

# Improving Efficiency During Trauma Resuscitation in the ED

Michelle Maxson, RN, MSN  
Trauma Program Manager  
Hurley Medical Center

Michael McCann, DO, FACOS, FACS  
Chief of Trauma and Surgical Critical Care  
Hurley Medical Center





# Emergency Department

- 100,426 ED visits
- 16,811 Trauma related ED visits
- 1400 Trauma Activations
- 1635 Trauma Admissions
- 130 nurses
- 72 beds





# Farouck Obeid Trauma Bay

- 4 beds with ability to flex up to 6
- CT scanner directly adjacent to trauma bay











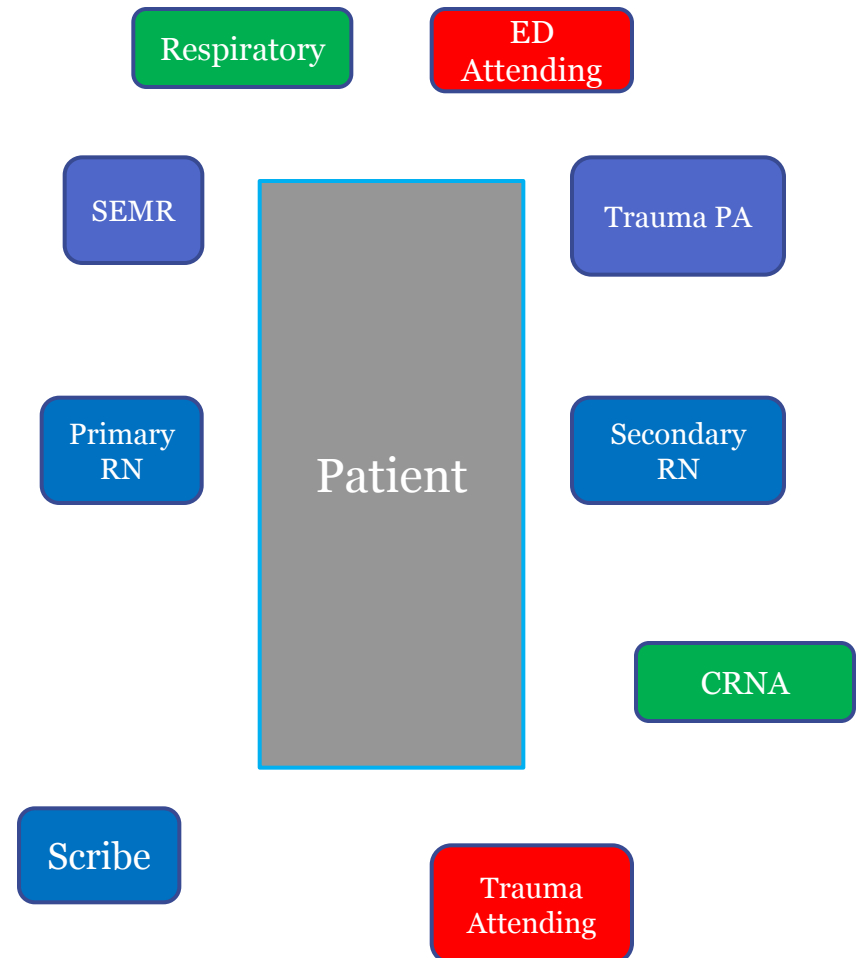
# Problem

- Trauma resuscitation was disorganized
  - Lack of role clarity
    - Tasks were being duplicated
    - Other tasks being missed
  - Lack of consistency



# Intervention

- Defined roles
  - Trauma surgeon
  - ED physician
  - Primary nurse
  - Secondary nurse





# Intervention

- Developed a Trauma Class
  - Trauma resuscitation protocols/guidelines
    - Vitals
    - Monitoring
  - Activation criteria
  - Team roles and responsibilities
  - General rules of conduct during trauma resuscitation
    - Traffic Control
    - Chain of command





# Trauma Class

- Documentation in medical record
- Hands-on skills assessment
  - Chest tube management
  - Rapid infuser
  - Assistance with invasive line placement
- Presentation from Trauma Services
- Mock Trauma
- Written Exam



# Nurse Requirements

- 2 years experience in the ED or Critical Care Unit
- ACLS and PALS
- TNCC or ATCN
- Attend Trauma Class and pass Trauma Exam
- Must display appropriate competency during mock trauma
- Preferred: CEN/CCRN certification



# Evaluation

- 1 year later
  - Lack of consistency
  - Documentation issues persisted
  - Over-crowding during resuscitations



# Proposal

- Dedicated trauma nurse group
  - Push-back from nursing leadership
    - Scheduling concerns
    - Nurse recruitment and retention
  - Given 6 months to improve quality or move forward with dedicated group



# Dedicated Trauma Nurse Group

- Must have met previously set requirements
- Must have passed trauma class
- Testing began for interested nurses
  - Basic knowledge assessment tool (BKAT)
  - ECG rhythm strip interpretation
  - Mock trauma



# Mock Trauma Scenarios

- Conducted by TMD and TPM
- 30 minutes per nurse
- Scenarios were complex
- Used as evaluation tool and teaching tool







