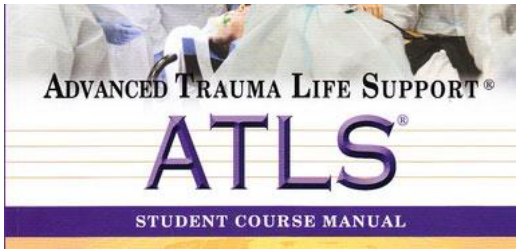
Aim: improve the consistency, efficiency and reliability of trauma resuscitations





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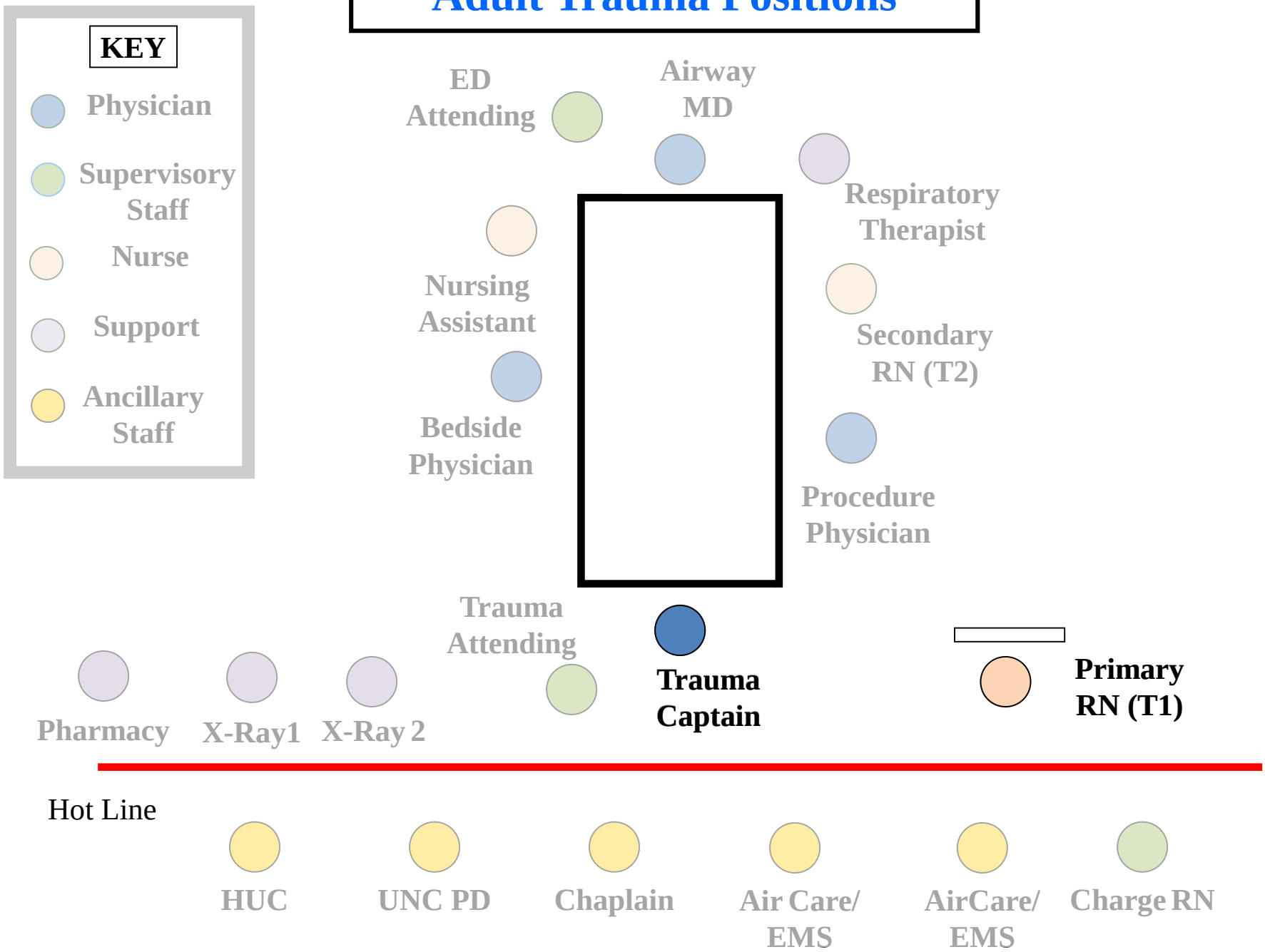
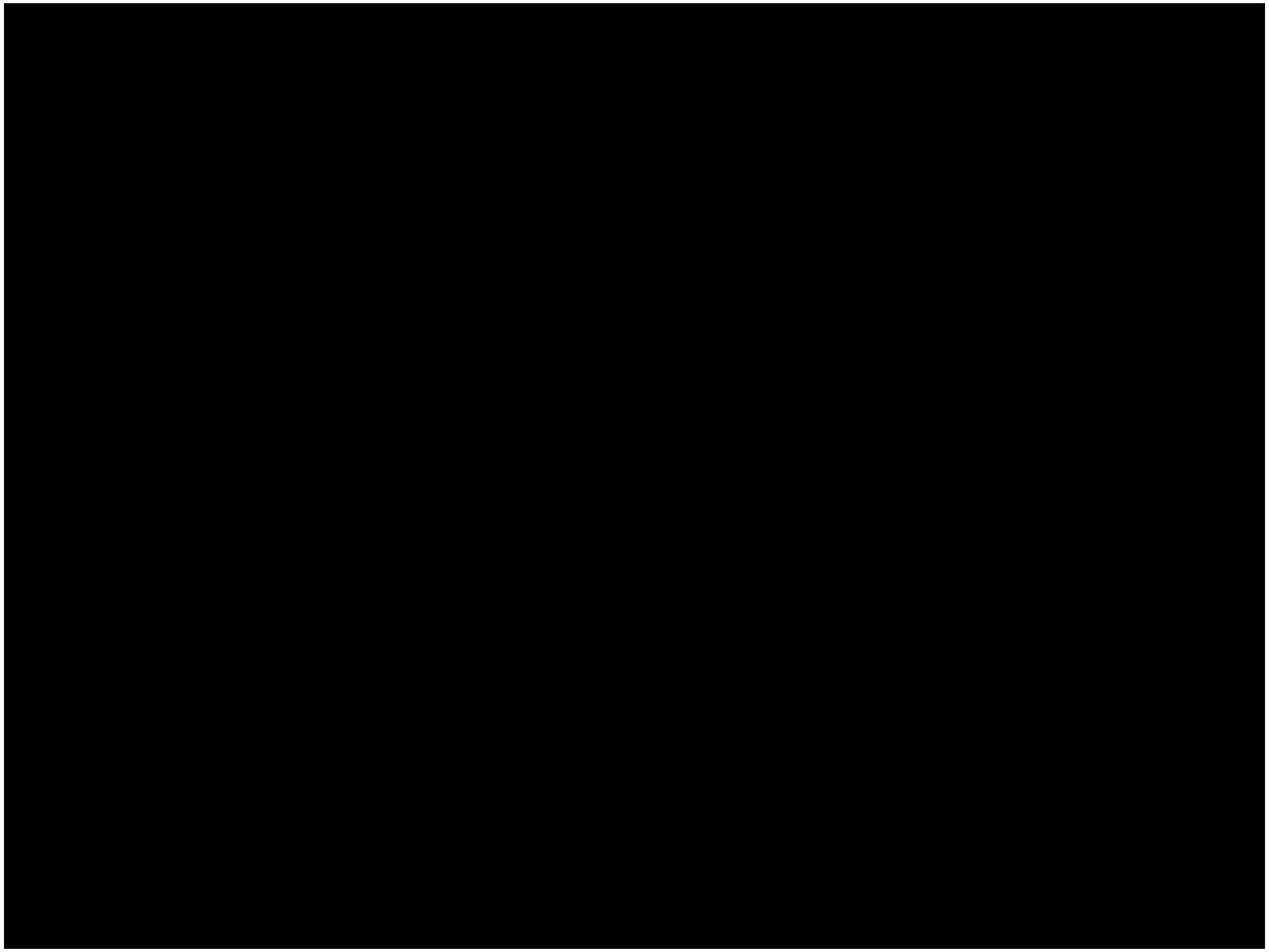
Adult Trauma Positions





Role Specific

Full Alert Trauma Drills

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Trauma fusion

"It was so cool to be included in the Trauma group and to truly see the patient's care from accident to discharge."

"I learned a lot about what each department's role is during our patient's recovery journey here at UNC. I believe we are a great team."

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Tar Heel Trauma

Trauma Manual

Policy Name	**DIGITAL RECORDINGS OF TRAUMA RESUSCITATIONS**
Policy Number	**TRAUMA 0066**
Date this Version Effective	**January 2017**
Responsible for Content	**Trauma Program/Risk Management/DOS**

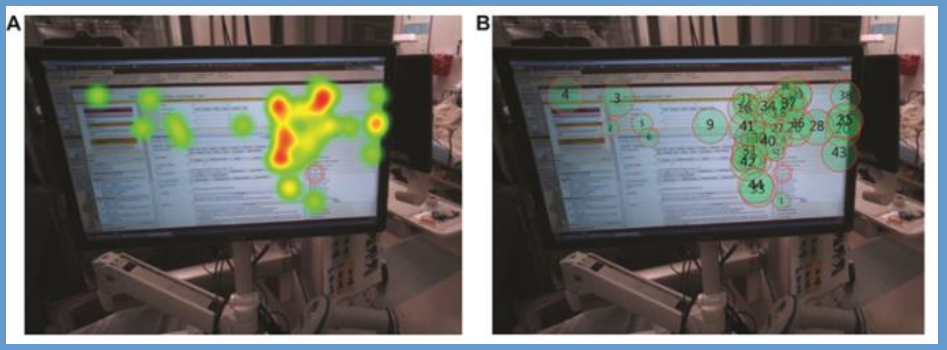
I. Description: All Adult Red and Yellow Trauma Team activations will be digitally recorded as part of the Trauma Performance Improvement Program.

II. Rationale: To facilitate Performance Improvement (PI) in the care and safety of adult multi-system injured patients by providing feedback and evaluating practice in accordance with ATLS@UNC guidelines.

III. Policy:

A. Recording of Trauma Resuscitations

1. Digital cameras (IP Fish Eye) and microphones installed in ED 1, 2 and 3 will capture all red and yellow trauma resuscitations. The system will automatically activate and record any activity occurring in those rooms. Only footage recorded during a trauma resuscitation will be reviewed; this footage will be retrieved using correspondence date and time to the trauma activation page.



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Tar Heel Trauma

Teamwork, Communication and Leadership

Establish One Leader

Treatment Leader:
"Ok Alex, I'll take it from here."

Leadership

SBARQ

Treatment Leader:
"What happened?"

