Barriers Impacting Rapid Access to Tertiary Care for Time Sensitive Critically Ill Patients

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Disclosure

• Author: Scott M. Newton, DNP, RN, EMT-P

• Objectives:
  – Identify common barriers to interhospital transfer
  – Identify impact on patients, families, communities, care systems, and society

• No conflict of interests to declare

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Introduction
Inter-hospital Transfers

United States:

• **500,000 annual transfers** (Jaynes et al, 2013)

• **48,000 annual Medicare transfers in 2005** (Iwashyna et al, 2009)

• **50% of acute myocardial infarctions** (Iwashyna, 2012)

• **4.5% of ICU admissions** (Bosk, Vienot & Iwashyna, 2011)
Problem

- **Top 3 Barriers**  (Warren et al, 2004)
  - Complex transfer process  (Barratt, 2012)
  - Lack of available beds  (Iwashyna et al, 2010)
  - Awaiting transport team  (Aguirre et al, 2008)
Patients Affected

- **Trauma**: 60 minutes
- **Stroke**: 180 minutes
- **ST-Segment Elevation Myocardial Infarction (STEMI)**: 90 minutes
- **Surgical Emergencies**
  - Intracranial hemorrhage, aortic dissection, ruptured heart valve
- **Pediatric Critical Care**
  - Specialty expertise and equipment
Transfer Delays

• Outcomes Impacted  (Ligtenberg et al, 2005)
  – **Clinical**: 8% higher mortality  
    (Catalano et al, 2012)
  – **Financial**: $9,600 increased care cost  
    (Fanara et al, 2010)
  – **Operational**: 23% longer length of stay  
    (Barratt, 2012)
Variables & Factors

- Recognizing patient transfer need
- Knowledge of regional resources
- Available bed capacity
- Specialty care provider access
- Timely medical transport
- Nurse staffing levels
- Transfer process complexity

(Missouri Department of Health, 2010; Bosk, Veinot and Iwashyna, 2011)
Clinical Context

Community Hospital

- Emergency or Intensive Care Unit
- Nurses, physicians & support staff
- Resource consumption
- Care capacity dilution

(Bosk, Veinot and Iwashyna, 2011)
Clinical Context

Tertiary Care Center
• Transfer System Answering Point
• Specialty Care or Intervention Unit
• Nurses, Physicians, & Technical Staff
• Transport Team
• Logistics & Operations
• Bed Management

(Iwashyna, Christie, Moody, Khan, and Asch, 2009)
Patient Impact

• Increased morbidity & mortality
  – Stoke intervention odds decreased 2.5% for each 60 seconds elapsed
• Increased acuity & need for mechanical ventilation
• Prolonged recovery & residual impairment

(Jacobs et al, 2006; Prabhakaran et al, 2011; Bosk, Veinot and Iwashyna, 2011)
Family Impact

- Increased anxiety and concern
- Time away from work and family
- Increased financial burdens
- Dependent care commitment
- Physical care provision and risk

(Bosk, Veinot and Iwashyna, 2011)
Communities & Care Systems

Community Hospital

- Reduced efficiency
- Decreased throughput
- Constrained care capacity
- Increased resource consumption
- Care imbalance

(DeLia, 2007; Iwashyna, 2012)
Communities & Care Systems

Tertiary Care Center

• Efficiency, Responsiveness, & Reputation
• Repeat diagnostic tests (images, labs, etc)
• Competitive markets and reimbursement
  – Referral Patterns
  – HCAHPS score

(Jacobs et al, 2006; Iwashyna, 2012)
Society Impact

• Decreased healthcare access
• Increased healthcare costs
• Greater ICU resources consumed
• Higher complication rates
  – Hospital Acquired Infections
  – Skin Breakdown
  – Ventilator Acquired Pneumonia
• Longer recovery & residual disability

(Westfall et al, 2008; Entessoro et al, 2005)
Summary

- Patients require rapid tertiary care access
- Process must be barrier free
- Barriers impact outcomes
  - Clinical, Financial, Operational
- Outcomes affect
  - Patients & Families
  - Communities & Care Systems
  - Society
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Discussion...


