

The surgeon has no role in trauma resuscitation in the ED

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The surgeon who turns up could be a
colo-rectal surgeon...



Trauma is increasingly a non-surgical disease

- Most trauma patients do not need surgery
 - DPL has been replaced by FAST
 - Other resuscitation procedures do not need a surgeon
 - CT imaging has replaced surgical decision making
 - CT imaging increasingly results in non-operative approach
- When a patient requires surgery it is usually obvious and it does not require a surgeon to make the decision

Trauma is increasingly a non-surgical disease

- DCCM patient database
 - Only 20% of trauma patients come to us from the resuscitation room via the operating theatre
- The types of surgery they had:
 - Neurosurgery 50%
 - Orthopaedic surgery 15%
 - Other (thoracic, plastic, vascular) 15%
 - Abdominal surgery 10%
- If you really want a surgeon in the ED then it should be a neurosurgeon

The evidence

- I was surprised at the number of studies looking at the impact of a surgeon on trauma resuscitation in the ED
 - They are all published by surgeons
 - The outcome differences reported are all surrogate
 - None show a difference in important outcomes
- Conclusion: there is nothing in the evidence that supports the presence of a surgeon during trauma resuscitation in the ED

Surgeon in the resuscitation room #1

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1: Am Surg. 2001 Jul;67(7):611-4. Related Articles, Links

Trauma attending in the resuscitation room: does it affect outcome?

Porter JM, Ursic C

Department of Surgery, Northeastern Ohio Universities College of Medicine and St. Elizabeth Health Center, Youngstown, USA.

Although there are no Class I data supporting the regionalization of trauma care the consensus is that trauma centers decrease morbidity and mortality. However, the controversy continues over whether trauma surgeons should be in-house or take call from home. The current literature does not answer the question because in all of the recent studies the attendings who took call from home were in the resuscitation room guiding the care. We believe the correct question is: Does the presence of the trauma attending in the resuscitation room make a difference? At a university-affiliated Level II trauma center data from the trauma registry, resuscitation room flowsheet, and dictated admission notes were reviewed on all patients over a 6-month period. Data points were: attending present in the resuscitation room, standard demographics, resuscitation room time, time to operating room (OR), time to CT scan, length of stay, complications, and mortality. A total of 943 patients were studied with 216 (23%) having the attending present in the resuscitation room and 727 (77%) without the attending present. The groups were similar in terms of age, sex, Injury Severity Score, percentage Injury Severity Score greater than 15 (16-17.1%), and mechanism of injury (24-29% penetrating). Of all the data points studied only time to the OR had a statistically significance difference ($P < 0.05$) with it taking 43.8 minutes (+/-20.1) when the attending was present and 109.4 minutes (+/-107) when the attending was absent. There were also no missed injuries, delays to the OR, or inappropriate workups when the attendings were present. Only the time to the OR reached statistical significance. The time to the OR is indicative of the decision-making process in the resuscitation room, and it is in this area that the attendings' presence is the most useful. Also, we believe that it is important that there were no missed injuries, delays to the OR, or inappropriate workups when the attendings were present in the resuscitation room. This again speaks to the decision-making process. We believe that these data support the need for the attending to be present in the resuscitation room to facilitate accurate and timely decisions regardless of whether they take the call from home or in-house.

Done Internet

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Surgeon in the resuscitation room #1

- Retrospective, trauma database, six months
- Compared trauma calls that had surgeon either present or not present
 - Patient demographics
 - Time in resus room
 - Time to CT scan
 - Time to OR
 - Hospital length of stay
 - Complications
 - Mortality

Surgeon in the resuscitation room #1

- They found no difference in
 - Patient demographics
 - Time in resus room
 - Time to CT scan
 - Hospital length of stay
 - Complications
 - Mortality
- They found a shorter time to OR and no missed injuries when surgeon was present
 - No surprise
 - Surrogate measure

Surgeon in the resuscitation room #2



Surgeon in the resuscitation room #2

- Comparative study of two trauma centres
 - One with surgeon in hospital (IH)
 - One with surgeon out of hospital (OH)
 - 21 month period
- Results
 - Time in resus was shorter in IH group
 - Time to OR was shorter in IH group for penetrating trauma, but not for blunt trauma
 - No difference in mortality

Surgeon in the resuscitation room #3

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1: J Trauma. 1997 Mar;42(3):490-5; discussion 495-7.