Bedside Nurse (First to Arrive):
"72 y/o male found unresponsive by visitor. He came here for a urology follow-up. I found him pulseless and apnic. We need to begin full resuscitation. What else can I tell you?"

Brief

Callout / Checkback

Bedside RN:
"BP is 60/30"
Treatment Leader: *"Got it, BP 60/30"*
Or
Treatment Leader:
"Pat, please push one amp of epi"
Bedside RN:
"One amp of epi IV push"
Treatment Leader:
"That's right"

Closed-Loop Communication

Know all Roles

Treatment Leader:
"Pat, the circulation nurse is tied up with another code, you're going to have to cover her role until a replacement arrives"

Team Awareness

Keep a Wide View

Treatment Leader:
"Alex, Jamie has left to find another central line kit, would you mind placing he pads for her?"
Or
Treatment Leader:
"Francis, I'm going to need to stand Where you're at, I can't see the team from here"

Situation Monitoring

Clear, Concise, Calm, Directed

Airway Manager:
"Jessie, could you hand me another stylet please? Thanks so much."

Effective Delegation C3D

No One Functions Alone

Airway Assistant:
"I don't think that's in the trachea."
Airway Manager:
"Good call. I think you're right, would you mind auscultaring the chest while I ventilate?"

Mutual Support Assertion

Smooth is Fast

Treatment Leader:
"Nice and easy team, we're doing fine"

Energy Control

Reflect and Learn

Data Manager:
"I know we need to get back to our work, but real quick…great compressions, Jessie; Pat, make sure everyone everyone is away before defibrillating; team was very calm throughout; great job everyone"

Debrief

- **CUS**: "I'm **Concerned**...I'm **Uncomfortable**...**STOP**, this is a Safety Issue"
- **I NEED CLARITY**: Use when message is not 100% understood or received
- **2 CHALLENGE RULE**: Tactfully voice concern twice, then utilize chain of command

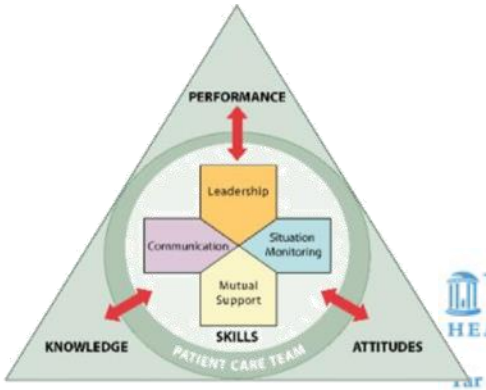
Language SPEAK UP

Each individual behaviour will improve teamwork and performance

"Perceived rudeness is the KILLER of Teamwork"

Courage is grace under pressure.

– Ernest Hemingway



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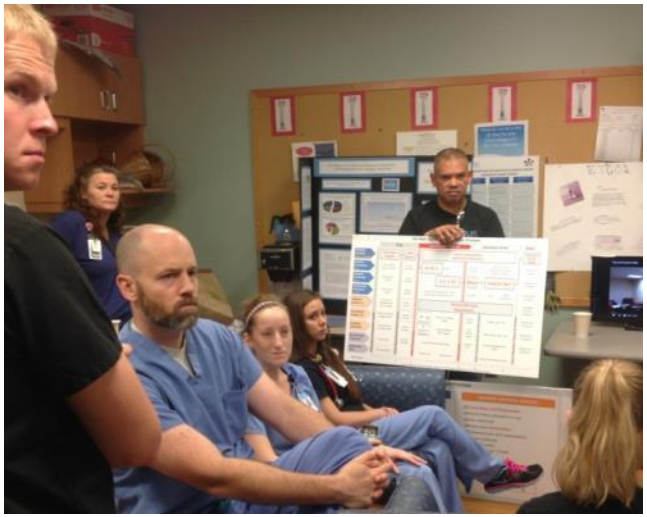
Post-sim Debriefing



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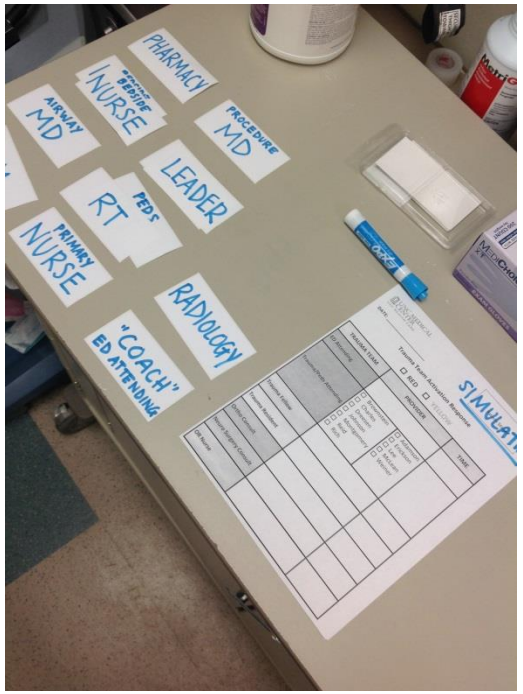
What Didn't Work?

- Adhesive role tags
- Red bouffant worn by trauma captain
- Electronic feedback system
- Role reversals
- Collaboration w/ pediatrics



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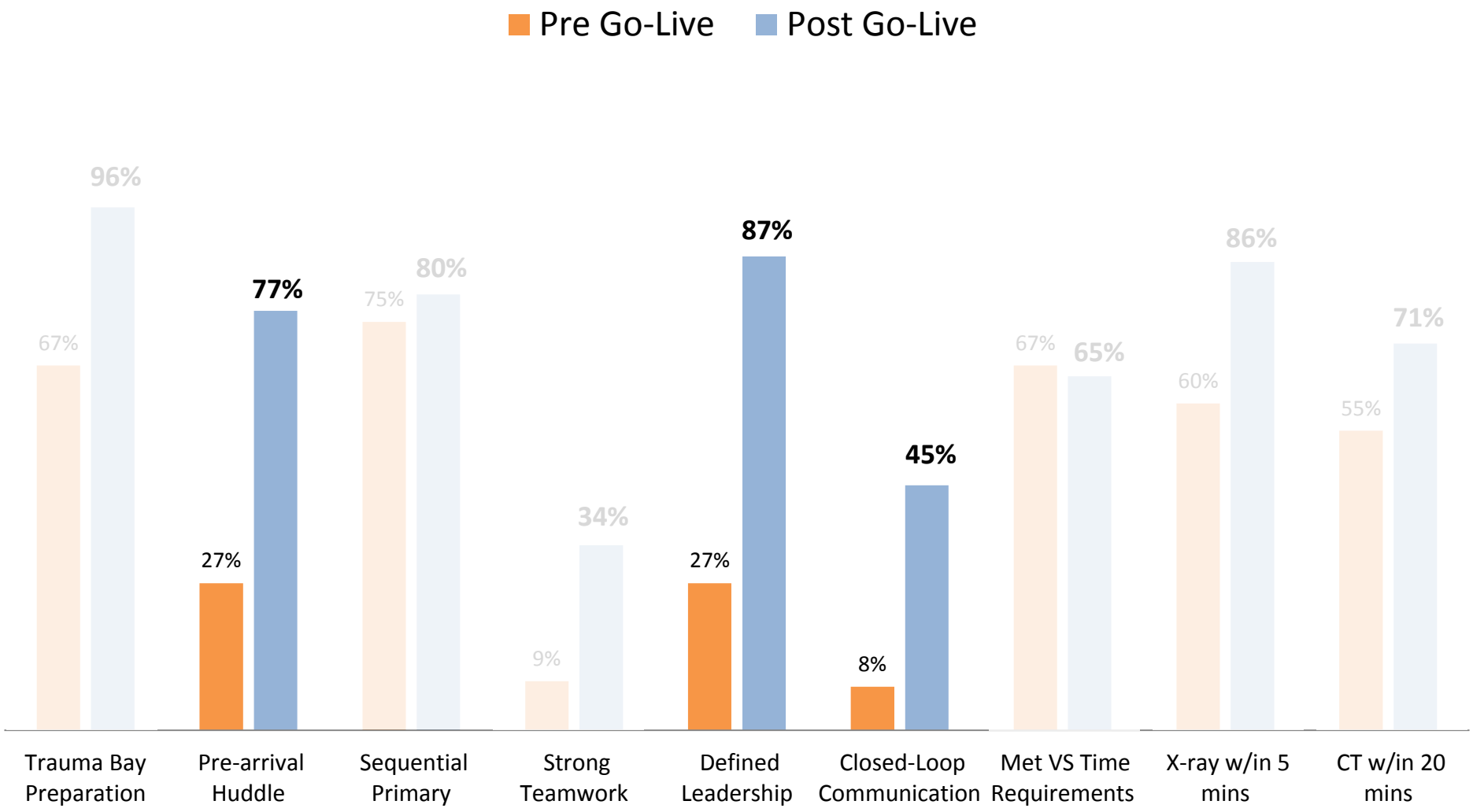
Accomplishments

- New trauma resuscitation process
- Culture change with increased engagement and support from physician and administrative leadership
- Defined leadership and staff roles with use of closed-loop communication
- Decreases in under-triage, patient complications, and risk adjusted mortality related to shock
- Decreased times to: manual BP, HR, O2 sats, X-ray, CT, and OR
- Implementation of monthly multidisciplinary in-situ trauma simulations
- Strengthened interdisciplinary relationships
- Capabilities for immediate feedback
- Continuum of Care Conference
- Documentation, accountability, safety
- Consistent trauma paging notification
- Standardization of set-up for trauma bay
- Revitalization of ED Trauma Committee
- Expansion of the Trauma Survivor's Network
- Use of cognitive aids, advanced technology
- Launch of Integrated Emotional Support Program (IESP)