# Dedicated Trauma Nurse Group

- 30 nurses were selected to be in the dedicated group
- Monthly lectures
  - Minimum attendance at lectures of 70%
  - Topics
    - Initially selected from deficiencies identified during mock traumas



# Topics

- Resuscitation
  - Use of TEG
  - TXA
  - Permissive hypotension
  - Hemostatic resuscitation
  - Massive Transfusion Protocol
- Pelvic fracture management
- TBI management
- ED thoracotomy
- Burn resuscitation
- Pediatrics and Geriatrics
- Case presentations
- Anticoagulation reversal



# ED Efficiency Measures

- ED efficiency measures were chosen
  - ED dwell time
  - Time to OR
  - Time to CT
  - Time to vitals
  - Time to IV



# ED Efficiency Measures

- Calculated using median times per month
- Presented monthly
  - Trauma M & M
  - Trauma Systems Meeting
  - Posted in trauma nurse work-room
  - Discussed with trauma nurses at monthly lecture



# October 2015

	<b>ED Dwell Time</b>	<b>Time to OR</b>	<b>Time to CT</b>	<b>Time to Vitals</b>	<b>Time to IV</b>
<b>Class I</b>					
<b>Class II</b>					



# ED Efficiency Measures

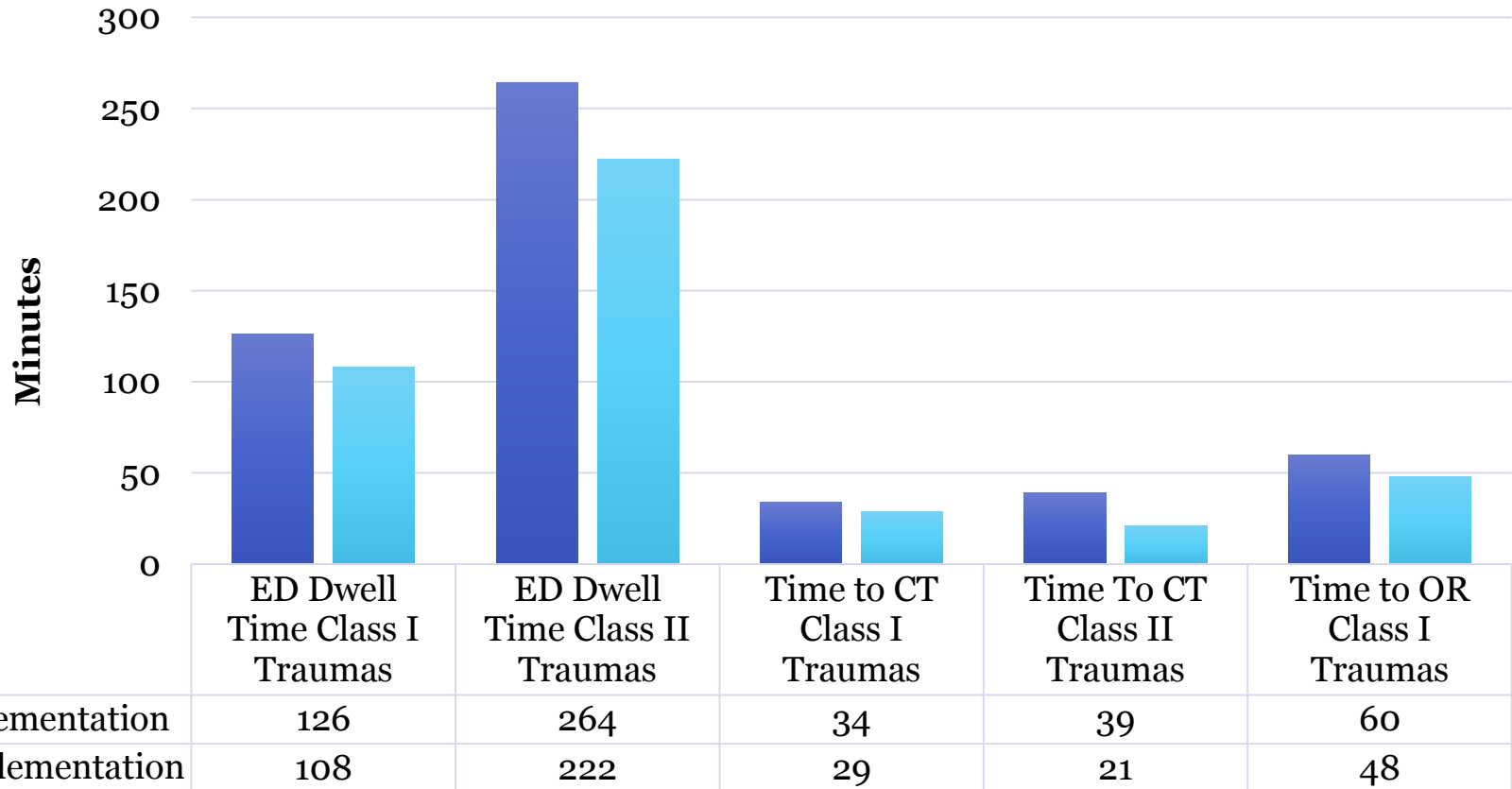
- During implementation timeframe
  - 254 Class I trauma activations
  - 454 Class II trauma activations
- Pre and Post implementation data were compared for evaluation





