

# Six Sigma

Lee County EMS  
In Partnership with  
IMPAC University

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# What is Six Sigma?

- Measure Quality – strive for perfection
- Typically manufacturing industry
- Data Driven Approach – DMAIC
  - Define, Measure, Analyze, Improve, Control
- Eliminate defects
- Eliminate variations within processes

# Training

- Phase I
  - White Belt – 1 day
    - 40+ people – understand the process
    - Management, supervisors, FTOs
  - Yellow Belt – 4 days over 3 weeks
    - 20+ people – understand the tools
  - Green Belt – 8 days over 3 months
    - 12 people – running the teams
    - Projects
    - Teams

# Training

- Phase II
  - White Belt
    - Supervisors, FTOs, Paramedics, EMTs
    - 40+ people
  - Yellow Belt
    - 20+ people

# Project Requirements

- Business Case
- Greater than \$50,000 impact
- Team Development
  - Interdisciplinary
  - Multiple levels within organization
  - “Owner” identified

# Projects

- 30+ projects suggested
- Voting Techniques (consensus)
- Projects – Round I
  - Offloads
  - Response Times
  - Revenue Recovery
  - Customer Satisfaction
  - Hiring
  - CQI – Clinical/Operational



# Offloads

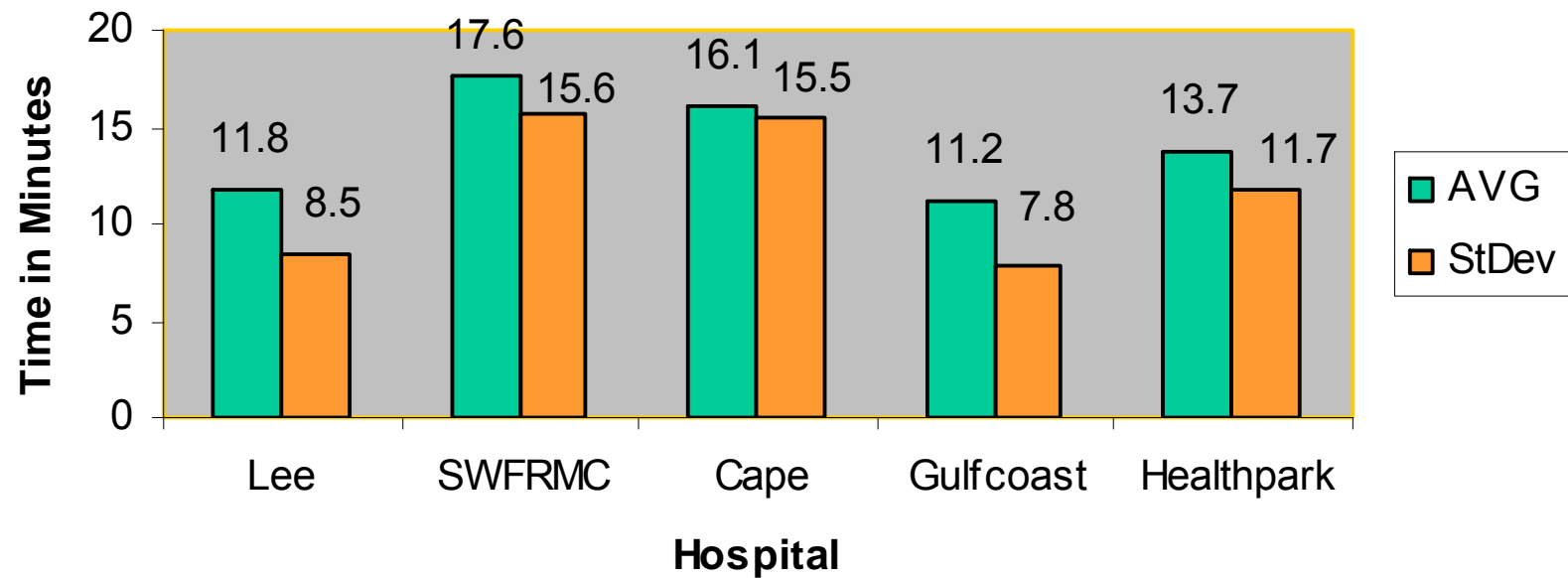
## Define Phase

- **Problem statement**
  - Lee County hospitals are not off-loading EMS patients in a timely manner. This results in fewer ambulances available for response at any given time. It also results in more available units having to move around the County to provide coverage.
- **Justification for project**
  - Lee County EMS and hospital partners are losing opportunities for faster return to available status of ambulances and more timely processing of patients to admission or release. The effort to better manage these resources will pay monetary benefits to both.