Comprehensive Improvement in Trauma Resuscitation



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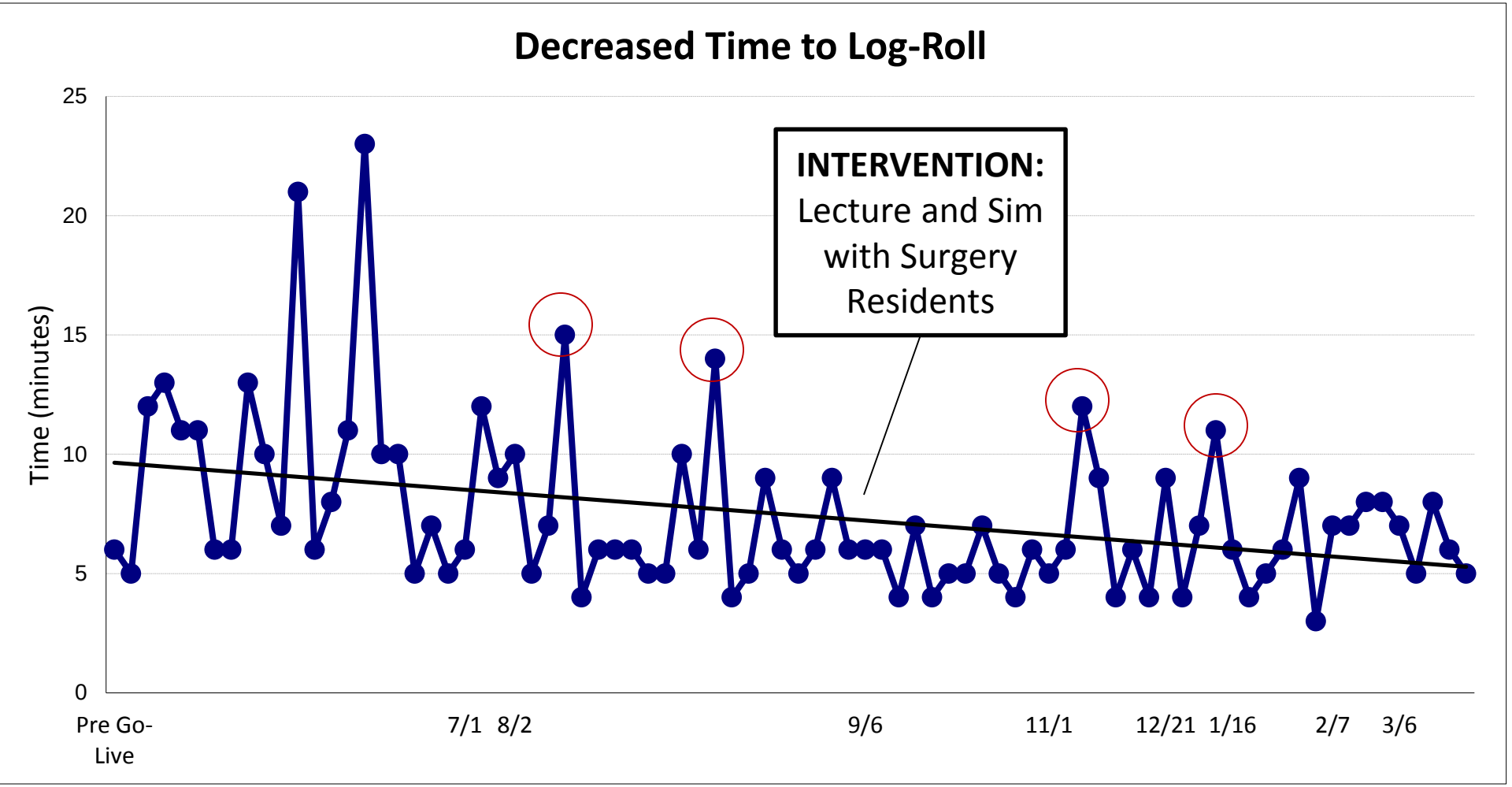

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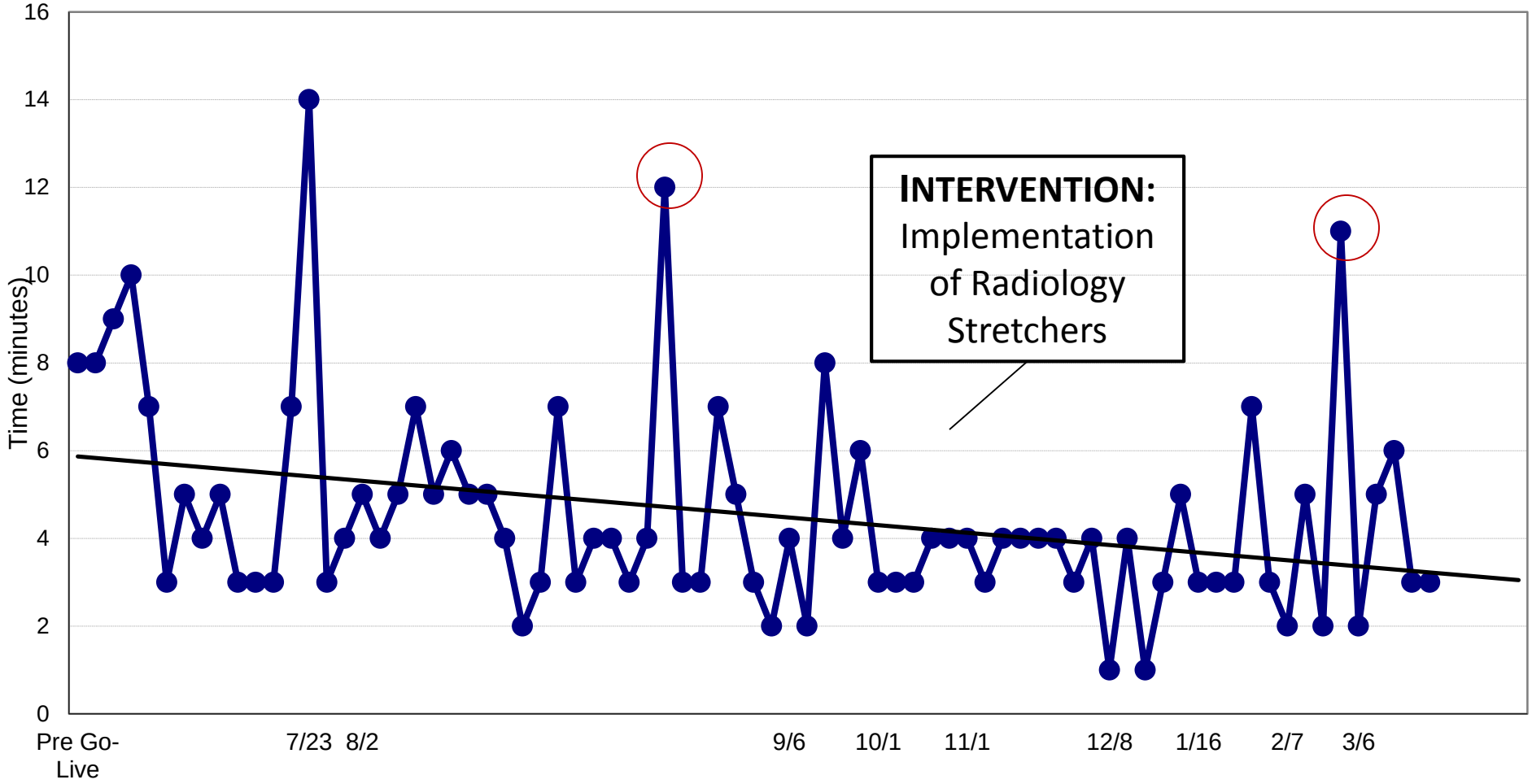
Decreased Time to Chest X-ray



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Sustainment FY 18

Improve the consistency, reliability and efficiency of trauma resuscitation through the implementation of a standardized process in the Emergency Department

Consistent Resuscitation following ATLS @ UNC

- Trauma Program Manager
- Trauma Medical Director

Consistent Education and Training

- ED Nurse Educator
- Residency Coordinators

Direct Observation and Performance Feedback

- Trauma Adult Coordinator
- Eye Tracking Research

Continuum of Care Conference

- Trauma Nurse Educator

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Trauma Recording

Detection

Proximal Individual and Team Feedback

Trauma Drills

Education

TeamSTEPPS

Systems Probe / Process Modeling

Continuum of Care

Systems Level Feedback

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Thank you

Project Team

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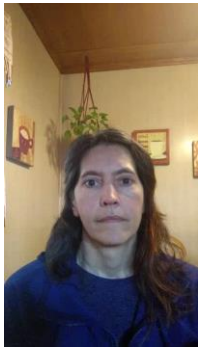

UNC INSTITUTE FOR HEALTHCARE QUALITY IMPROVEMENT

…and to so many other incredible team members

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SUPPLEMENT SLIDES

Optimizing Tar Heel Trauma Care

METHODS

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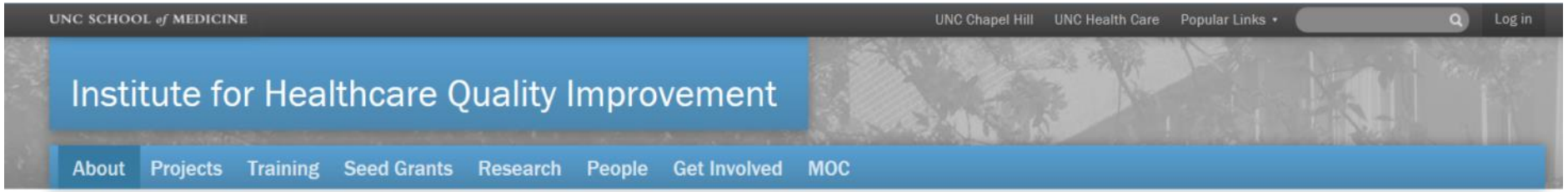

› About

Vision, Mission & Goals

VISION

UNC Medical Center will be recognized as the leading public academic medical center in healthcare improvement.

MISSION

To catalyze healthcare improvement, spread and culture change by engaging providers in improvement projects, training and research.

GOALS

- Promote the development of experience and expertise in improvement through a robust seed grant program
- Expand and enhance training in improvement techniques, using the Lean Six Sigma approach in cooperation with UNC Medical Center's Department of Operational Efficiency
- Develop a robust program of externally-funded research

The UNC Institute for Healthcare Quality Improvement (IHQI) Seed Grant Program promotes the development of experience and expertise in quality improvement at UNC Hospitals, Faculty Physician practices and Physician Network practices.

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Responsibilities of the Registered Nurse During Trauma Assessment & Resuscitation

ANNOUNCEMENT	• Ready room & equipment for trauma/ resuscitation.	• Ready room & equipment for trauma/ resuscitation.
HUDDLE	• Introduce self/ explain role. • Participate in huddle.	• Introduce self/ explain role. • Participate in huddle.
ARRIVAL		
REPORT	• Take dictation of report. • Document: Mechanism of Injury, EMS service, Prehospital treatment.	
TRANSFER TO RESUSCITATION STRETCHER		• Assist with transfer from EMS stretcher to resuscitation stretcher.*

PRIMARY SURVEY
ABCDE
Airway, **B**reathing, **C**irculation, **D**isability, **E**xposure & Examine
FAST: Focused Assessment with Sonography in Trauma
IDENTIFY AND FIX SHOCK
ATOMIC: **A**irway obstruction, **T**ension pneumothorax, **O**pen chest wound, **M**assive hemothorax, fla**I**l chest, **C**ardiac tamponade
	• Use Closed Loop Communication.
	• Document:
	  • Primary survey (**ABCDE**).
	  • Manual blood pressure.
	  • Interventions and procedures to treat shock.
	  • IV access/central lines.
	  • Medications, blood products, fluids.
		• Use Closed Loop Communication.
		• Place pulse oximeter and heart monitor on patient, measure tempurature.*
		• Auscultate manual blood pressure.
		  Connect blood pressure cuff to monitor & set automatic blood pressure to retake every 3-5min until patient confirmed stable.
		• Expose patient.*
		• Establish or ensure adequate venous access.
		  Large bore x2, at least 1 of which can be used for CT angiogram
		• Help turn patient*
		• Perform interventions and assist with procedures necessary to treat shock.

