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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
- Sponsored by Johns Hopkins Hospital (employer) to conduct & present this work

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

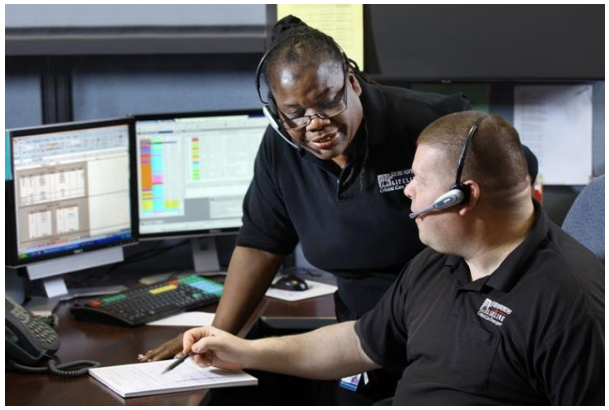
- Emergency or Intensive Care Unit
- Nurses, physicians & support staff
- Resource consumption
- Care capacity dilution

(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; Entenssoro 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…

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