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Impact of the in-house trauma surgeon on initial patient care, outcome, and cost.

Luchette F, Kelly B, Davis K, Johannigman J, Heink N, James L, Ottaway M, Hurst J

Department of Surgery, University of Cincinnati College of Medicine, OH 45267-0558, USA.

BACKGROUND: The purpose of this study is to evaluate the effect of having attending trauma surgeons with added qualifications in surgical critical care present for the initial resuscitation at a regional trauma center. **METHODS:** This study is a retrospective review of patients admitted between August of 1994 and December of 1995 from our trauma registry. The patients were categorized by the call preference of the admitting physician as in-house (IH) or call-back from home (CB), day of admission (weekend vs. weekday), time of admission (AM VS. PM), and a value of the injury severity scale ≤ 15 or > 15 . Demographics, admission vital signs, Injury Severity Scale, Glasgow Coma Score, and elapsed time to diagnostic, therapeutic, and/or operative interventions were studied. The effect on intensive care unit length of stay, mortality, and hospital cost for resuscitation were also studied. **RESULTS:** The study population consisted of 1,043 patients. The IH and CB groups each included two attending surgeons. IH significantly reduced the average time to completion of diagnostic peritoneal lavage (22 vs. 34 minutes; $p < 0.05$), therapeutic intervention (21 vs 38 minutes; $p < 0.05$), and transport to the operating room (206 vs. 312 minutes; $p < 0.05$) during the AM compared with CB. There was no difference in these times for the PM admissions. There was no significant difference in intensive care unit length of stay. Among patients with severe head and thoracoabdominal injury (Abbreviated Injury Score > 4 and 3, respectively) there was no difference in mortality. Analysis of cost for emergency room resuscitation in severely injured patients (Injury Severity Score ≥ 15), seen during weekdays, was significantly less when evaluated by IH (IH = \$5,097 vs. CB = \$6,779; $p < 0.05$). **CONCLUSIONS:** During the initial resuscitation of patients with severely injured during the weekdays, IH significantly reduced the cost, and elapsed time to diagnostic testing, therapeutic intervention, and to the operating room, respectively. IH reduced fatalities compared with CB.

PMID: 9095117

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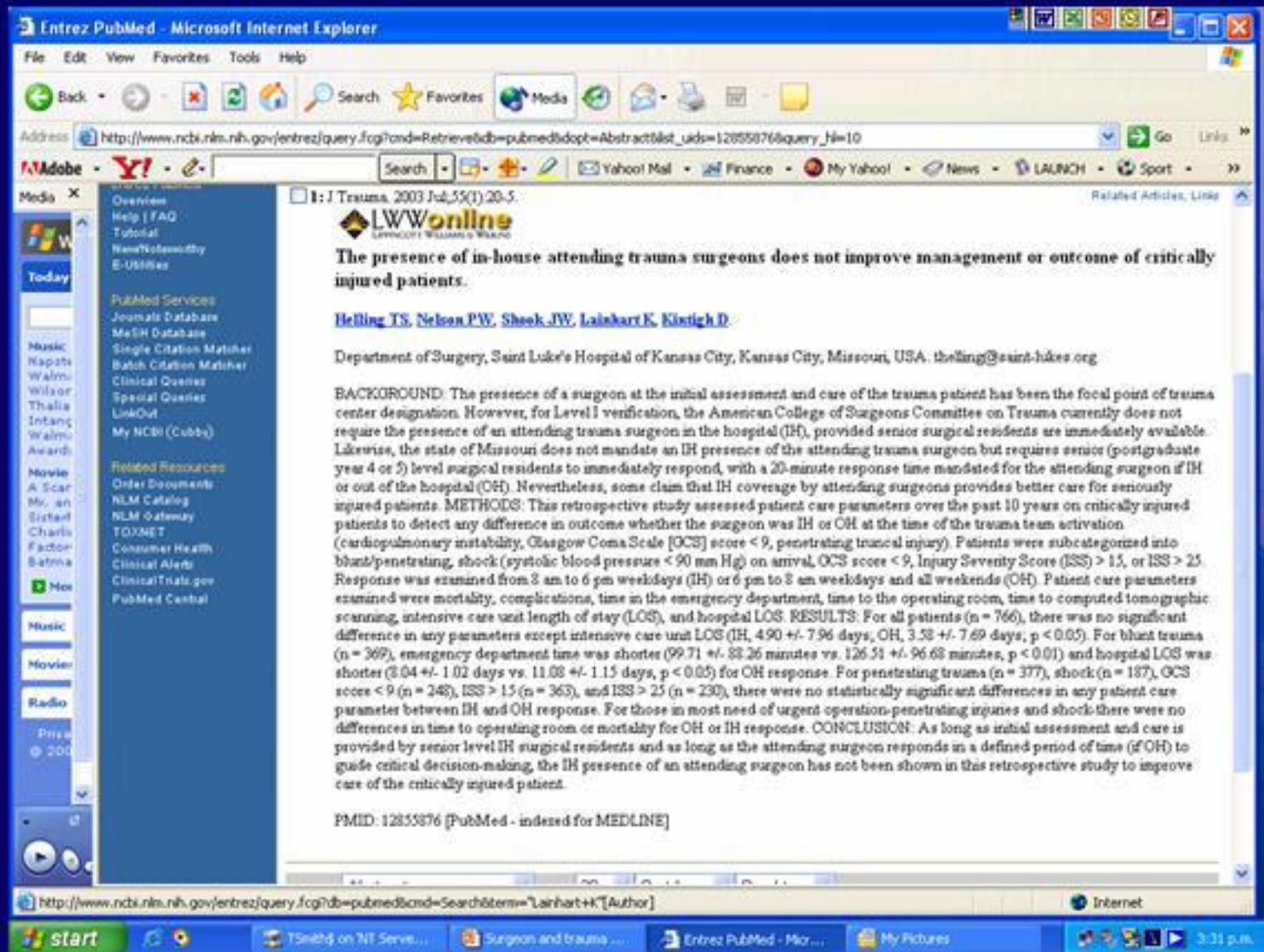
**Rather perturbed when Ian Civil
allocated me this topic**



