The Evolving Role of Emergency Departments in the United States

RAND Corporation

May 20, 2013
What Is RAND?

• An independent, non-partisan, nonprofit research organization devoted to objective policy analysis

• Advisors to senior decision-makers in the U.S. and around the world

• A center for education and training
Study Team

- Kristy Gonzalez Morganti
- Sebastian Bauhoff
- Janice Blanchard
- Mahshid Abir
- Neema Iyer
- Alexandria Smith
- Joseph V. Vesely
- Edward Okeke
- Mary Vaiana
- Art Kellermann
“The Most Costly Care There Is”*

• “Emergency room care is some of the most costly care there is. But what do the MaineCare recipients care? The cost is completely covered by the taxpayers.”
  [Link](http://www.maine.gov/legis/house_gop/.../100926_Medicaid.htm)

• “Children without health insurance tend to go to emergency rooms when they get sick - which is the most costly care there is.”
  [Link](http://www démocratieleader.gov) 5/5/09

Source: First page of a Google Search, December 8, 2012
“The Most Costly Care There Is”*

And even if your friend's LIE was true, treatment in the emergency room is by far the most costly care there is. 3) Aetna's CEO makes $20 million ...


Aug 7, 2009)

* First page of a Google search, April 21, 2013
Understanding the Evolving Roles of Emergency Departments

- What proportion of non-elective admissions enter hospitals through the ED?
- What share of admission decisions are made by EPs?
- How often do office-based physicians send patients to ED for potential hospitalization?
- Does type of insurance influence hospital admission decisions?
- Does availability of care coordination influence the likelihood that a patient will be admitted from the ED?
- What role do EDs play in reducing preventable admissions?
Overview of this Presentation

Approach

Key findings

Policy Implications
Data Sources

• Quantitative analysis

<table>
<thead>
<tr>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC’s National Hospital Discharge Survey (NHDS)</td>
</tr>
<tr>
<td>CSHSC “s “Community Tracking Study” (CTS) Household and Physician Surveys</td>
</tr>
<tr>
<td>HCUP Nationwide Inpatient Sample (NIS)</td>
</tr>
<tr>
<td>HCUP Nationwide Emergency Department Sample (NEDS)</td>
</tr>
<tr>
<td>HCUP Nationwide Inpatient Sample (NIS)</td>
</tr>
</tbody>
</table>

• Qualitative research:
  - Two focus groups with emergency medicine physicians
  - One focus group with hospitalist physicians
  - Interviews with 17 primary care physicians
The Focus Groups and PCP Interviews Explored...

• Factors considered in admission decisions, and who makes the decision

• Primary care provider referrals to the ED – when and why?

• Factors associated with preventable ED visits, hospital admissions, & readmissions

• ED’s potential role in increasing or reducing health care costs
Emergency Department Use

- Patient
  - Self Care or Advice Line
    - Primary Care Physician
      - Emergency Department
        - Disposition
          - Direct admission
            - Admitted to hospital (inpatient)
            - Transferred to another facility (e.g., hospital, nursing home)
          - Left without being seen
            - Left against medical advice
            - Discharged home with outpatient follow-up
            - Repeat ED visits
Entry Points for Non-elective Admissions

- What proportion of non-elective admissions enter hospitals through the ED?
- How many admission decisions are made by EDs compared with other physicians?
EDs Account for Nearly All of the Recent Growth in Hospital Admissions

Between 2003 and 2009:

- Inpatient admissions (elective and non-elective) grew by about 4% (~34.7 million to 36.1 million)
- The US population grew by slightly less than 6%
- ED admissions accounted for nearly all of the growth in hospital admissions

Data Source: National Hospital Discharge Survey
Note: Excludes live births. Weighted counts with imputed values
In 2009, EDs Admitted Half of All U.S. Hospital Inpatients

![Bar chart showing percentages of inpatient hospital admissions by type of admission (Elective/other, Non-elective, Overall). The chart illustrates the distribution of patients admitted to hospitals via emergency departments (EDs) and other pathways. The percentages are broken down into ED referrals, referrals from other sources, and other admissions.]

