

# FEDs: Turning Business into Research Opportunities

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2018 AACEM/AAAEM Retreat



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# Outline

- History / FEDs today
- The AGMC experience
- Research and education
- Q & A

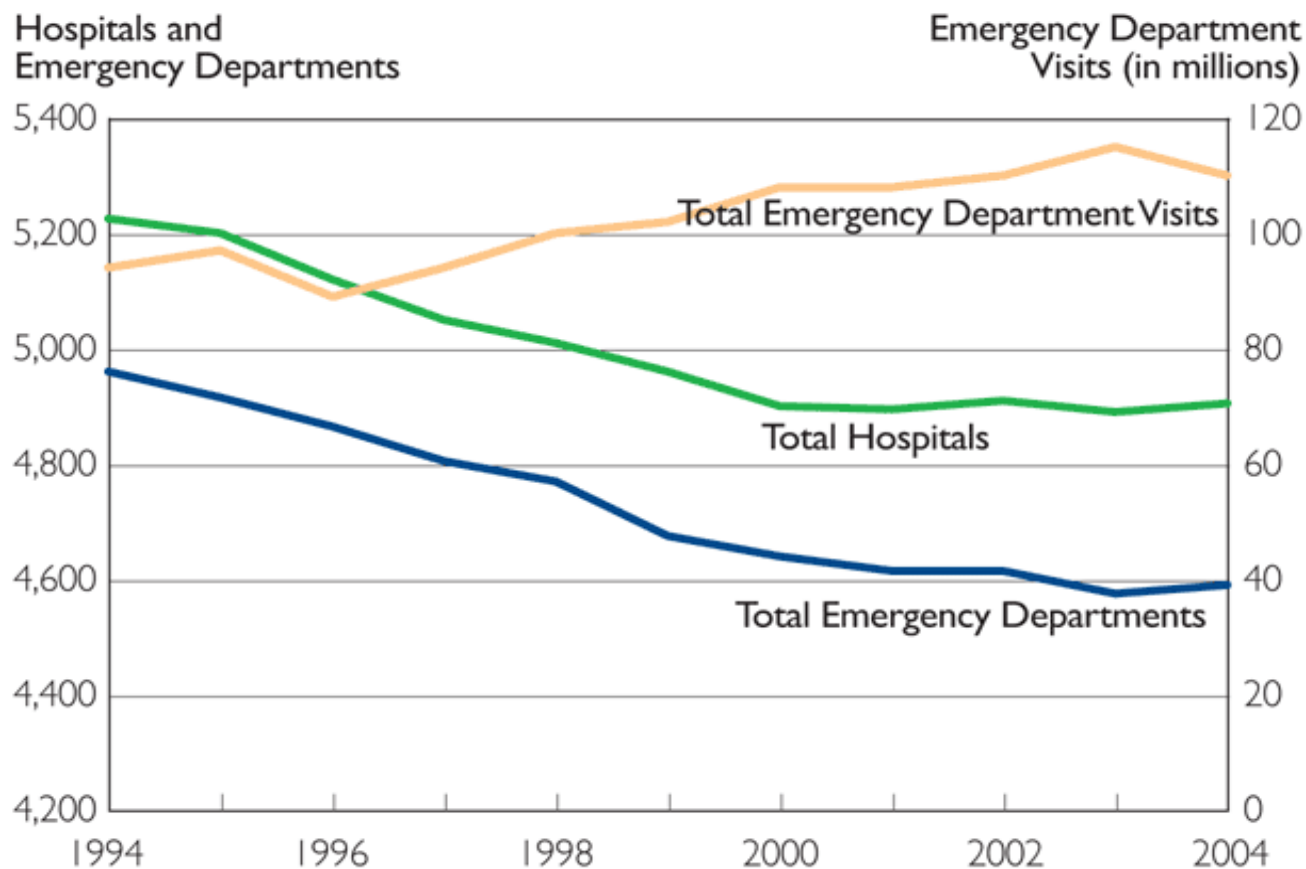




# FEDs Today



## Trends in Emergency Care, 1994–2004



**Sources:** American Hospital Association, *TrendWatch Chartbook 2006: Trends Affecting Hospitals and Health Systems*, April 2006, p. 2-2, Table 2.1, and p. 3-4, Table 3.3, at [www.aha.org/aha/research-and-trends/health-and-hospital-trends/2006.html](http://www.aha.org/aha/research-and-trends/health-and-hospital-trends/2006.html) (January 25, 2007), and Linda F. McCaig and Eric W. Nawar, "National Hospital Ambulatory Medical Care Survey: 2004 Emergency Department Summary," Centers for Disease Control and Prevention, National Center for Health Statistics Advance Data from Vital Health Statistics No. 372, June 23, 2006, at [www.cdc.gov/nchs/data/ad/ad372.pdf](http://www.cdc.gov/nchs/data/ad/ad372.pdf) (January 25, 2007).