Surgeon in the resuscitation room #3

- Retrospective review
 - 16 months (1043 patients)
 - 4 surgeons, 2 in hospital (IH) and 2 out of hospital (OH)
- Results
 - Time in resus shorter in IH group
 - Time to OR shorter in IH group
 - No difference in mortality or hospital length of stay

Surgeon in the resuscitation room #4



Surgeon in the resuscitation room #4

- Retrospective review (10 years) of in hospital (IH) vs out of hospital (OH) surgeon
- No difference in
 - Time in resuscitation room
 - Time to CT scanning
 - Time to OR
 - Hospital length of stay
 - ICU length of stay
 - Mortality

Surgeon in the resuscitation room #5

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1: J Trauma. 2002 Sep;53(3):494-500; discussion 500-2.

LWWonline
Lippincott Williams & Wilkins

In-house trauma surgeons do not decrease mortality in a level I trauma center.

Fulda GJ, Tinkoff GH, Giberson F, Rhodes M

Department of Surgery, Christina Care Health Services, Wilmington, Delaware, USA. gfulda@christianacare.org

Related Articles, Links

BACKGROUND: The value of an in-house trauma surgeon is debated. Previous studies focus on comparing in-house and on-call surgeons at different institutions or different periods in time. The purpose of this study was to simultaneously evaluate in-house and on-call trauma surgeons in a single Level I trauma center and to determine the impact of in-house trauma surgeons on the mortality of severely injured patients. METHODS: All records were reviewed for patients classified as major resuscitations from July 1997 through November 1999. Multiple logistic regression was performed to determine predictors of mortality on the basis of trauma surgeon status (in-house vs. on-call) and response time, while controlling for Injury Severity Score (ISS) and Revised Trauma Score. RESULTS: Of the 4,278 admissions, 537 were trauma codes. Mean ISS was 20.16 +/- 11.59. There was no difference between groups admitted by in-house surgeons versus on-call surgeons with respect to ISS or Revised Trauma Score. Mortality for the group was 24.8% (133 of 537); no statistical difference existed between observed and expected mortality by TRISS. The average response time was 3.96 minutes for the in-house group and 14.70 minutes for the on-call group ($p < 0.001$). Neither the call status nor the response time of the trauma surgeon significantly decreased emergency department or hospital mortality. There was a trend for improved outcome in those patients cared for by an in-house surgeon who were upgraded to a code, transferred into the institution, admitted during the night, or neurologically impaired. This trend did not reach statistical significance. CONCLUSION: When the trauma surgeon was rapidly available (< 15 minutes), there was no difference in emergency department or hospital mortality between in-house and on-call trauma surgeons. Selected subgroups of severely injured patients may benefit from an in-house trauma surgeon. If trauma surgeons are not readily available in an institution, an in-house call policy may be necessary for the prompt resuscitation of critically ill patients.