SECONDARY SURVEY
FGH
Full Set of Vital Signs, **G**ive Comfort Measures, **H**ead to Toe Assessment
	• Document:
	  • Vital signs.
	  • Secondary survey (**FGH**).
	  • Wounds, lines, drains.
	  • Medications, blood products, fluids.
	  • Procedures.
	• Collect and send blood, urine for laboratory studies.*
		• Measure core tempurature and communicate full set of vital signs to T-1.*
		• Apply hospital identification band to patient.*
		• Obtain blood, urine for laboratory studies.*
		• Administer medication, fluids, blood.
		• Insert NG/OG tube.
		• Insert urinary catheter.*
		• Assist MDs with bedside procedures.

SHARED MENTAL MODEL	• Participate in Shared Mental Model	• Participate in Shared Mental Model. • Prepare patient and equipment for transport.
IMAGING (AS NEEDED)	• Bring ED stretcher to imaging for transfer.* • Handoff to receiving registered nurse in inpatient unit or emergency department. • Bring resuscitation stretcher back from imaging.*	• Transfer patient from resuscitation stretcher to imaging table.* • Monitor vital signs. • Transfer patient from imaging table to ED stretcher.*
TRANSFER TO ROOM/ INPATIENT UNIT	• Ensure smooth transition to inpatient unit *or* ensure smooth transition to emergency department room *or* assume primary patient care.	• Transfer patient to inpatient unit or emergency department room.* *or* • Update T-1 & assist with patient care as needed by T-1.

** Indicates tasks that may be delegated to NA II.*

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Optimizing Tar Heel Trauma Care

TAR HEEL TRAUMA

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Level 1 Adult and Pediatric Trauma Center

AMERICAN COLLEGE OF SURGEONS
Verified Trauma Center

NORTH CAROLINA OEMS OFFICE of EMS

- Manage the public health problem of injury (prevention)
- Reduce the degree of injury
- Optimize the outcome from injury
- Reduce mortality and morbidity

Optimal care for the trauma patient across continuum of trauma care.

Neurology

Radiology

Orthopedics

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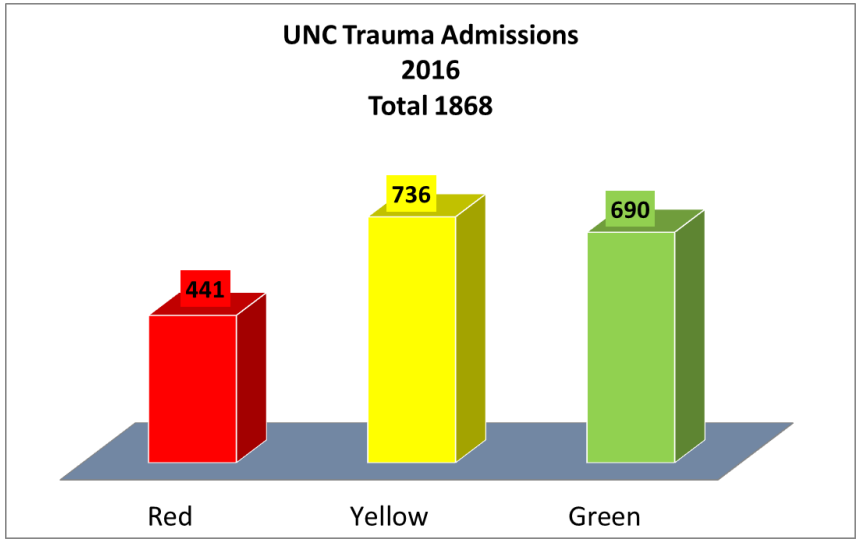
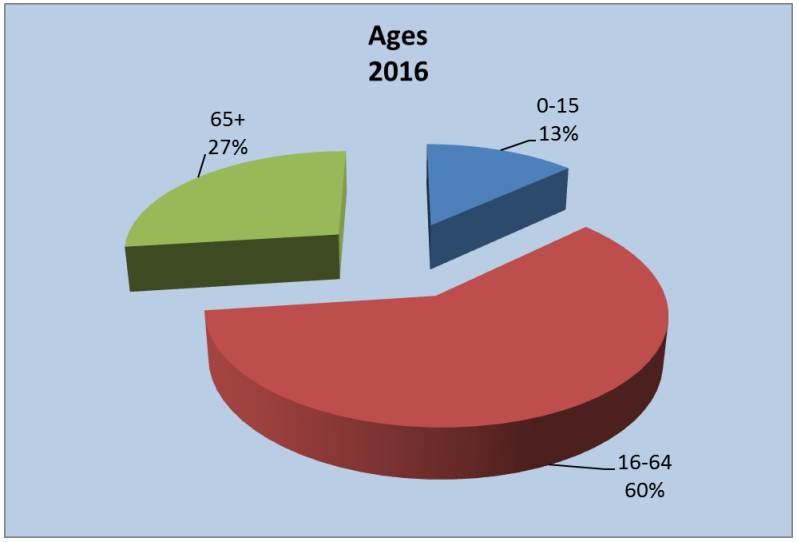
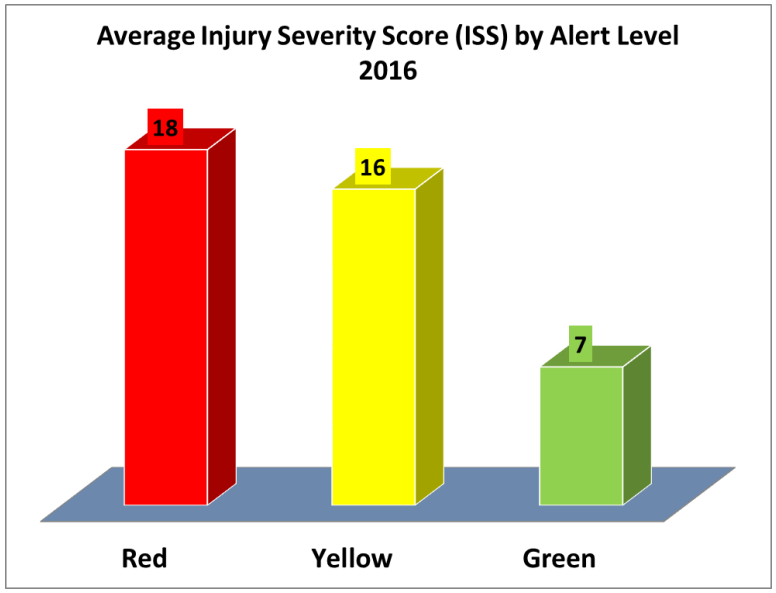
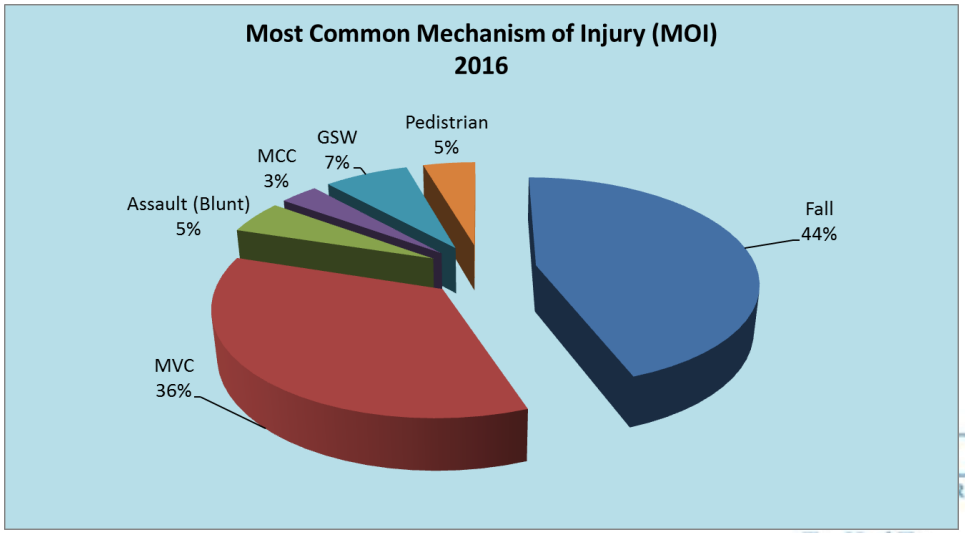
Dual Trauma Designation









Tar Heel Trauma

Mission:

- Maintain UNC's Level I Adult and Pediatric Trauma Verification and ultimately work to ensure trauma patients receive optimal care.

Vision:

- Move the needle of trauma-related morbidity and mortality in the Region in ten years.

TAR HEEL TRAUMA

Our Commitment

OUR VISION:
WE WILL MOVE THE NEEDLE OF TRAUMA-RELATED MORBIDITY AND MORTALITY IN THE REGION

WHO WE ARE:

- We are a team of professionals dedicated to and recognized for excellence in trauma care
- We live by the ACS Standards and Best Practice Guidelines for Optimal Trauma Care
- We are partners in trauma care at UNC, within our communities, regionally and nationally
- We do this because our patients, their families and our communities deserve it

WE ARE TARHEEL TRAUMA

Strategies

- Data
- Quality
- Presence "I'm Here"