# FED Background

- There are 600 - 700 FEDs across the USA
  - Mix of independent and hospital based
  - Estimated to be >10% of all USA ED's
  - Physician owned FEDs continue to grow, especially in TX
- Some view FEDs as taking privately insured patients away from urban EDs
- FEDs are regulated by individual states
  - Many states currently prohibit privately owned facilities
- FED academic opportunities exist

# Nuances of Free Standing ED Management

**Richard D. Zane, MD**

*George B. Boedecker Professor and Chair*

*Department of Emergency Medicine*

*Executive Director, Emergency Services*

*University of Colorado Health*

*Professor, Health Administrations*

*University of Colorado School of Business*



# The AGMC Experience





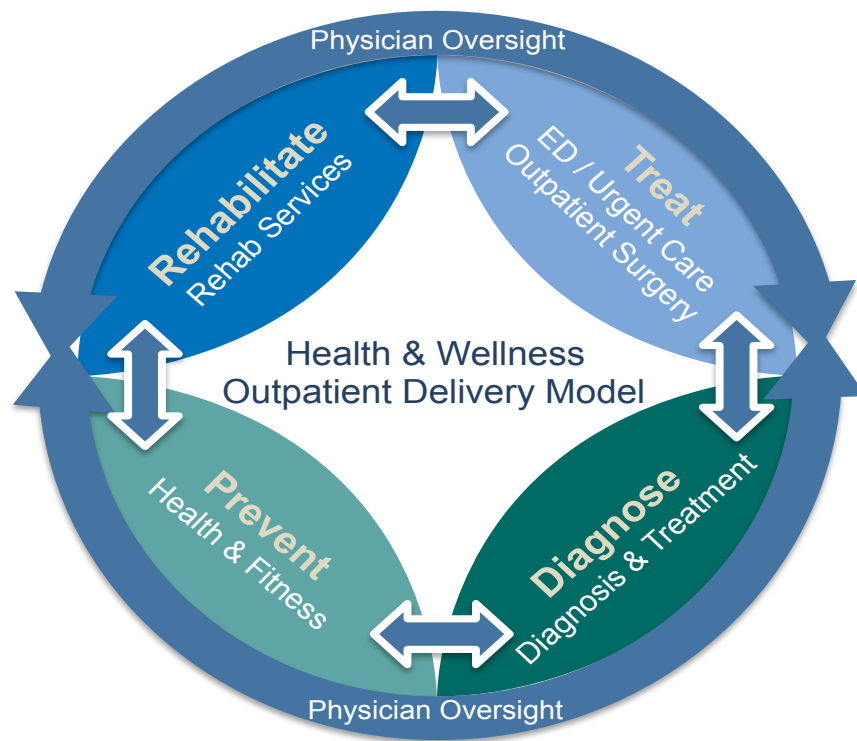
# CEO Tim Stover MD FACOG

- Wellness centers



# The Philosophy

## The Wellness Loop | Health & Wellness Centers



Diagnose. Treat. Rehabilitate. Prevent. Educate.

# HEALTH & WELLNESS CENTER OUTPATIENT DELIVERY MODEL

A health and wellness center is a multi-dimensional outpatient facility that brings together a wide range of clinical outpatient services, physicians, and retail oriented health services in an effort to improve the health and lives of the community the center serves. Common components of a health and wellness center include:

<b>Most Common</b>	Medical Fitness Center	<b>Good Potential</b>	Diagnostic Testing
	Therapy Services		Outpatient Surgery
	Cardiopulmonary Rehab		Free-Standing ED
	Spa Services		Conference Center
	Physician Offices		Chronic Disease Center
	Wellness Services		Integrative Medicine