# Measure Phase

Jan 2006-August 2006 Hospital Offloads





# Analyze Phase

- Root Causes Found
  - Destination Coordination: Ambulance clumping at ERs
  - Available beds at ERs
  - Hospital Turn Around Time: Hospital boarding patients in ER



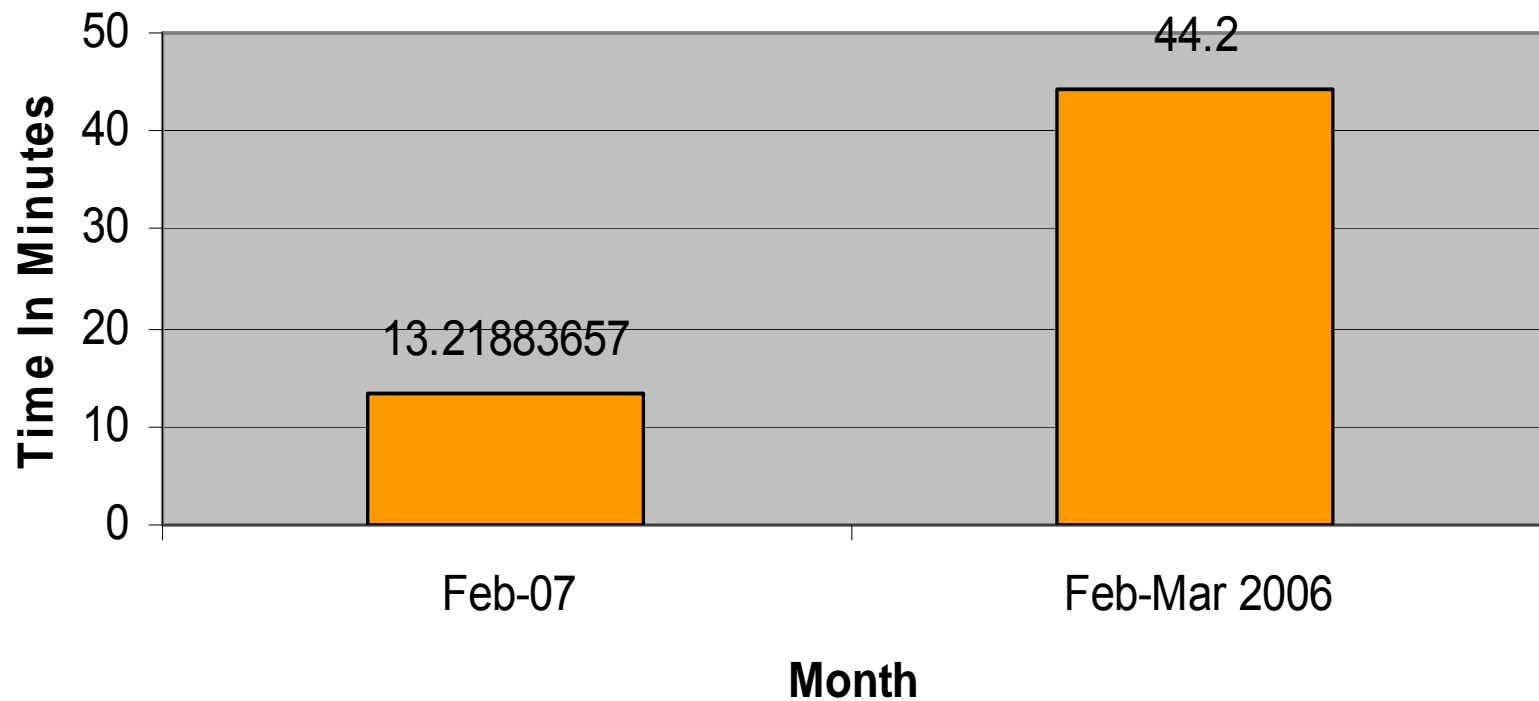
# Improve Phase Solutions Implemented

- Transportation Destination Coordinator contact prior to transport. Transportation Officer must be a paramedic
- EMS systems update by hospitals.
- Lee Memorial Hospital ER nurse finding bed space prior to EMS arrival.