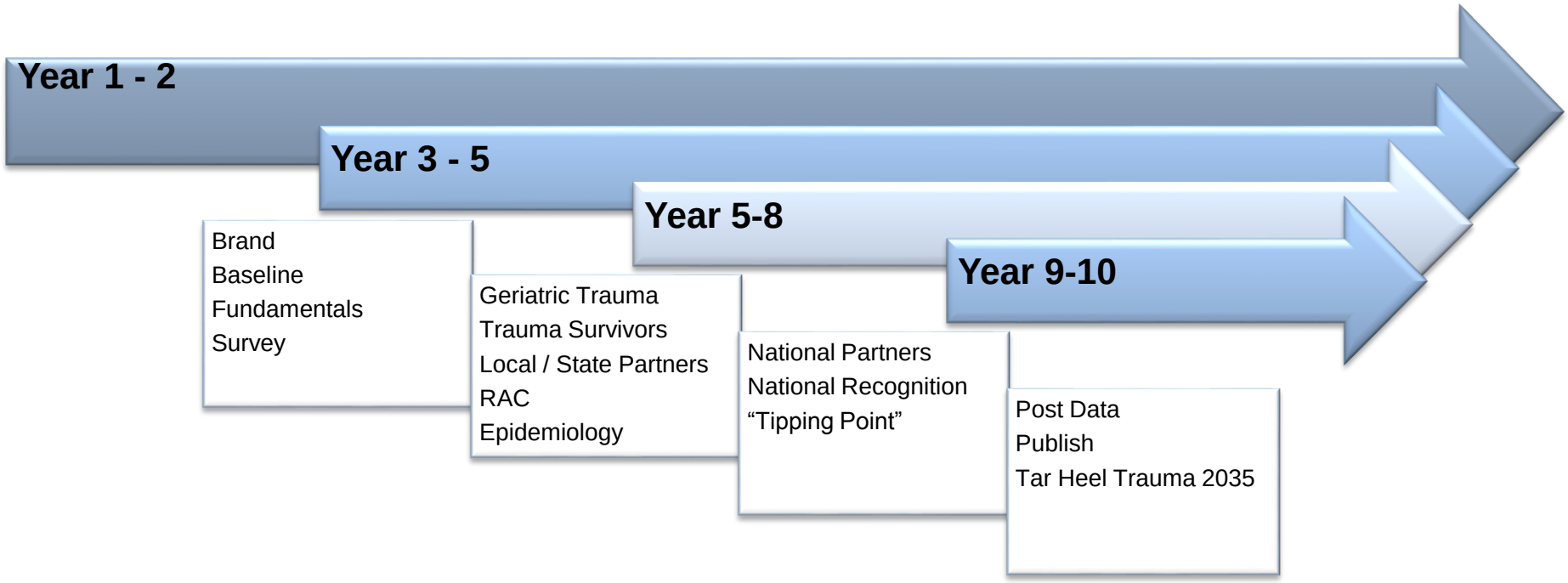
Proposed Tactics

Obsession with Data
- Data will Drive Strategic and Tactical Decisions
- Transform Data into Meaningful Action
- At-a-Glance, Real-time Surveillance
- Robust analytics
- Wide-spread availability of data

Fundamentals:
- AV footage for Quality
- Trauma Drills
- Continuum of Care Trauma Conference
- Core Trauma Nurse Development
- Pediatric and Geriatric Trauma

Brand of Excellence
- Nationally, Regionally, Institutionally and at the Bedside
- Leadership; Entrenchment; Partnerships; Publications and Presentations
- Marketing Plan

Vision Timeline



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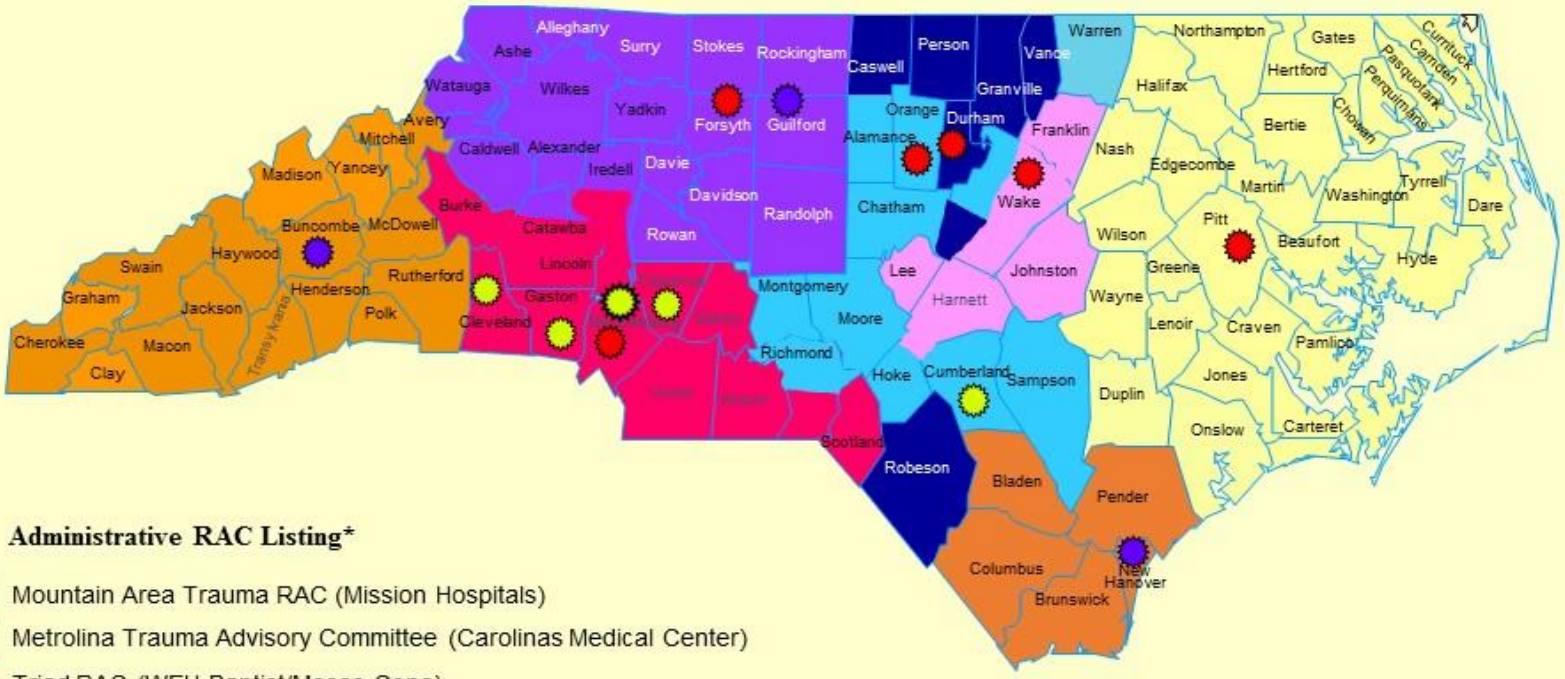
North Carolina Regional Advisory Committee (RAC) Trauma Center Map
July 2016



Administrative RAC Listing*

- Mountain Area Trauma RAC (Mission Hospitals)
- Metrolina Trauma Advisory Committee (Carolinas Medical Center)
- Triad RAC (WFU Baptist/Moses Cone)
- Southeastern RAC (New Hanover Regional)
- Eastern RAC (Vidant Medical Center)
- Duke RAC (Duke University Hospital)
- Mid Carolina Trauma RAC (UNC Health Care)
- Capital RAC (WakeMed)

- Indicates a Level **I** Trauma Center
- Indicates a Level **II** Trauma Center
- Indicates a Level **III** Trauma Center

Counties with different colors indicate two or more hospitals with different RAC affiliations as follows:

- **Catawba County**: Catawba Valley Medical Center – Metrolina Frye Regional – Triad
- **Iredell County**: Iredell Memorial Hospital – Triad Davis Regional Medical Center - Triad Lake Norman Regional Medical Center – Metrolina
- **Richmond County**: Sandhills Regional Medical Center – Metrolina FirstHealth Richmond Memorial Hospital – MidCarolina
- **Wake County**: Duke Raleigh Hospital – Duke, Rex HealthCare – MidCarolina WakeMed Hospital – CapRac

Optimizing Tar Heel Trauma Care

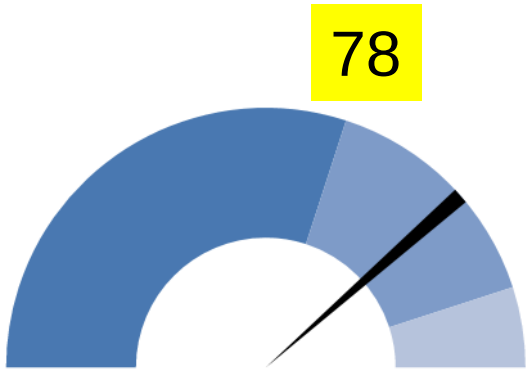
THE BURNING PLATFORM

UNC HEALTH CARE

Tar Heel Trauma

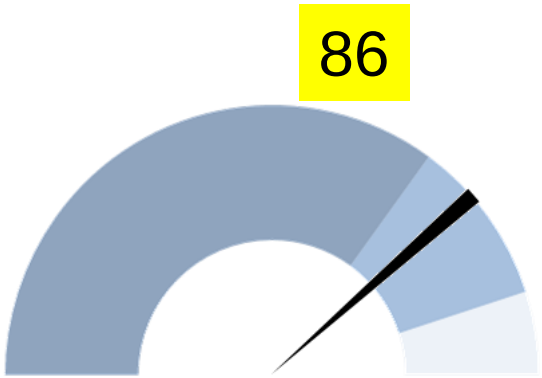
Comfort and Confidence in Trauma Roles

- How comfortable or confident are you when performing your role?
  - (0 = very uncomfortable → 100 = very comfortable)



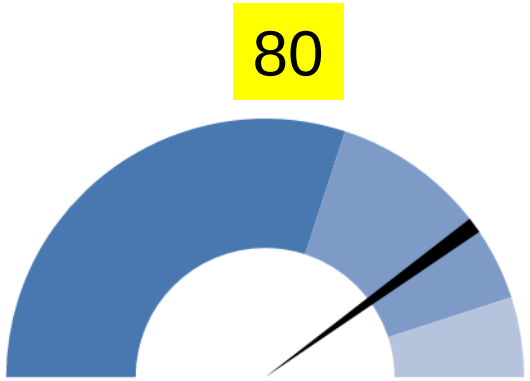
T1

(Primary Trauma Nurse)



T2

(Secondary / Bedside Trauma Nurse)



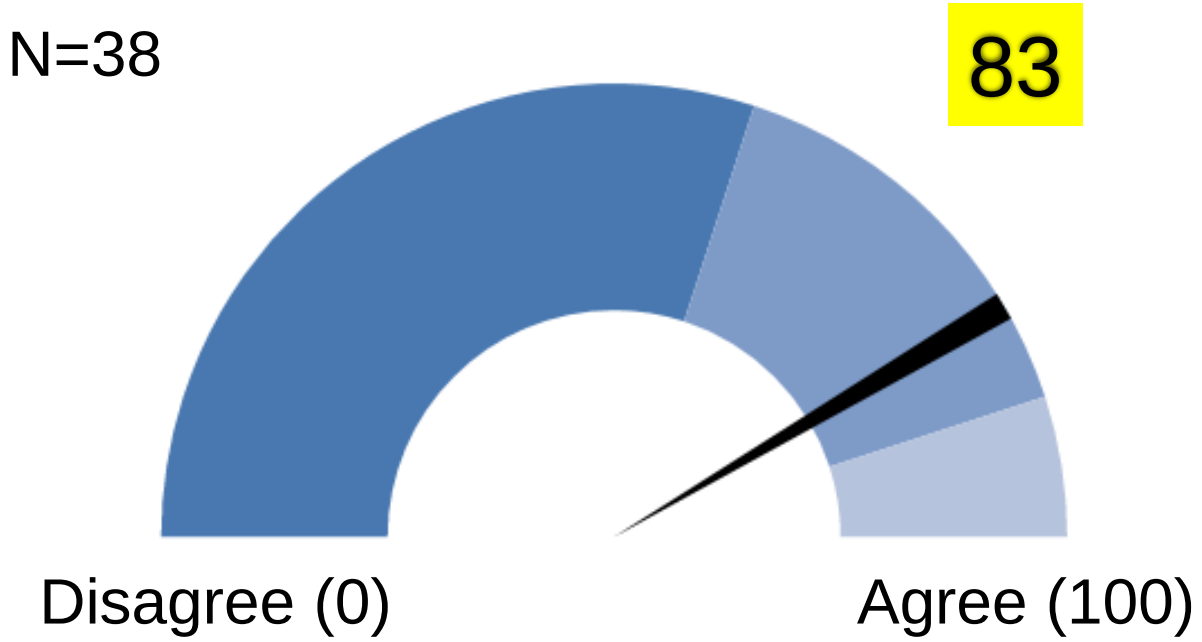
NA

(Nursing Assistant Nurse)

UNC HEALTH CARE

Tar Heel Trauma

Quality



- I feel we provide the highest quality nursing care for trauma patients.