- **Elective/other**
  - ED referrals: 10%
  - Referrals: 80%
  - Other: 10%

- **Non-elective**
  - ED referrals: 20%
  - Referrals: 70%
  - Other: 10%

- **Overall**
  - ED referrals: 20%
  - Referrals: 70%
  - Other: 10%
PCPs Refer Patients to the ED for Many Reasons

- Immediate medical care and evaluation, including timely access to testing not available in PCP’s office
  - “Making sure they are getting the care. So that there is not lapse in treatment.”
  - “More careful observation in those first few hours while you’re getting the ball rolling.”
  - “ER – faster services, faster start time for meds and tests. Another educated set of eyes looking at patient differently.”

- PCPs acknowledged that ED physicians are making the admission decision for their patients in the ED.

Source: PCP Interviews
Hospitalist Views of the ED

• “If the patient is coming from the ED...it’s easier to coordinate inpatient care with consultants.”

• “Patients get admitted because we don’t have a good system in place for follow-up. If there was rapid follow up [with a PCP], the ER might not have to admit.”

• “There’s often a lot of ‘social admissions’ where even the ER MD will say they don’t want to admit, but they don’t know what else to do, where else to send [the patient].”

Source: Hospitalist Focus Group
Admit Directly, or send to the ED?

• How often do office-based physicians refer patients to the ED for potential admission, instead of directly admitting the patient themselves?
## PCPs Face Barriers to Directly Admitting Patients

<table>
<thead>
<tr>
<th>% of physicians responding to 2005-2006 CTS</th>
<th>Type of barriers to admitting patients to hospital</th>
<th>Importance of barrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%</td>
<td>• Health plan network • Administrative</td>
<td>• Moderately important • Very important</td>
</tr>
<tr>
<td>70%</td>
<td>• Lack of health insurance • Inadequate coverage</td>
<td>• Moderately important • Very important</td>
</tr>
</tbody>
</table>

Source: Community Tracking Study
Reasons Why PCPs Send Patients to the ED

• Most important reasons
  – Severity of illness
  – Complexity of patient’s symptoms

• Other reasons
  – Time of day or day of week
  – ED’s access to diagnostic equipment
  – Time required to arrange a direct admission
  – Patient information not available (after hours/weekend, doctor on call)

Source: PCP interviews
Do Patients Try to Contact a Physician Before Seeking Care in an ED?

• About 60% of patients said they could not contact their own, or another, physician

• However, only 15% actually tried

• Four of five who contacted a healthcare professional were told to go to an ED

Source: 2003 CTS
Physicians Who Offer at Least Some After-Hours Care Are Easier for Patients to Contact

Doctor offers some after-hours care?
- Yes: 50%
- No: 50%

Patient finds it hard to contact their doctor?
- Yes: 11%
- No: 89%
- Yes: 33%
- No: 67%
Impact of Coverage on Admit Decisions

- Does type of insurance influence hospital admissions?
- Does availability of care coordination influence the likelihood that a patient will be admitted from the ED?
Hospital Care: Where the Money Is

U.S. Health Spending, 2012

Hospital care 31%
Doctors, nurses, and other professionals 22%
Nursing home/residential care/ambulance 11%
Structures/equipment 4%
Dental 4%
Medical products 3%
Public Health 3%
Home health care 3%
Drugs 10%
Insurance bureaucracy 6%
Research 2%
Government bureaucracy 1%
Source of Admission Varies by Payer

Data Source: National Hospital Discharge Survey
Note: Excludes live births. Weighted counts with imputed values
The Share of Inpatients Admitted via the ED Is Growing in All Payer Groups

Share of All Inpatients Admitted through the ED, by Primary Payer (1993-2009)

Data Source: Nationwide Inpatient Sample
Note: Excludes live births. Weighted counts
Medicare is Hospitals’ Top Payer; Private Coverage is Losing Ground