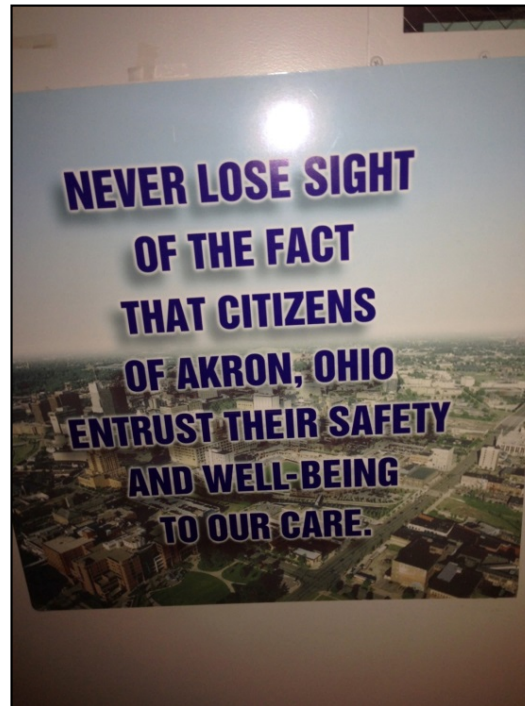
# AGMC FED Model

- Hospital affiliated
- All are staffed by board-certified EM physicians
- All facilities are open 24/7/365
- All facilities have lab, radiology, CT and x-ray 24/7 with MRI and US during business hours



# Our 2007 FED Goals

- Best quality care
- Outstanding patient satisfaction
- Outstanding operation metrics
- No residents



# Main Campus Emergency Department

- Urban tertiary care teaching center
- ED census: 60,000
- Emergency medicine residency (43 years!)
- Akron, Ohio

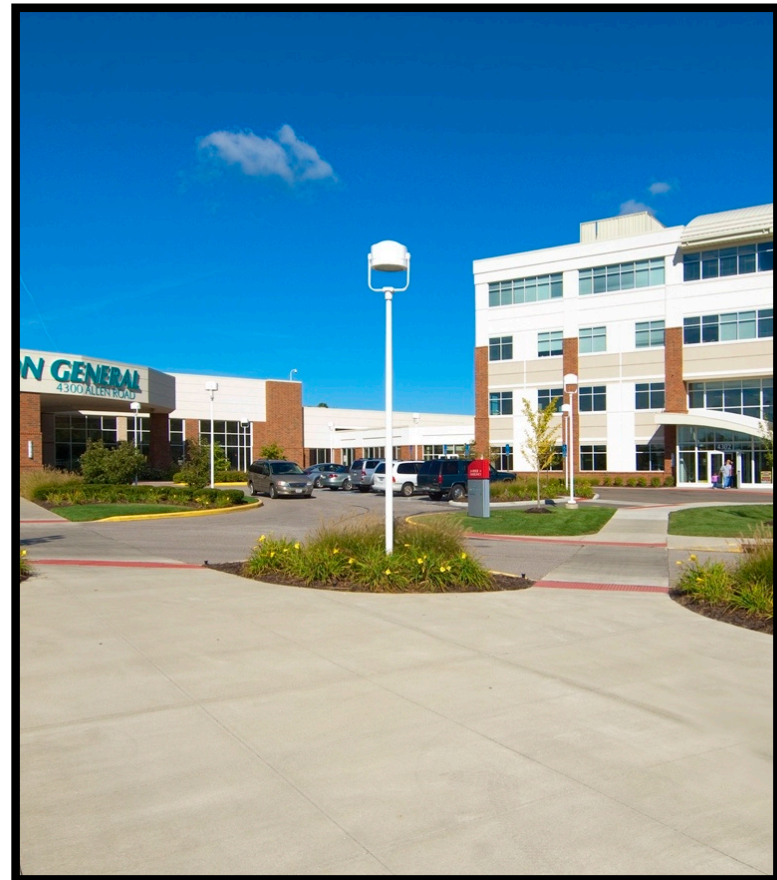




# Freestanding ED #1 – North Campus

- Opened July 1, 2007
- Visits per year: 20,000
- Distance from main ED: 12 miles/19 km north
- Patients arriving by ambulance: >1100

**Firestone**



# Freestanding #2 – West Campus

- Opened August 1, 2009
- Visits per year: 19,000
- Distance from Main ED: 9.6 miles/15 km west
- Patients arriving by EMS: > 1500
- Added Urgent Care within FED July 7, 2014
  - 7000 visits per year