Barriers

1. **Trauma Process not followed (13)**
   The trauma process is followed inconsistently and variably causing sense of disorganization, degradation of teamwork, inability to anticipate team's actions, disorderly communication of findings, orders shouted simultaneously, inability to adequately chart, and causes general frustration.

2. **Ineffective leadership in trauma (10)**
   Generally ineffective leadership and management in traumas. Specifically leader at times unclear or multiple leaders attempting to manage resulting in assessments and orders being given at the same time. Delegation also at times ineffective.

3. **Observers Disruptive (6)**
   Observers and others not directly involved in trauma care are often disruptive.

4. **EPIC Problematic (5)**
   Electronic charting in EPIC is problematic due to registration, user interface, inconsistency with trauma process and general usability.

5. **Ineffective communication (5)**
   Generally ineffective communication during traumas (e.g. unclear orders and plan of care)

1. **Redesign T1 assignment (12)**

2. **Improve adherence to trauma process (7)**
   Improve consistency and adherence to ATLS / TNCC trauma assessment process.

3. **Provide more trauma education (6)**
   Provide (and perhaps require) more trauma education and hands-on practice.

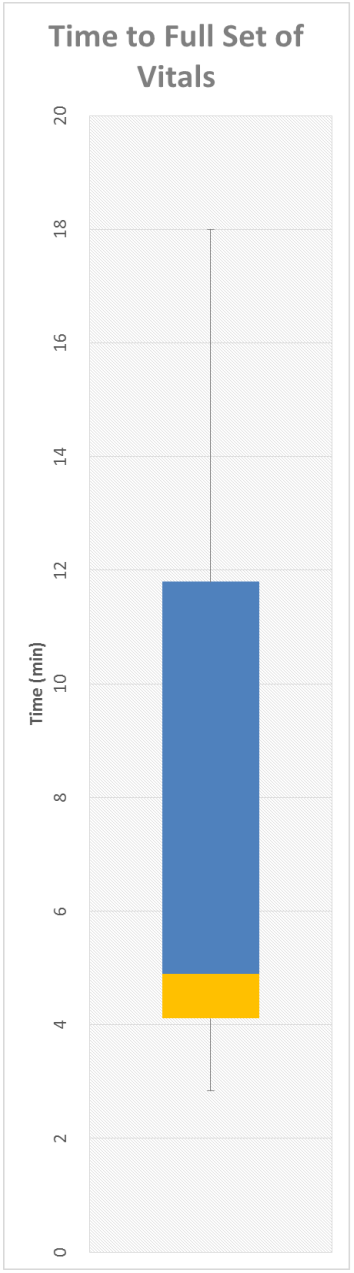
4. **Improve EPIC documentation process (4)**
   EPIC documentation process MUST be improved or consider return to paper documentation.

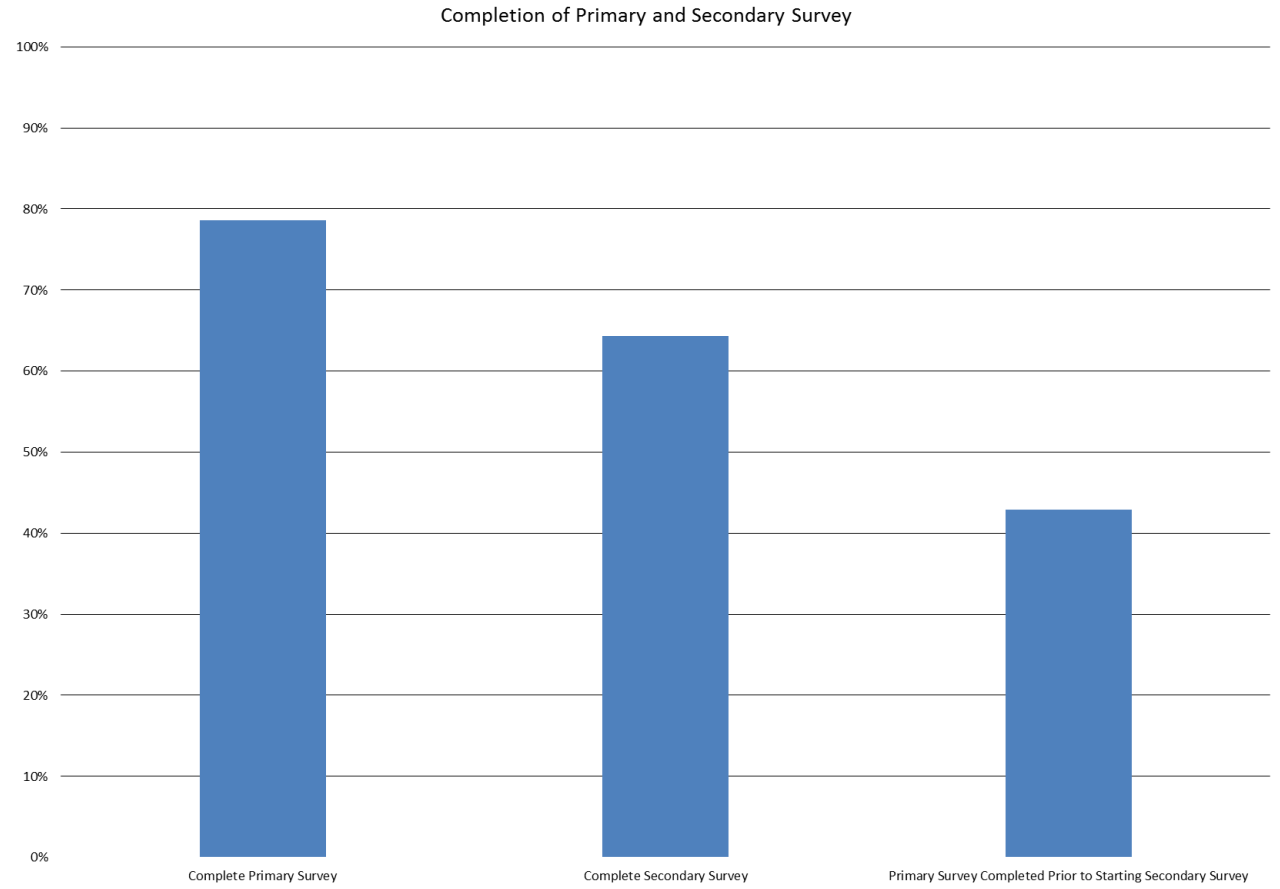
5. **Reduce interference from observers (4)**

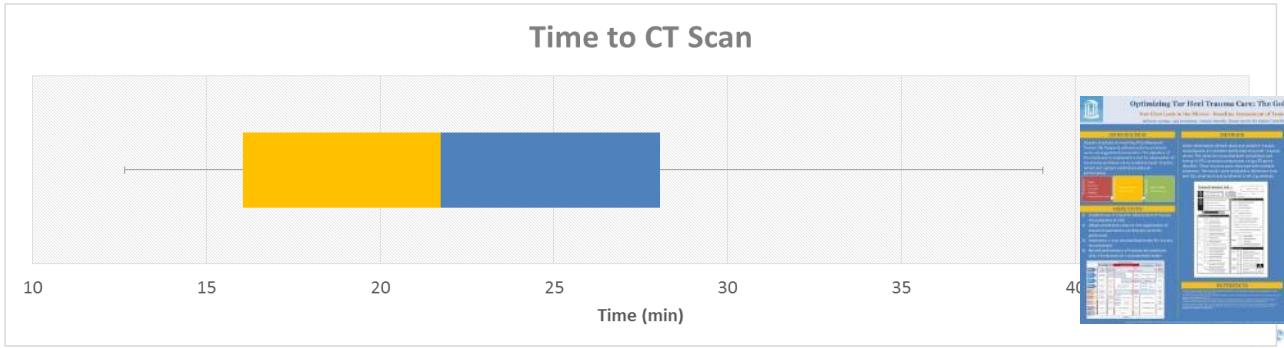
6. **Establish pre-trauma huddle (3)**

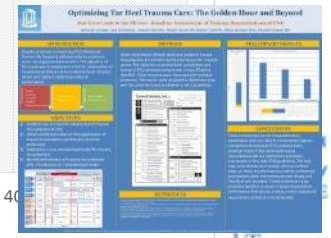
UNC HEALTH CARE
Tar Heel Trauma

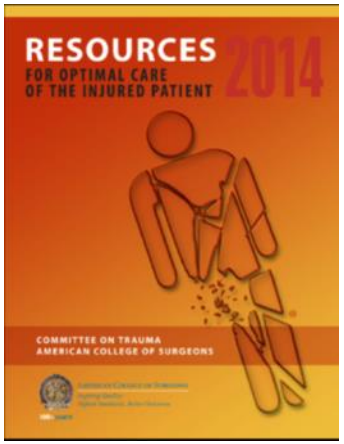
Baseline


Time to Full Set of Vitals
Time (min)
0
2
4
6
8
10
12
14
16
18
20

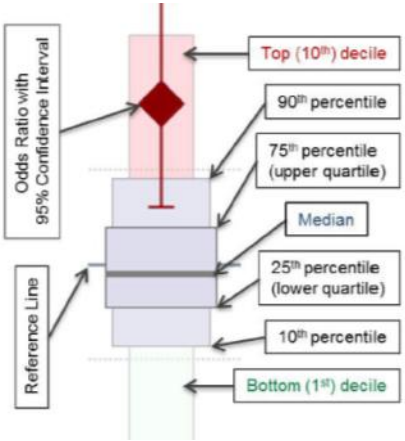

Completion of Primary and Secondary Survey
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Complete Primary Survey
Complete Secondary Survey
Primary Survey Completed Prior to Starting Secondary Survey