Primary Payer for All Hospital Admissions: 1993-2009

- Medicare
- Private insurance including HMO
- Medicaid
- Self-pay
- Other and missing
- No charge

Source: Nationwide Inpatient Sample.
Note: Excludes live births. Weighted counts.
Medicare Is Also the #1 Payer for ED Admissions

Primary Payer for Inpatient Admissions Originating in Emergency Departments: 1993-2009

- Medicare
- Private insurance including HMO
- Medicaid
- Self-pay
- Other and missing
- No charge

Data Source: Nationwide Inpatient Sample (NIS), 1993-2009
Medicare Admissions Are Rising Due To Population Growth—Not Higher Admit Rates

Population rates of inpatient admissions from EDs: 1999-2009

- Medicare
- Medicaid
- Overall
- Self-pay and no-charge*
- Private insurance

* Matched to Census category "not covered"
Does Care Coordination Matter?

• The odds of hospital admission increased significantly with patient age (older), gender (men), and hospital status (urban, teaching, for-profit).

• After adjusting for confounders, Medicare Choice beneficiaries had the same likelihood of ED admission as traditional Medicare fee-for-service.

• Data from our focus groups suggests that availability of care coordination may help somewhat with discharge arrangements.

Source: AHRQ special analysis of State Emergency Department Database files in 20 states.
Potential Preventable Admissions

- What role do EDs play in reducing potentially preventable admissions?
What is a “Preventable” Admission?

- AHRQ monitors hospitalization rates for patients with “ambulatory care sensitive conditions” such as asthma, congestive heart failure, diabetes and pediatric gastroenteritis.

- To formalize this process, AHRQ classified a standard set of admission diagnoses as “prevention quality indicators” (PQI) to reflect their potential preventability.

- The assumption is that if patients with these conditions get good outpatient care, their need for hospital care will decline.
### AHRQ’s Prevention Quality Indicators

<table>
<thead>
<tr>
<th>Overall Composite</th>
</tr>
</thead>
<tbody>
<tr>
<td>PQI #01 Diabetes Short-Term Complications</td>
</tr>
<tr>
<td>PQI #11 Bacterial Pneumonia</td>
</tr>
<tr>
<td>PQI #03 Diabetes Long-Term Complications</td>
</tr>
<tr>
<td>PQI #12 Urinary Tract Infection</td>
</tr>
<tr>
<td>PQI #05 Chronic Obstructive Pulmonary Disease (COPD) or Asthma in Older Adults</td>
</tr>
<tr>
<td>PQI #13 Angina without Procedure</td>
</tr>
<tr>
<td>PQI #07 Hypertension</td>
</tr>
<tr>
<td>PQI #14 Uncontrolled Diabetes</td>
</tr>
<tr>
<td>PQI #08 Heart Failure</td>
</tr>
<tr>
<td>PQI #15 Asthma in Younger Adults</td>
</tr>
<tr>
<td>PQI #10 Dehydration</td>
</tr>
<tr>
<td>PQI #16 Lower-Extremity Amputation Among Patients With Diabetes</td>
</tr>
</tbody>
</table>
Are EDs Playing a Role in Reducing Preventable Admissions?

• To answer this question, we analyzed PQI-admissions from 2000-2009, classified by admission type

• Although non-elective admissions grew over this time period, PQI admissions were flat
  – Non-elective PQI admissions from MDs’ offices fell by 30%
  – Non-elective PQI admits from EDs rose, but at roughly half the rate of growth of non-elective ED admissions overall (14% vs. 27%)
Are EDs Playing a Role in Reducing Preventable Admissions?

- To test the hypothesis that EDs are playing a role, in holding down PQI admissions, we examined rates of ED visits and ED admissions of patients with ambulatory care sensitive conditions using the Clinical Classifications Software (CCS) system.

- CCS collapses ICD-9 diagnosis codes into 260 mutually exclusive, clinically meaningful categories.