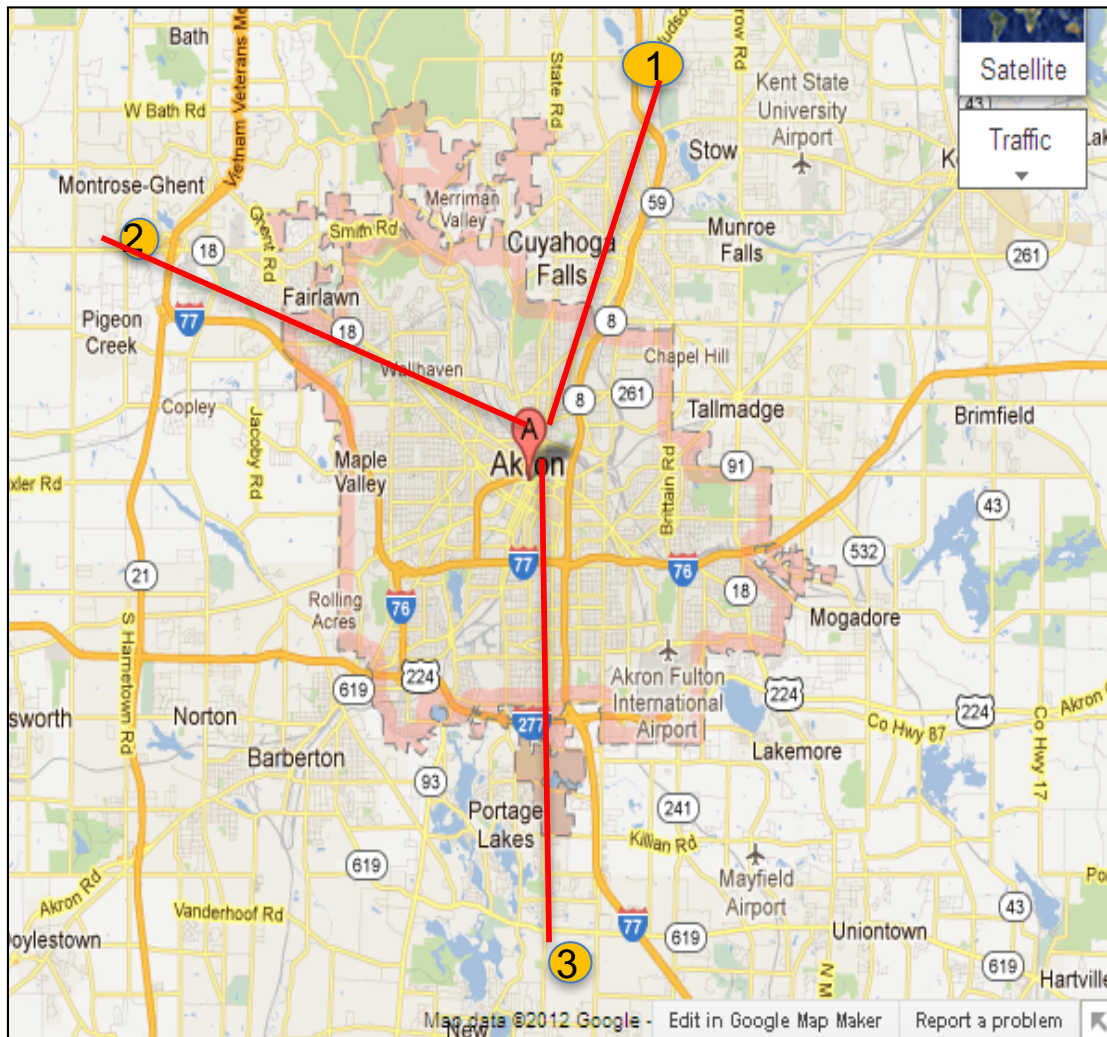
# Freestanding #3 – South Campus

- Opened March 19, 2012
- Visits per year: 18,000
- Distance from Main ED: 11.3 miles/ 7.0 km south
- Patients arriving by EMS: 900





# CCAG ED Locations



A = Main campus  
1 = North campus  
2 = West campus  
3 = South campus

# Outcomes

- Business
- Added academic opportunities



# Akron General ED Volumes

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Main	60631	58204	56507	56411	54941	55898	56420	53724	55010	57399	58112
Stow <sup>1</sup>		5806	15273	17815	20062	21259	20667	19123	18812	19665	20137
Bath <sup>2</sup>				4756	15202	15872	16177	15769	15374	15177	14439
Green <sup>3</sup>							10759	12626	14097	15877	16623
UC <sup>4</sup>									2646	7693	10296
Total	60631	64010	71780	78982	89205	93029	104023	101242	105939	115811	119607

