A crisis in emergency care – the Institute of Medicine

REPORT BRIEF • JUNE 2006

THE FUTURE OF EMERGENCY CARE IN THE UNITED STATES HEALTH SYSTEM

If one were to judge solely from popular TV shows, the nation's emergency care system is in fine shape. Its doctors, nurses, and ambulances personnel are dedicated and competent professionals who save lives with their expertise and state-of-the-art equipment and are always ready to come through for a crunch. And, indeed, there is a great deal of truth to this picture. Our emergency and trauma care system has made tremendous strides over the past few decades, and today it is much safer than any time that has been ten or twenty years ago would have been conceivable. But underneath the surface, a national crisis in emergency care has been brewing and is now beginning to come into full view. Emergency departments (EDs) across the country are overcrowded, understaffed...
“Hospital based emergency care - At the Breaking Point”

If you are one of 114 million patients visiting an emergency department today, you would experience…

• **Overcrowding**: 40 percent of hospitals report ED overcrowding on a daily basis

• **Boarding**: patients waiting 48 hours or more for an inpatient bed

• **Variability in Competency**: inconsistent across all emergency care roles

“A crisis in surgical care in America

Critical shortage of OB/GYN, trauma, orthopedic, plastic, neurosurgery, and general surgeons resulting from:

• Rising medical liability

• Earlier retirement

• Increased use of ED for primary care by underinsured

• A trend to practice in ambulatory surgery centers

A challenge of high demand and insufficient capacity
England – problems we don’t discuss

- A report in 2009 showed that 750,000 English patients were awaiting hospital admission for which no bed was available.
- Patients suffer complications while on the waiting list — a recent English judge ruled “access to a waiting list is not access to care”.
- Several hospitals in the UK have recently been shuttered from inadequate emergency care protocols—about 400 more people died at Stafford Hospital between 2005 and 2008 and a review from the NHS revealed that there was often no experienced surgeon available to that hospital during the night.

Japan and challenges in emergency care

JAPAN – 8.2% of GDP, 127 million citizens, 83% government expenditures, compulsory insurance with a government sponsored plan.

More than 14,000 emergency patients were rejected at least three times by Japanese hospitals before getting treatment in 2007, according to a government survey. In the worst case, a woman in her 70s with a breathing problem was rejected 49 times in Tokyo, before she died awaiting treatment.

Johns Hopkins Hospital, taking advantage of Japan’s dissatisfaction with public health care, launched a clinic in Tokyo that will charge as much as $17,000 for a 3 day medical checkup.
The emergency surgeon internationally

1) Acute care: European model blending trauma surgery, neurosurgery, orthopedics and emergency surgery
2) The original “Acute care trauma surgeon” model unlikely to help with ED overcrowding and boarding, and has been opposed by AANS
3) Surgical hospitalist focuses on care for general surgery patients

"A growing crisis in patient access to emergency surgical care"

The single most important factor shaping the surgical workforce issue today is declining reimbursement
Crisis in General Surgery: a perfect storm

- Health care finance reform - declining reimbursement
- ACGME 80-hour resident workweek
- Continued sub-specialization (fragmentation) of general surgery
- Supply and demand mismatch

The challenges in emergency surgical care at academic centers

- Few economic or academic incentives exist
- Taking call = unpredictability & schedule disruptions
- Diversity of emergency diagnoses leaves some surgeons feeling uncomfortable caring for diseases outside their usual practice
- 24-hour call structure yields challenges in continuity of care and communication
- Geographic barriers with faculty spread across multiple campuses
- Decreased quality of life and increased stress
The Surgical Hospitalist: A New Model for Emergency Surgical Care

John Maa, MD, FACS, Jonathan T Carter, MD, Jessica E Gonsell, MD, Robert Wachter, MD, Hobart W Harris, MD, MPH, FACS

BACKGROUND: Quality of acute surgical care in the US is threatened by a shortage of surgeons performing emergency procedures because of rising costs of uncompensated care, liability concerns, declining reimbursement, and lifestyle considerations. In July 2005, we initiated a greenhouse model at our medical center into a hospitalist model to improve patient access to surgical care.

STUDY DESIGN: We hypothesized that a surgical hospitalist program could improve timeliness of care, emergency department (ED) efficiency and physician satisfaction, resident supervision, continuity of care, and revenue generation. We reviewed our program after 1 year, including patient demographics, diagnosis, and time to consult.