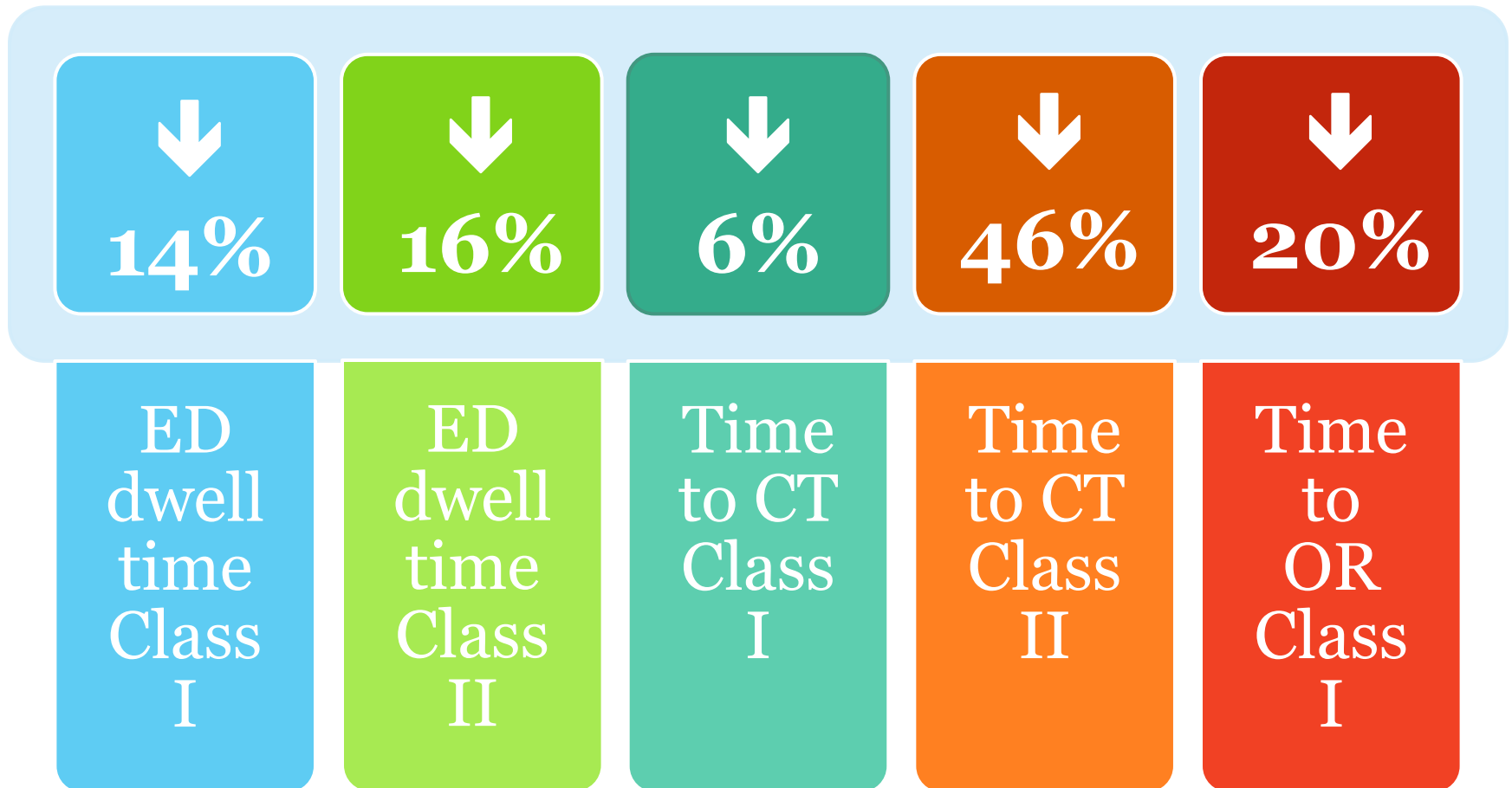
# Results

## ED Efficiency Measures





# Results



# Outcomes

- Decrease in ED efficiency measures
- Knowledge level of nursing has improved
- Nurses have taken ownership of trauma bay





# Sustainability

- Nursing turnover
  - Conducted more scenarios to add more nurses to the group
  - Elected to keep group around 30 nurses to maintain consistency
- Nursing performance
  - Perform individual evaluations with each trauma nurse to identify areas of strength and weakness



# Sustainability

- Nursing knowledge
  - Periodic quizzes to evaluate knowledge
- Trauma Nurse Lectures
  - Continue to have monthly lectures
- ED efficiency measures
  - Continue to present measures at Trauma M & M and Trauma Systems meeting monthly



# Summary

- In our experience, a reduction in ED efficiency measures were found with use of dedicated trauma nurses