1. Opened July 1, 2007
2. Opened August 1, 2009
3. Opened March 19, 2012
4. Urgent care opened July 8, 2014

Bath Patient Total  
 2013 – 15769  
 2014 - 18020  
 2015 - 22870  
 2016 - 24735





# Outcomes

- Grew faculty from 15 to 35
- Grew residency from 18 to 33
- Doubled ED volume
- Added 4 service lines
  - FED patients back into the system
- Increased market share
- Won awards
- Added academics
  - Helped P&T for EM faculty
  - Presented at national and international meetings

# Resident and Student Education

- Allows residents and students to rotate at a community site
- Single coverage
- No consultants
- Procedure exposure
- One on one with attending





# FSEDs are NOT Urgent Cares



# Initial Research Realities

- No funding
- No research staff
- No statistician
- No active studies from prior research director to build off of
- Need to publish and meet ACGME requirements
- Competitor resources



# Research Realities

- So how do we conduct research with no resources?
- What are the key research questions about FEDs?
  - Who goes to these facilities
  - How do you handle STEMI, Trauma, Stroke?
  - How sick are these patients?
  - Why do patients chose to go to an FED?

# Solution 1: Student Help





# Solution 2: Resident Help

**2014 International Conference on Emergency Medicine 2014**

**Non-Trauma Emergency Department Radiology Throughput: A Tertiary Care Center Compared to Three Freestanding Emergency Departments**

**AKRON GENERAL MEDICAL CENTER** **Northeast Ohio MEDICAL UNIVERSITY**

Ksenia Glik MD, Erin L. Simon DO, Jean Kokochak BS, Gregory Griffin, Dave Hayslip RN,BSN, Nicholas Jouriles MD.  
Akron General Medical Center, Department of Emergency Medicine; Northeast Ohio Medical University

**Results**

- Between 0900-1600, 465 CT with intravenous (IV) contrast, 1223 CT without contrast, 318 ultrasounds and 694 x-rays were analyzed.
- Between 1600-2100, 368 CT with IV contrast, 881 CT without contrast, 320 ultrasounds, and 2,760 x-rays were analyzed.
- Between 0900-1600 throughput in minutes were: CT with contrast 105 at FEDs, 152 at the UTC ED, (95% CI [0.8-92.2]),  $p < 0.05$ . CT without contrast were 59 at FEDs and 83 at the UTC ED (95% CI [30.2-39.0]),  $p < 0.001$ . Ultrasounds were 108 at FEDs and 106 at the UTC ED (95% CI [-57.8-50.6]),  $p = 0.895$ . Plain films were 348 at FEDs and 473 at the UTC ED (95% CI [85.3-164.3]),  $p < 0.001$ .
- Between 1600-2100 throughputs were: CT with contrast 184 at FEDs and 348 at the UTC ED (95% CI [66.6-263.1]),  $p < 0.001$ . CT without contrast were 69 at FEDs and 127 at the UTC ED (95% CI [39.6-77.0]),  $p < 0.001$ . Ultrasounds were 119 at FEDs and 172 at the UTC ED (95% CI [-94.0-128.9]),  $p = 0.176$ . Plain films were 687 at FEDs and 698 at the UTC ED, (95% CI [-35.0-57.1]),  $p = 0.64$ .
- For CT head without contrast the mean throughput times in minutes for each FED between the hours of 0900-1600 were: Green-57.79, Montrose-52.37, Stow-53.35. For the UTC ED the mean throughput times in minutes between the hours of 0900-1600 was 78.51.

**Discussion**

- FED facilities have significantly lower radiology throughput times for all except ultrasound.
- Between 1600-2100 when radiology staffing decreased, radiology throughput times increased. Shorter radiology times benefit ED patient care and impact length of stay.
- An onsite reading radiologist decreased the turnaround time for CT scans.

**Histogram of Time in minutes from order placement**

Normal Head CT with Contrast 8am - 4pm

Time in minutes from order placement

**FED vs. UTC ED 0900-1600**

Time in minutes

**FED vs. UTC ED 1600-2100**

Time in minutes



# Solution 3: Summer Research Fellow Help



# Solution 4: Statistician

- Local medical school
- Local Universities graduate program
- Collaboration with others who have resources



# Solution 5: Get involved

- Joined the FED section of ACEP
- Became actively involved with leadership
- Made connections and formed a multicenter FED research group
- ACEP task force creating national guidelines for FEDs a potential accrediting body