RESULTS: There were 952 patients during 1 year. Patients ranged from 17 to 100 years of age and presented with abdominal pain (60%), infection (18%), malignancy (6%), hernia (5%), and trauma (3%). Fifty-seven percent of consults originated from the ED, 8% came from other surgeons. Mean time to consult was 20 minutes. A survey of ED physicians reported shorter ED length of stay, better patient satisfaction, improved professionalism and resident supervision, and better overall quality of care. Average waiting time for patients with acute appendicitis to undergo operation was reduced from 16 ± 10 hours to 8 ± 4 hours (p < 0.05). Forty-two percent of consults resulted in an operative procedure, and revenue increased as the number of billable consults rose by 106%.

CONCLUSIONS: The surgical hospitalist model provides an effective way for general surgeons to provide timely and high-quality emergency surgical care and enhance patient and referring provider satisfaction.

(J Am Coll Surg 2007;205:704–711. © 2007 by the American College of Surgeons)
Principles of hospitalist program

1) Team based group practice-improved continuity of care
2) Timeliness –consult times of 20 min
3) Improved documentation / revenue
4) Enhanced resident supervision and surgical education
5) Improved care through triage of complex consults to experts

UCSF Surgical Hospitalist program

Created July 1, 2005

A new service, staffed by 3 full-time surgeons, was created using a hospitalist model of care in order to meet the following objectives:

- improve timeliness of patient evaluations
- improve Emergency Department flow
- improve professionalism, and consulting physician satisfaction.
- improve patient safety, by minimizing hand-offs and improving the continuity of surgical care.
UCSF Surgical Hospitalist program

- increase resident supervision and attending involvement in care delivery, and improve surgical education.
- minimize disruption to the elective practices of other members of the faculty.
- increase Departmental revenues for non-operative care delivered by General Surgery Service.
- create a new model for a financially self-sufficient service to fulfill the academic medical center mission.

UCSF Department of Surgery
Surgical Hospitalist program
First Year Statistics

Total number of consults: **853**
Average per day: **2.3**
Source of consults:
- Emergency Department: 57 %
- Medicine: 20 %
- Transfers: 6 %
- Surgical Specialists: 8 %
Consults requiring surgery: 42 %
Most common procedures:

- Appendectomy: 29%
- Incision & drainage, abscess: 19%
- Exp laparotomy, LOA, intestinal resection: 19%
- Cholecystectomy: 11%
- Complex liver/ spleen/ pancreas: 7%

Average time to consult: **20 mins**

### Patients triaged to general surgery specialists

<table>
<thead>
<tr>
<th>Service</th>
<th>Needed consult from a senior specialist</th>
<th>Needed surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced laparoscopic</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Bariatric</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Breast</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Colorectal</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Endocrine</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Foregut</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Hepatobiliary</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Thoracic</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>37</strong></td>
<td><strong>29</strong></td>
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</table>
Survey of Emergency Department providers after 6 months of UCSF surgical hospitalist care

Professionalism of consulting surgeons
Overall quality of care
Patient satisfaction with surgical care
Supervision of surgical residents
Emergency Department length-of-stay
Timeliness of surgical care

Worsened dramatically
Worsened
No change
Improved
Improved dramatically

Financial reimbursement for nonoperative care

<table>
<thead>
<tr>
<th>Date</th>
<th>Level</th>
<th>Care Description</th>
<th>RVU</th>
<th>Cost</th>
<th>Code</th>
<th>Ratio</th>
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<tbody>
<tr>
<td>12/6</td>
<td>Level 4</td>
<td>Admit from office</td>
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<td>$260</td>
<td>1.17</td>
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<tr>
<td>12/7</td>
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<td>Inpt initial care 99223</td>
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<td>$456</td>
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<td>$162</td>
<td>1.12</td>
<td></td>
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<tr>
<td>12/15</td>
<td>Exp lap/ hernia</td>
<td>18 RVU and $4800</td>
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</tr>
</tbody>
</table>

- Nonoperative care is $1840, and RVU is 13
Dramatic increase in revenue from improved documentation of care

An increase in both the number and complexity of consults

A new method to improve care and address reimbursement challenges

- 24-fold increase in revenue Year 1, 52-fold in Year 2
- The total revenue from notes alone increased 415% in the first year, and 591% in the second year.
- Ultimately yielded 20% of the overall program support.
- Efficiencies of the hospitalist billing model
  1) Increased billing complexity and revenue, particularly for non-operative care
  2) Improved communication with consultants
  3) Improved compliance with SCIP measures
  4) Enhanced medical center facility fee revenue
Surgical Hospitalists – Sutter Medical Center, Sacramento CA, Michael Omara and Leon Owens