- We calculated the percentage of ED visits involving various CCS categories that were admitted to the same hospital for years 2006 and 2009.
## PQI-CCS “Pairs”

<table>
<thead>
<tr>
<th>PQI</th>
<th>CCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes short term complication + Uncontrolled diabetes</td>
<td>“Diabetes mellitus with complications”</td>
</tr>
<tr>
<td>COPD or asthma in older adults + asthma in younger adults</td>
<td>“COPD and bronchiectasis” + “asthma”</td>
</tr>
<tr>
<td>Urinary infection</td>
<td>“Diseases of the urinary system”</td>
</tr>
<tr>
<td>Hypertension</td>
<td>“Hypertension”</td>
</tr>
<tr>
<td>Congestive heart failure + angina</td>
<td>“Diseases of the heart”</td>
</tr>
<tr>
<td>Dehydration</td>
<td>“Fluid and electrolyte disorders”</td>
</tr>
</tbody>
</table>
EDs Appear to Be Playing a Useful Role in Reducing Preventable Admissions

• ED visits grew in all 6 CCS categories, but not as much as ED admissions for these conditions (in 4 of the 6 categories analyzed)

• The notable exception was diseases of the heart. ED visits grew by 5% but ED admissions decreased by 6%

• ED visits due to hypertension ED visits grew by nearly 20% but ED admits grew more slowly (11%)
PCPs Believe EDs May Be Helping to Reduce Preventable Inpatient Admissions

- “Timely access to health care”
- “EDs help keep people out of the hospital”
- “If they are seeing someone who is kind of sick but doesn’t need to be admitted, then by avoiding admission they are saving money. Even though it is more expensive than being seen in my office, it’s a lot cheaper than an admission”

Source: PCP Interviews
EP Views Regarding Preventable ED Visits & Preventable Hospital Admissions

- Lack of timely access to outpatient care is a major factor leading to “preventable” ED visits
- Concern that a fragile patient won’t get needed follow-up care forces some admission decisions
- In some cases, family and social considerations play an important role in admission decisions
- Lack of case management to arrange alternative to admission (Social Services, SNF, etc)
- When ED physicians consult a colleague, they most often talk to the hospitalist, r/t the PCP
EP Thoughts re the ED’s Role in Boosting Health Care Costs

• “The ED contributes to excess costs because of the higher burden of illness treated in this setting”

• “The ED contributes to excess costs due to overuse of diagnostic tests that may not be readily available in the outpatient setting”

• “The ED is also responsible for holding down costs by making medical diagnoses early and efficiently, which can improve long term outcomes”
Study Limitations

• The observed trends are clear; the reasons behind them, less so

• Changes in how the 2010 data were collected (and the resulting discontinuities) led us to end our analysis with 2009 data

• Managed care is not yet being coded consistently enough on a state-by-state basis to allow nationwide analyses

• Our focus group & interview findings should be considered tentative given the limited scope and less formal methodology employed for this project
The Bottom Line

EDs

- A vital portal for hospital admissions, especially of Medicare beneficiaries
- Support PCPs by performing complex dx workups & handling after-hours demand
- EPs are the main decision makers for half of all hospital admissions
- Most non-emergent users believe they are ill, lack viable alternatives, or were sent by a provider
- EDs may be playing a useful role in reducing preventable hospitalizations
Implications for Policy (1)

Hospital administrators, payers & policymakers should pay closer attention to the role EDs play in hospital admissions.

Use of EDs as diagnostic centers warrants further research to determine if this is the most efficient way to evaluate patients with worrisome conditions.

Efforts to reduce non-emergent use of EDs should focus on increasing affordable alternatives, rather than turning patients away.
Implications for Policy (2)

EDs should be formally integrated into healthcare delivery systems—both inpatient and outpatient

Integration can be facilitated through:
- more widespread adoption of interoperable and interconnected health information technology,
- greater use of care coordination and case management
- collaborative approaches to inter-professional practice