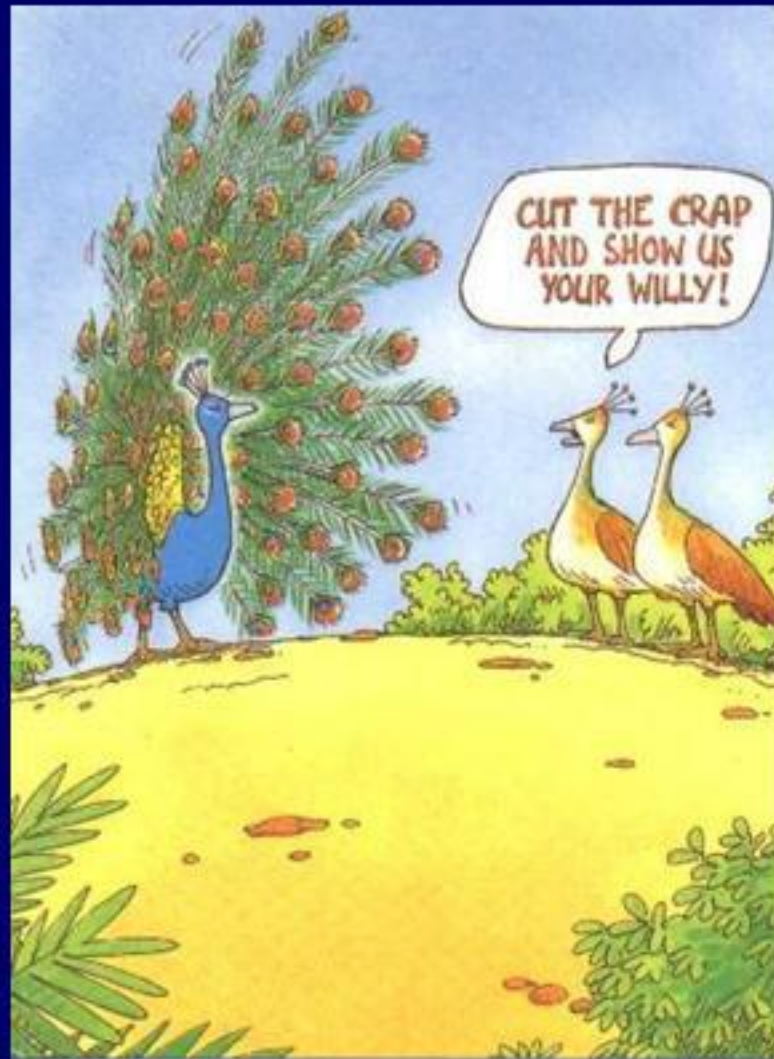
Surgeon in the resuscitation room #5

- It is getting boring now...
- Yet another comparison of IH vs OH surgeon
- Yet more findings of no difference in any of the variables measured

The evidence is clear...

- The presence of the surgeon in the resuscitation room speeds time to the OR (these studies were all from the US with high rates of penetrating trauma)
- BUT - there was no difference in any meaningful outcomes like mortality, complications, hospital length of stay or ICU length of stay
- Surrogate outcomes are no longer acceptable
- It is meaningful outcomes that are important
- It is time to face the truth - there is no good evidence that the surgeon has a role in trauma resuscitation in the ED

I hope I have made you think about
what it is that is important...



I hope I have opened your eyes ...



The surgeon has no role in trauma resuscitation in the ED



"Nurse, get on the internet, go to SURGERY.COM, scroll down and click on the 'Are you totally lost?' icon."