<table>
<thead>
<tr>
<th>Procedure, Category</th>
<th>2007 (Before)</th>
<th>2008 (Surgical Hospitalists)</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Lap Appendectomy, Total Cost</td>
<td>$10, 600 ± 5300 (N=146)</td>
<td>$8000 ± 3400 (N=125)</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Open Appendectomy, Total Cost</td>
<td>$11, 000 ± 8000 (N=48)</td>
<td>$7200 ± 5100 (N=32)</td>
<td>0.007</td>
</tr>
<tr>
<td>All Appendectomies, Total Cost</td>
<td>$10, 700 ± 6000 (N=194)</td>
<td>$7800 ± 3800 (N= 157)</td>
<td>&lt;0.000</td>
</tr>
<tr>
<td>Lap Cholecystectomy, Total Cost</td>
<td>$14, 500 ± 10, 500 (N=206)</td>
<td>$12, 300 ± 7400 (N=176)</td>
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<tr>
<td>Exploratory Laparotomy, Total Cost</td>
<td>$30, 100 ± 24, 600 (N=158)</td>
<td>$32, 500 ± 30, 500 (N=43)</td>
<td>0.81</td>
</tr>
</tbody>
</table>

Positive impact of surgical hospitalist on surgical education

Hospitalist attendings round daily, enhancing continuity of care, trainee supervision and education of residents and medical students.

Introduction of the hospitalist model resulted in significant improvement in medical student clerkship perceptions of:

1) observation of physical exam skills
2) feedback
3) faculty clinical teaching
4) the clerkship as a whole
Quality improvement: appendectomy waiting times

- Average waiting time for patients with acute appendicitis to undergo operation was reduced from $16 \pm 10$ hours to $8 \pm 4$ hours
- Surgical Care Improvement Project and UCSF Medical Center publicly reported outcomes
  a) Antibiotic administration within 1 hr of incision
  b) Antibiotic discontinuation within 24 hr of skin closure

Surgicalist collaborations with surgical specialists
Physics of a hospital – what is the rate limiting step?

Quality Improvement: Emergency OR suite

Unsnarling Traffic Jams in the O.R.

Surgeons Lose Coveted Perk
In Scheduling Procedures;
Faster Service for Emergencies
August 10, 2005, Page D1
OR scheduling in surgical hospitalist programs

- Should the SH have block time?
  - Only if the volume of urgent cases justifies it
  - Many programs have had the SH schedule cases during unused time in other surgeons' blocks each day
- Surgicalist may want to start more cases at night
  - Could relieve daytime OR log jams
  - Can OR staff and anesthesia handle this?

Promoting increased OR efficiency
Hallmarks of success for an academic hospitalist program

1) Timeliness—consult times of 20 min
2) Triage of complex consults for expert care
3) Improved documentation / revenue
4) Team based group practice
5) Enhanced resident supervision and surgical education

Limitations of this model

• Generalizability to nonacademic centers
• Dependent upon regionalization of trauma
• Lengthy on call period
• Level of financial center support undetermined
Future directions of surgical hospitalist

- Assess length of stay, program costs and impact on patient satisfaction
- Demonstrate improved outcomes in care
- Patient safety collaborations between medicine and surgery
- Address ED overcrowding and boarding

Surgical hospitalist programs in America

- Experience suggests we’re early in a phase of rapid expansion of this practice model
  - Over 300 such practices in operation now, and hundreds of institutions actively considering this model
  - A prediction: Absent any dramatic healthcare reform, this model will grow almost as rapidly as the medical hospitalist model has grown.

Number of medical hospitalists

1995 2009

-300

-30,000

John Nelson
Short term solution

- Perhaps one way to enhance emergency general surgery is through reorganization into a surgical hospitalist model to maximize patient safety and quality
- Care in emergency settings makes one a better elective surgeon
- Ultimately, I believe the “acute care trauma surgery” and “surgical hospitalist” models will merge into the “emergency surgeon”.

Longer term solutions for the national crisis in emergency care

- Optimize reimbursement and other incentives
- Tort reform
- Regionalization of trauma care
- Address uncompensated care in the ED
- Pay for Performance measures for ED
- Novel medicine - surgery hospitalist collaborations


Conclusions

The surgical hospitalist model provides solutions to the crisis in timely access to emergency care

- On site availability is critical to the provision of high quality, cost-effective care
- Promotes professionalism
- Improved surgical education
- Enhanced revenue collection