Time to CT Scan
10
15
20
25
30
35
Time (min)

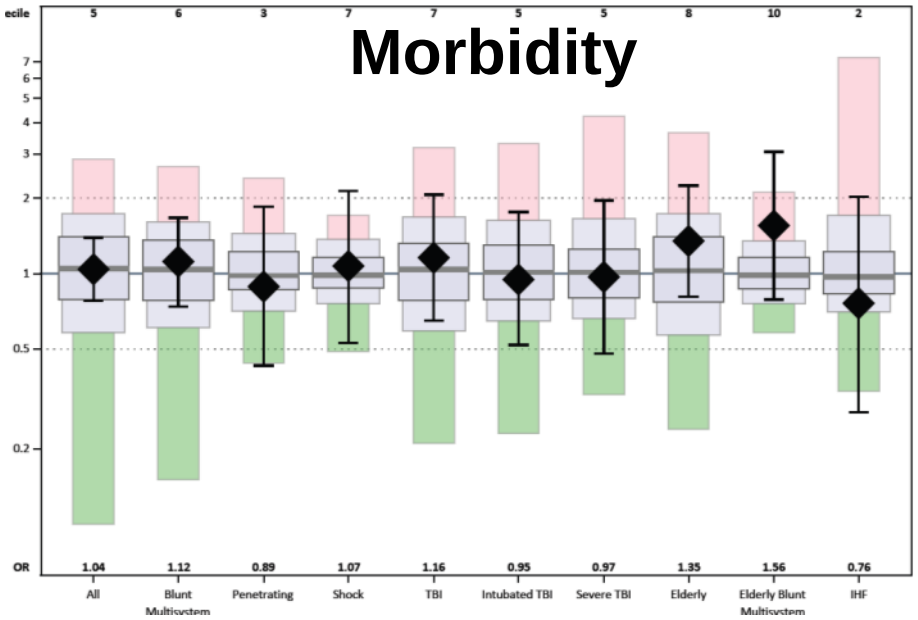


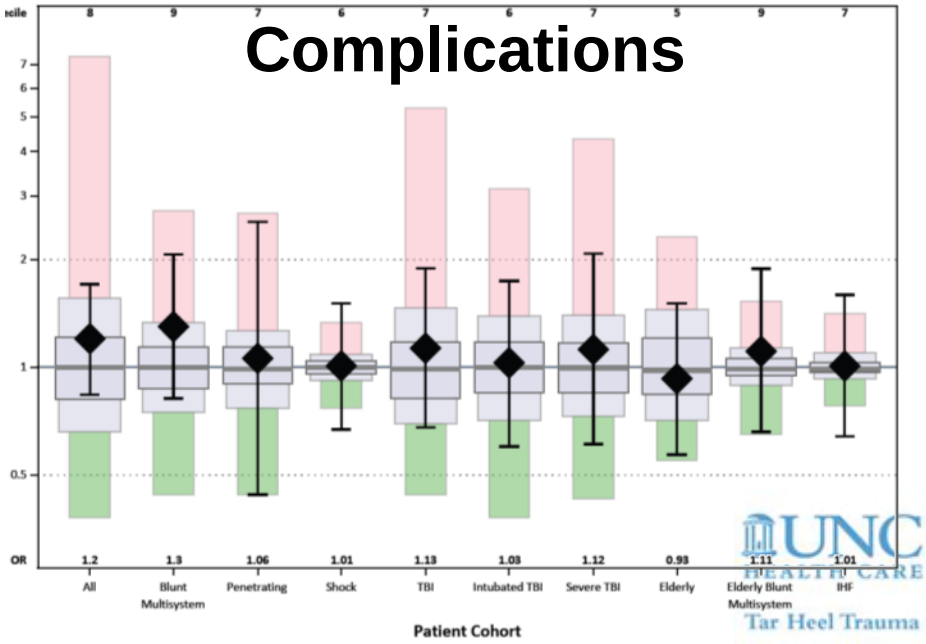


ACS tqip TRAUMA QUALITY IMPROVEMENT PROGRAM



Blunt Multi-system
TBI
Elderly (complications)
Elderly Blunt Multisystem





UNC HEALTH CARE
Tar Heel Trauma

TAR HEEL TRAUMA

Our Commitment

OUR VISION:
WE WILL MOVE THE NEEDLE OF TRAUMA-RELATED MORBIDITY AND MORTALITY IN THE REGION

WHO WE ARE:

- We are a team of professionals dedicated to and recognized for excellence in trauma care
- We live by the ACS Standards and Best Practice Guidelines for Optimal Trauma Care
- We are partners in trauma care at UNC, within our communities, regionally and nationally
- We do this because our patients, their families and our communities deserve it

WE ARE TARHEEL TRAUMA

Strategies

- Data
- Quality
- Presence "I'm Here"

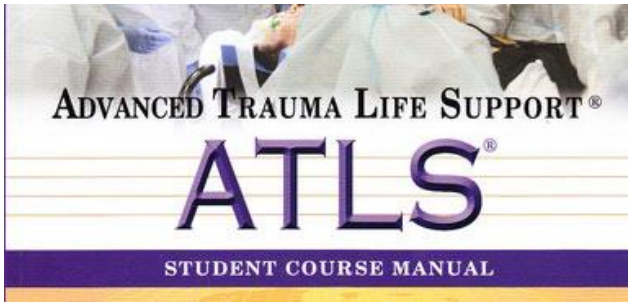
Proposed Tactics

Obsession with Data
- Data will Drive Strategic and Tactical Decisions
- Transform Data into Meaningful Action
- At-a-Glance, Real-time Surveillance
- Robust analytics
- Wide-spread availability of data

Fundamentals:
- AV footage for Quality
- Trauma Drills
- Continuum of Care Trauma Conference
- Core Trauma Nurse Development
- Pediatric and Geriatric Trauma

Brand of Excellence
- Nationally, Regionally, Institutionally and at the Bedside
- Leadership; Entrenchment; Partnerships; Publications and Presentations
- Marketing Plan

NC CARE Trauma



Tar Heel Trauma Critical Path

TRAUMA CAPTAIN	Lead Team Huddle	Preparation
	Takes Report	Patient Arrival
AIRWAY PHYSICIAN	Airway ▸ Breathing ▸	Identify and Fix Shock (A-T-O-M-I-C)
BEDSIDE PHYSICIAN	▸ Circulation ▸ ▸ Disability	
	Back	
	Head to Toe* (Airway Physician May Help with Head)	Secondary Survey
TRAUMA CAPTAIN	Lead Shared Mental Model	Disposition

UNC TRAUMA PROGRAM

V. 20160702
POC: tarheeltrauma@unchealth.unc.edu

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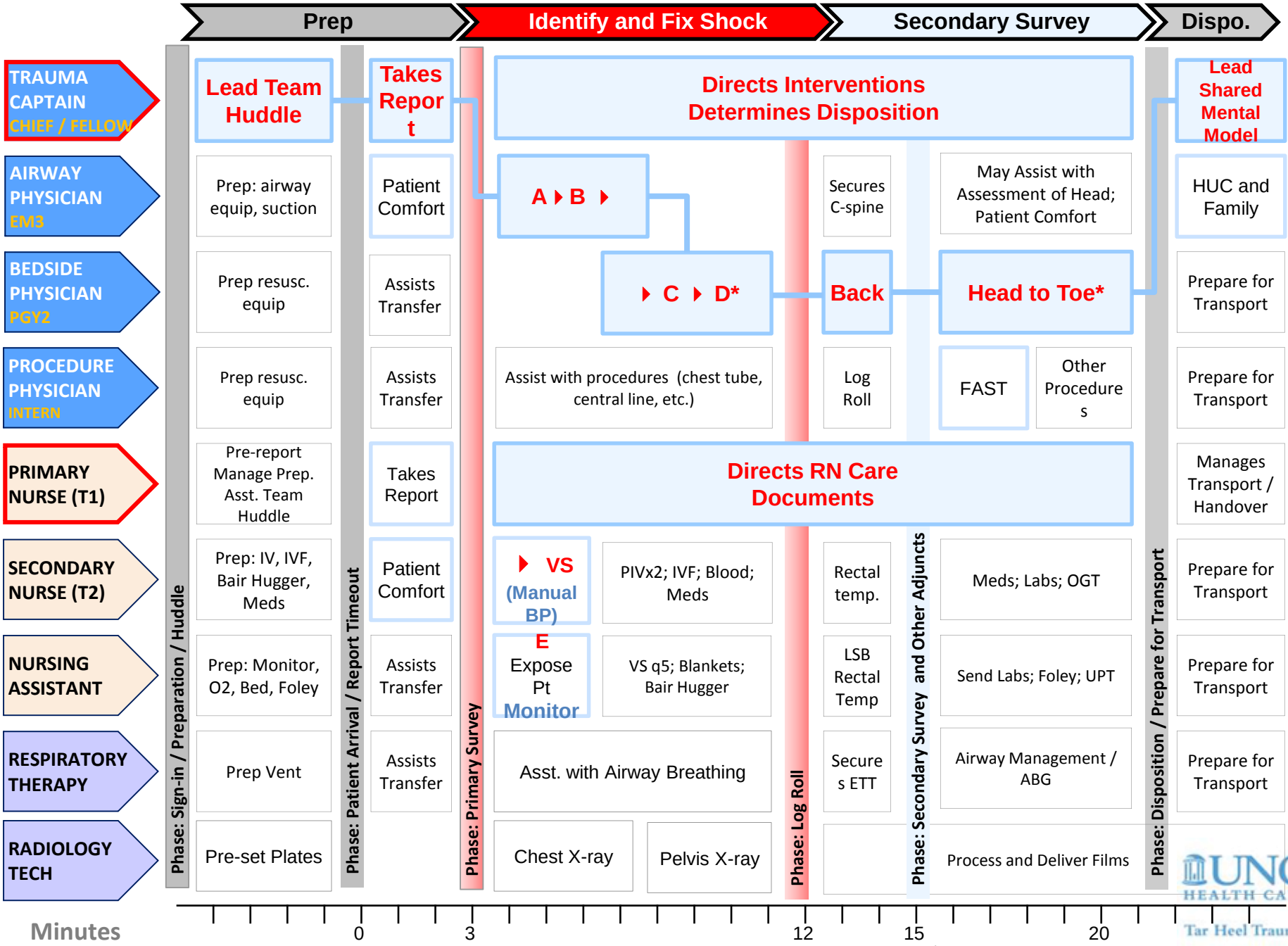
Tar Heel Trauma