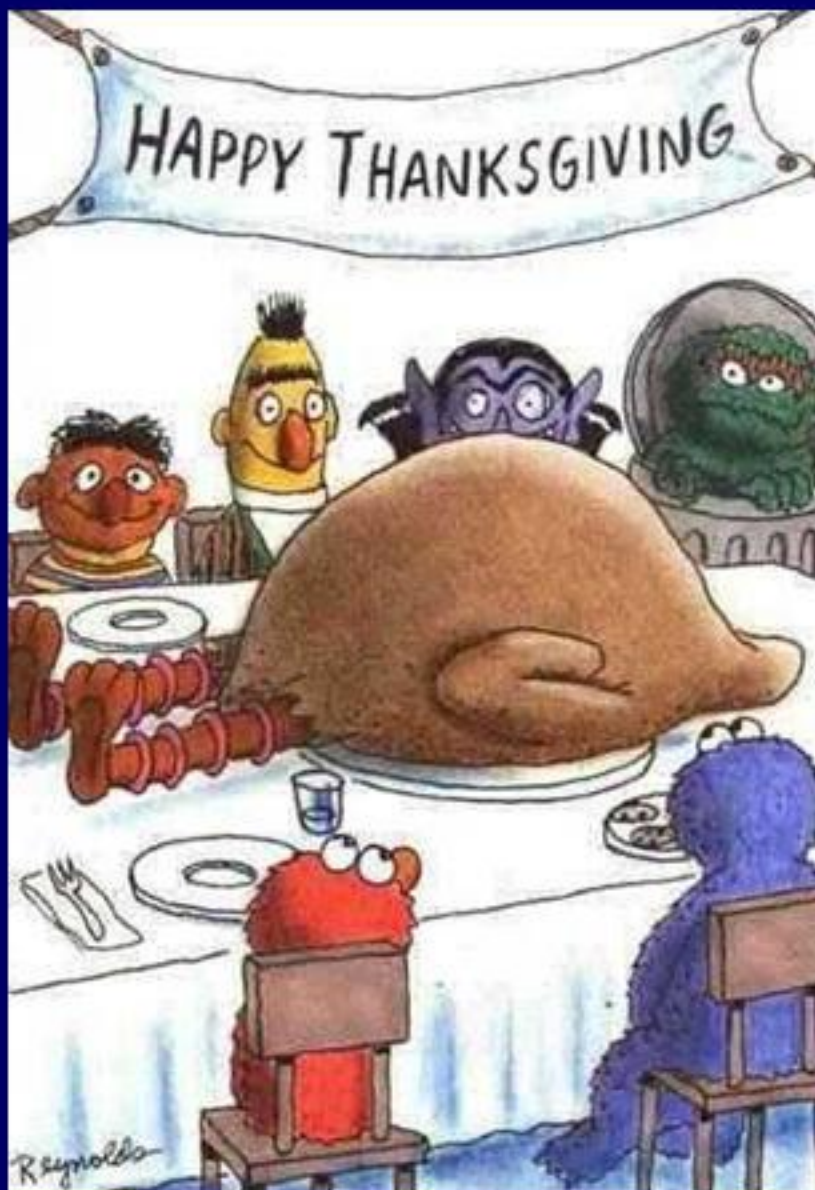
Thanks a lot Ian...



Thanks a lot Ian...

- The conference equivalent of a rugby hospital pass
- An impossible task to successfully debate this topic in front of an audience containing significant numbers of surgeons with a strong interest in trauma
- I feel a bit like a sacrificial turkey...

A feel a bit like a sacrificial turkey...



I am always up for a challenge

- I am going to demonstrate that:
 - There is nothing about trauma resuscitation that is specifically surgical
 - Trauma is increasingly a non-surgical disease
 - Surgeons are increasingly absenting themselves from trauma resuscitation
- I am going to show that:
 - What evidence exists shows that having a surgeon present in ED makes no change to any important outcome markers
- Conclusion was easy – the surgeon has no role in trauma resuscitation in the ED

There is nothing about trauma resuscitation that is surgical

- Resuscitation
 - Airway control
 - Breathing support
 - Circulatory support
 - Some procedures
 - Diagnosis of injuries
- Communication
- Forward planning
- Team approach



What is that surgeons actually do?

- They operate on patients
- They do long ward rounds with large numbers of trainees and students in tow
- They wear suits and ties
- They do outpatient clinics
- They very rarely turn up to trauma calls
 - They have already decided they don't have a role
 - They have absented themselves
 - The 'odd exception'
- They don't resuscitate patients

Anyway, what do we mean by a surgeon?

- I am presuming we mean a general surgical specialist
- Specialist trauma surgeons do not exist in New Zealand
- The general surgeon is disappearing
- Sub-specialisation is increasingly the norm
 - Hepatobiliary surgeon
 - Head and neck surgeon
 - Breast surgeon
 - Vascular surgeon
 - Colo-rectal surgeon