# Improve Phase

**Average Offload Times In Season 2006 & 2007**





# Control Phase

- Process data to be reported via weekly reports from Public Safety Information Resources.
- Data will be in Microsoft Excel format.
- Reports will be input to worksheets which are formatted to calculate timelines.

# Response Times

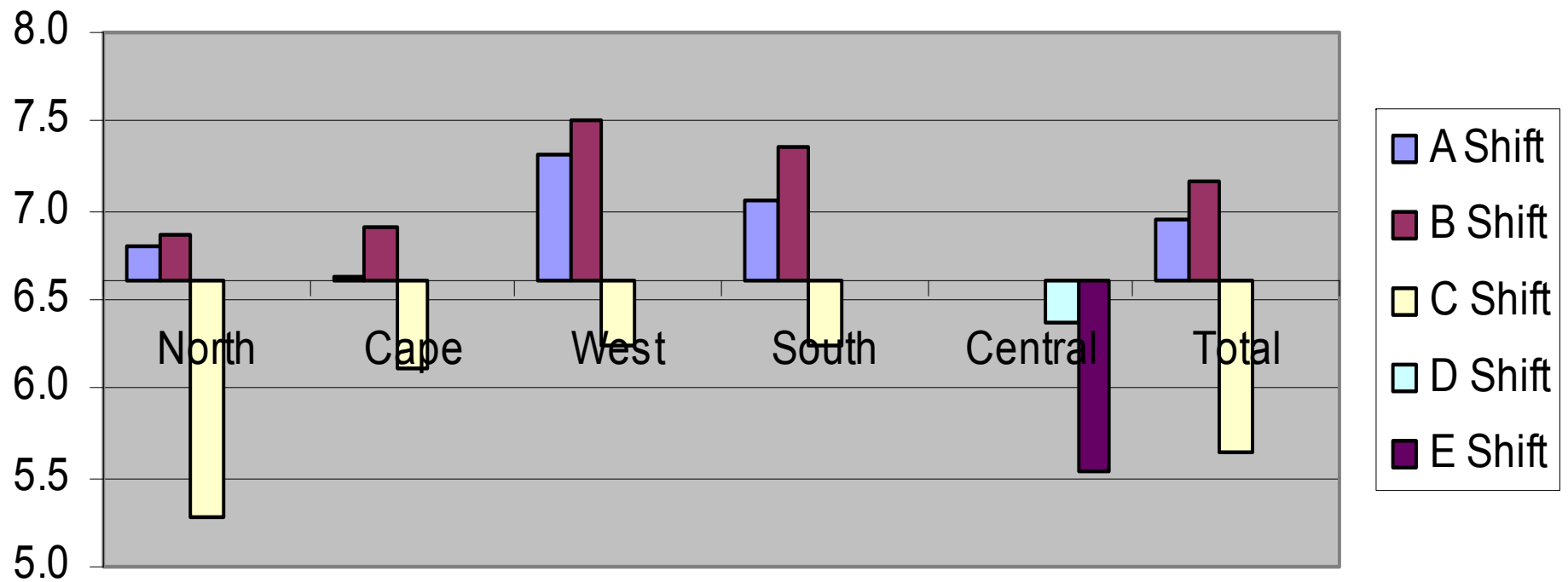
## Define Phase

- Project goal

County Ordinance - Response time average below 8 minutes or responses <8:59 at least 90% of the time. Our goal - Anticipated savings based on a reduction in unit hours necessary = \$165,000 annually by minimizing response time.

# Measure Phase

## Response Time - Minutes January 2007



# Analyze Phase

- Listing of root causes
  - Offloads – non-value added time awaiting unit availability
  - Transfers – 5% of total call volume – being treated as emergency calls
  - Clock does not stop upon Paramedic arrival – outlying medics arrive on scene, fire department medics on scene
  - Peak Demand issues
    - Staffing – too many units at night – not enough during the day
    - Roaming Units – peak demand with no designated zone