Tar Heel Trauma Resuscitation Process



* Airway Physician may assist with assessment of head per Bedside Physician / Trauma Captain

UNC HEALTH CARE
Tar Heel Trauma

Identify and Fix Shock

A-B-C-D-E IDENTIFIES A-T-O-M-I-C

Airway Obstruction

Tension Pneumothorax

Open Pneumothorax

Massive Hemothor

I (Flail Chest)

Cardiac Tamponade

Early Log Roll
(Blunt / Penetrating / Spinal)

Assessment Findings

- *"Airway Patent"*
- *"Breathing Labored"*
- *"Trachea Midline"*
- *"No JVD"*
- *"Lung Sounds Clear, Equal Bilaterally"*
- *"Chest Wall Deformity"*
- *"Heart Sounds Muffled*

Fix Shock

Responder | Transient Responder | Non-Responder

http://www.slideshare.net/MohammedAlSirajIBRAH/thoracic-trauma-53564059

Pre-Trauma Huddle

- ❑ **Report:** known MIVT on board

- ❑ **Team**: names, roles, responsibilities
- ❑ **Equipment and Environment**
- ❑ **Alert:** CT / ICU / OR as needed
- ❑ **Most Important Thing**

- ❑ **Shared Mental Model:** after 2nd ax

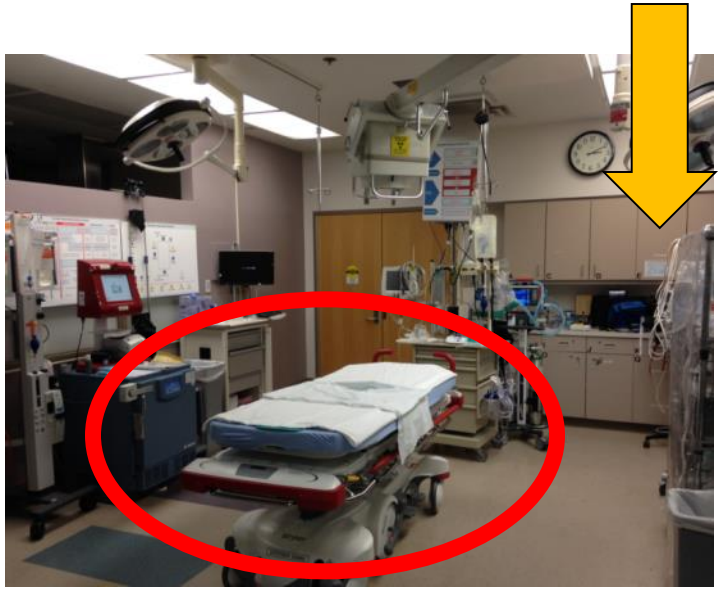
UNC HEALTH CARE
Tar Heel Trauma

Optimizing Tar Heel Trauma Care

RESULTS

UNC HEALTH CARE

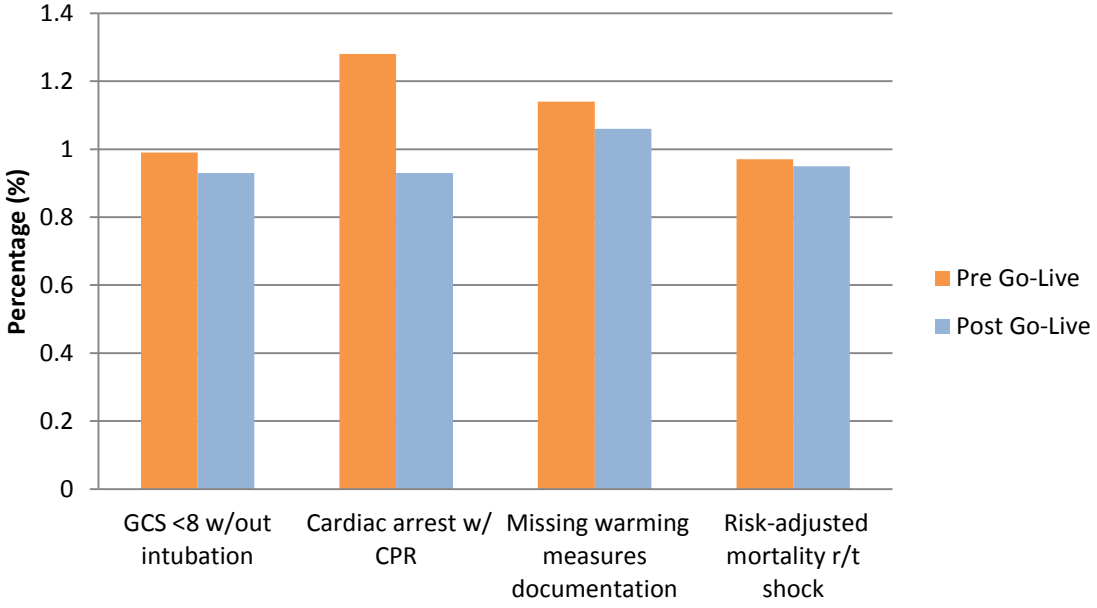
Tar Heel Trauma



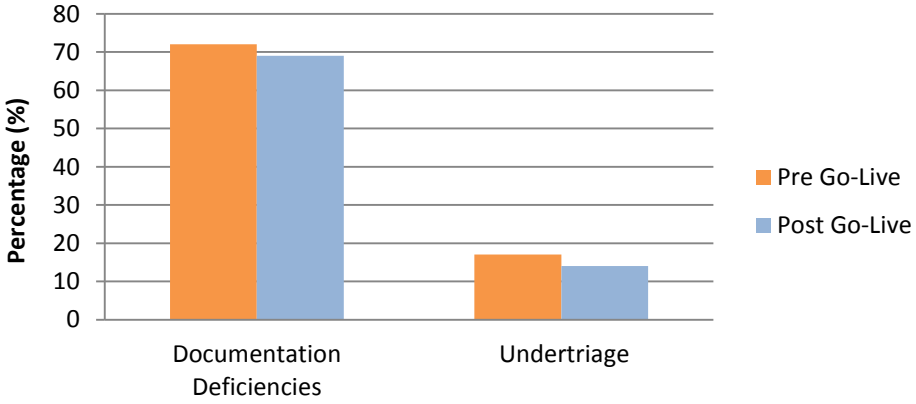
UNC HEALTH CARE

Tar Heel Trauma

Decrease in Trauma Patient Complications



Improvements in Trauma Documentation & Triage



UNC HEALTH CARE
Tar Heel Trauma

Optimizing Tar Heel Trauma: Metrics Table

Metric	% Meeting Protocol Before	n	% Meeting Protocol After	n	Mean/ Avg Time Before	Mean/ Avg Time After	Median Before	Median After	Min Before	Min After	Max Before	Max After
Preparation	"Yes"		"Yes"									
Bay Stocked	67	15	**86**	28	smaller n = after checksheet "Go-Live"							
Bay Cleaned	87	14	**98**	64								
Team Prep	"Yes"		"Yes"									
Plan Relayed	29	14	**67**	61	cases excluded when "unobservable" or N/A (did not occur)							
Team Met	43	14	**87**	61								
Roles Defined	14	14	**65**	60								
Report Received	100	15	90	49								
Primary	Obtained w/in 5 minutes of arrival		Obtained w/in 5 minutes of arrival									
Airway	100	11	100	64	1	2	1	2	1	1	2	4
Breathing	91	14	**100**	66	2	2	2	2	1	1	6	**5**
Circulation	92	11	91	65	3	3	2	2	1	1	7	9
Disability (GCS)	100	12	97	66	2	3	2	2	1	1	4	8
Exposure	100	11	95	65	2	2	2	2	1	1	4	6
Vital Signs	Obtained w/in 5 minutes of arrival		Obtained w/in 5 minutes of arrival									
Blood Pressure	86	14	91	67	5	**4**	5	3	2	2	13	**11**
Heart Rate	77	13	**84**	67	5	**4**	4	4	2	**1**	14	**12**
Temperature	75	12	47	59	7	8	5	5	2	2	18	183
Pulse Ox	72	11	**74**	66	5	**4**	4	4	2	**1**	13	19
Secondary												
Head & Face		15		60	4	7	3	6	1	1	14	15
Neck		12		59	3	7	3	5	1	1	6	15
Chest		15		58	3	6	4	5	1	1	6	14
Abdomen		15		59	3	6	2	6	2	2	4	15
Perineum		9		33	8	**7**	8	**6**	4	**3**	22	**15**
Extremities		15		55	4	8	3	7	1	3	12	30
Spine		15		66	10	**8**	7	**6**	5	**3**	23	**15**
Studies	X-ray w/in 5 FAST w/in 10 CT w/in 20		X-ray w/in 5 FAST w/in 10 CT w/in 20									
X-Ray	58	12	**82**	66	6	**4**	5	**4**	3	**1**	10	14
FAST	75	12	69	41	7	7	7	9	3	3	12	23
CT	55	11	**71**	48	23	**19**	19	**17**	12	**9**	39	**36**
Communication	"Usually and Always" "Yes"											
Debrief	9	11	**34**	50								
Closed- Loop	8	12	**45**	64								
Followed Leader	27	15	**87**	62								

UNC HEALTH CARE

Tar Heel Trauma

Trauma Registry Data : Pre and Post Go-Live Comparison

	Red	Yellow	All	GCS < 8 and pt. not intubated	% GCS < 8 and pt. not intubated	Cardiac arrest w/ CPR	% Cardiac arrest w/ CPR	No documentation - temp w/in 20 mins	% No documentation - temp w/in 20 mins	No documentation - warming measures	% No documentation - warming measures	Pt. in shock (systolic </= 90) who didn't receive any blood	% Pt. in shock (systolic </= 90) who didn't receive any blood	Pt. in shock (systolic </= 90) who didn't receive blood w/in 1 hr	% Pt. in shock (systolic </= 90) who didn't receive blood w/in 1 hr
Pre	265	439	704	7	0.99	9	1.28	37	5.3	8	1.14	8	1.1	2	0.3
Post	281	471	752	7	**0.93**	**7**	**0.93**	56	7.4	8	**1.06**	12	1.6	5	0.7

Under triage		cribari #	cribari %
Pre	Jan-16	12	13
	Feb-16	12	14
	Mar-16	20	17
	Apr-16	26	22
	May-16	16	17
	Jun-16	18	17
	Average	17	17
Post	Jul-16	11	10
	Aug-16	11	12
	Sep-16	11	11
	Oct-16	19	18
	Nov-16	19	21
	Dec-16	9	10
	Average	**13**	**14**

avg. time to OR (min)	% doc deficiencies
81	72
66	**69**

Pre Go-Live Period: 11/3/2015 - 7/3/2016
Post Go-Live Period: 7/4/2016 – 4/4/2017

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Tar Heel Trauma