# Solution 6: Residency Director Support





# Solution 7: (most important) EM Chair Support





# Publications To Date

- Burke, R; Simon EL, Keaton B; Kukral L, Kiss TJ; Sanchez B; Jouriles N. Patient-reported reasons for seeking emergency care at a freestanding emergency department compared to a hospital-based emergency department. *Am J of Emerg Med*. In press.
- Simon E, Dark C, Meek C. Variation in hospital admission rates between a tertiary care and two freestanding emergency departments. Accepted 10.28.17. In press. *Am J of Emerg Med*.
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- Simon E, Kovacs M, Hayslip D, Jouriles N. Characterizing Children Presenting to Three Freestanding Emergency Departments. *Am J of Emerg Med*. 2016 Oct; 34(10): 2045-2048.
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- Simon, EL, Griffin P, Jouriles N. The Impact of Two Freestanding Emergency Departments on a Tertiary Care Center. *J Emerg Med*. 2012 Dec;43(6):1127-31

# FEDs and Education



Conclusion: FEDs provided essential core residency skills based on ACGME program requirements in areas of ED throughput, communication skills, efficiency, procedures, and multitasking.

# FEDs and the EM Resident: A Valuable Part of Resident Education

- Residents viewed their FED experience as valuable to their overall education
- The FED rotation served as a valuable learning experience in several core areas of EM residency education and ACGME goals







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doi:10.1016/j.jemermed.2012.02.023

# ***Administration of Emergency Medicine***

## **THE IMPACT OF TWO FREESTANDING EMERGENCY DEPARTMENTS ON A TERTIARY CARE CENTER**

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Conclusion: Main campus [temporarily!] decreased but system wide volumes increased



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<http://dx.doi.org/10.1016/j.jemermed.2013.08.089>

\_\_\_\_\_ **Brief**  
\_\_\_\_\_ **Reports**

**DOOR-TO-BALLOON TIMES FROM FREESTANDING EMERGENCY DEPARTMENTS  
MEET ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION REPERFUSION  
GUIDELINES**

Erin L. Simon, DO,<sup>\*</sup> Peter Griffin, BS,<sup>†</sup> Kantha Medepalli, BS,<sup>‡</sup> Gregory Griffin,<sup>\*</sup> Carolyn J. Williams, MS,<sup>§</sup>  
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Conclusion: Median transport time from FED to catheterization lab was 21 minutes (89.3% <30 minutes). 78.7% had D2B times of <90 minutes.



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<http://dx.doi.org/10.1016/j.jemermed.2014.09.005>

Original  
Contributions

## FREESTANDING EMERGENCY DEPARTMENTS AND THE TRAUMA PATIENT

Erin L. Simon, DO,<sup>\*</sup> Kantha Medepalli, MD,<sup>†</sup> Carolyn J. Williams, MS,<sup>‡</sup> Andrew Yocum, MD,<sup>†</sup> Eric Abrams, MD,<sup>†</sup>  
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Conclusion: Like STEMI, our FED trauma care met ACS COT standards for the 181 patients that met Level 1 or Level 2 Trauma Team activation criteria





## Original Contribution

### A comparison of acuity levels between 3 freestanding and a tertiary care ED

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#### ABSTRACT

**Introduction:** Freestanding emergency departments (FEDs) have grown in popularity. They often provide emergent care in areas distant from other EDs. Investigations and research to characterize the operation and dynamics of FEDs are needed.

This study characterizes the severity of illness seen at FEDs and compares it with a hospital-based urban tertiary care ED using the emergency severity index (ESI), a quantification of patient acuity.

**Methods:** Patient ESI levels were analyzed retrospectively over 1 year for a single hospital system with 1 main urban hospital-based ED and 3 FEDs. Data analysis was completed using analysis of variance with and without time as a factor.

**Results:** The average ESI level at the main ED (3.04) was lower than the FEDs, respectively (3.42, 3.22, and 3.38) ( $P < .001$ ). Patient ESI levels were significantly different between FEDs ( $P < .001$ ).

**Conclusion:** The main ED demonstrated lower ESI levels and thus higher acuity than the 3 affiliated FEDs. There were significantly different acuity levels between the main ED and 3 FEDs as well as between individual FEDs.

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Conclusion: Acuity was different. Note: Main campus is adult only, trauma, STEMI, stroke, teaching

# Lessons Learned

- You can turn a business project into research success
- When resources are limited, utilize every avenue of (free) help available
- Build your research niche
- Show the hospital the opportunity that has been created



# Questions?

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