# Improve Phase

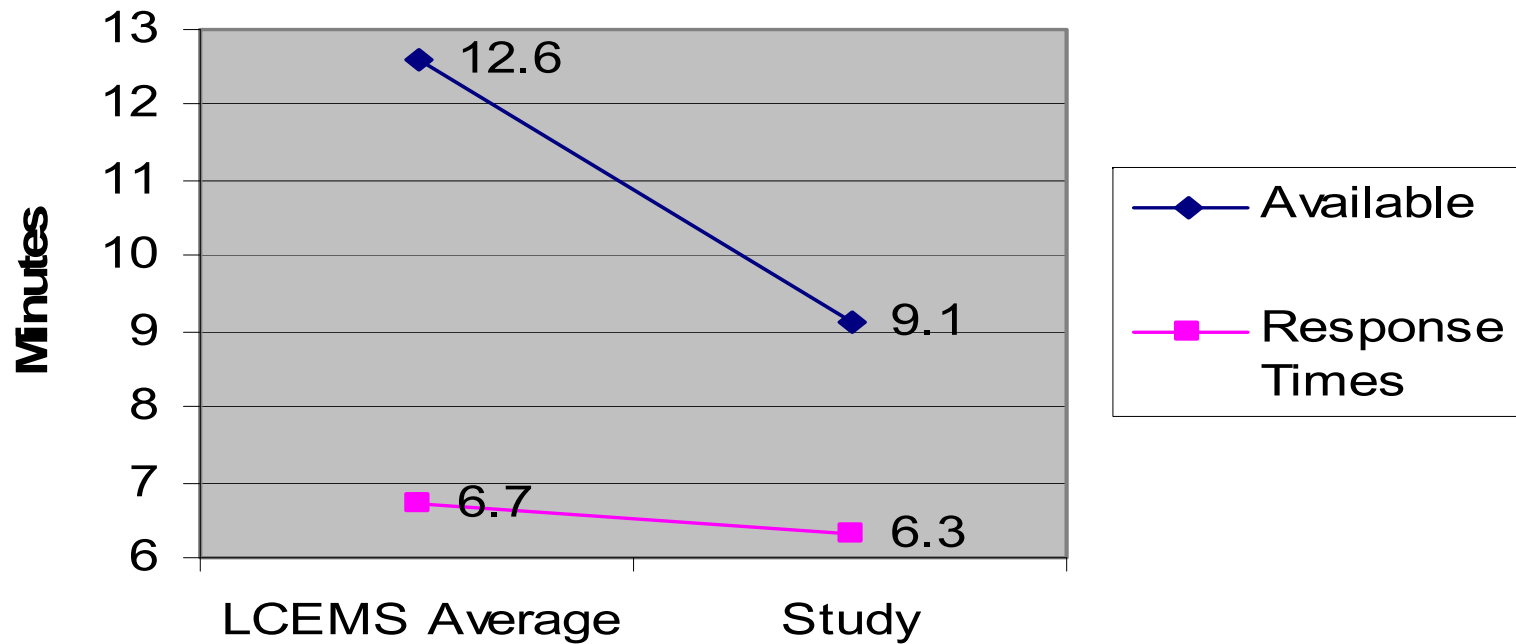
## Pilot Program:

February – Shift command will place units available 10 minutes after offload except trauma alerts and priority one calls

March – Medics 1,2,3,4,7,18 will not provide any interfacility transfers

April – Add 2 peak load units

## Available after Offload Study



The cost savings – with results extrapolated over a fiscal year:

Available Times - \$490,000

Response Times - \$70,000

**Total potential cost savings - \$560,000**

**Initial goal - \$165,000**

# Control Phase

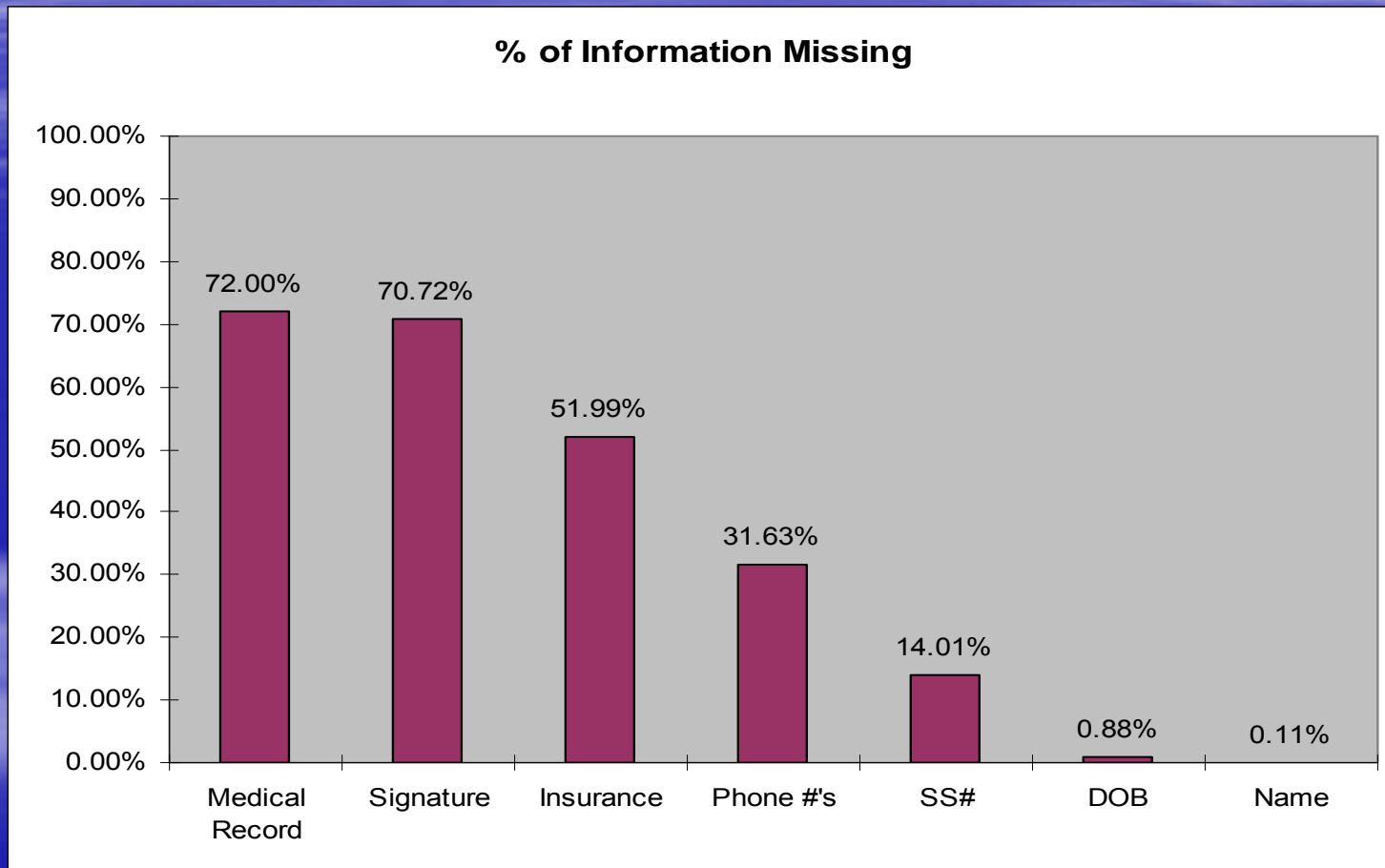
- Identification of process owner
  - EMS Shift Command

# Revenue Recovery

## Define Phase

- ***Justification for project***  
Improved overall documentation of Patient Care Reports (PCR) should realize an increase of 10% = \$1.5 million over the next fiscal year.

# Measure



# Measure

- July 05 to Aug 05 - 316 new accounts with bad addresses = \$179,282 in lost revenue.
- One year period = 4186 calls with bad addresses = lost revenue of \$2,374,885.
- If we increase the accuracy of the Medical Record Number from LMH hospitals by 63% we could increase revenue by \$1.5 million.

# Analyze

## Root Cause Summary

Unable to collect approximately  
45 % of Billable Revenue



→ Data Collection



Training ← ← ←



**Ownership** ← ← → → **Define**  
**Expectations**

# Improve Phase

- Two separate solutions are being developed in addition to the above pilots:
  - A Data Collection Handbook will be implemented as a guide and reference for data collection activities and training.
  - An active-desktop/ whiteboard will be incorporated into our current software and hardware at each station to allow for timely statistics and data dissemination. This will foster friendly competition and respectful peer pressure.

# Control Phase

- Identification of process owner
  - Business Office

# Other Projects Completed

- Hiring –
  - FY 2006 Hired 49 with 47 vacancies
  - FY 2007 Hired 92 with 24 vacancies
  - Yes – retention is an upcoming project – Not enough OT
- Customer Satisfaction
  - Process Development
  - Overall 3.79 out of 4
  - Phone, Face to face and mailed surveys
- CQI/ Operational Process for purchase of new items

# Projects

- Round II
  - Documentation
  - Peak Load Staffing
  - Retention
  - Tiered Response
  - Training Facilities

Questions?