

Intermountain Health Care
Institute for Health Care Delivery Research
ATP Project Report
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Reducing Time to Initial Antibiotic Dose in Pneumonia Patients

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El Camino Hospital

- 395 bed not-for-profit District hospital located in the Silicon Valley of California
- 489 active physicians
- 2250 Employees



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Why this topic

- Pneumonia is the second highest volume medical diagnosis at El Camino (after CHF)
- Core measures related improvement efforts have been successful for AMI, CHF
 - *Uncontroversial, evidence based care standards*
 - *Well accepted benchmarks*
- Strong evidence of efficacy for antibiotic within 4 hours
- We saw a clear opportunity to improve...

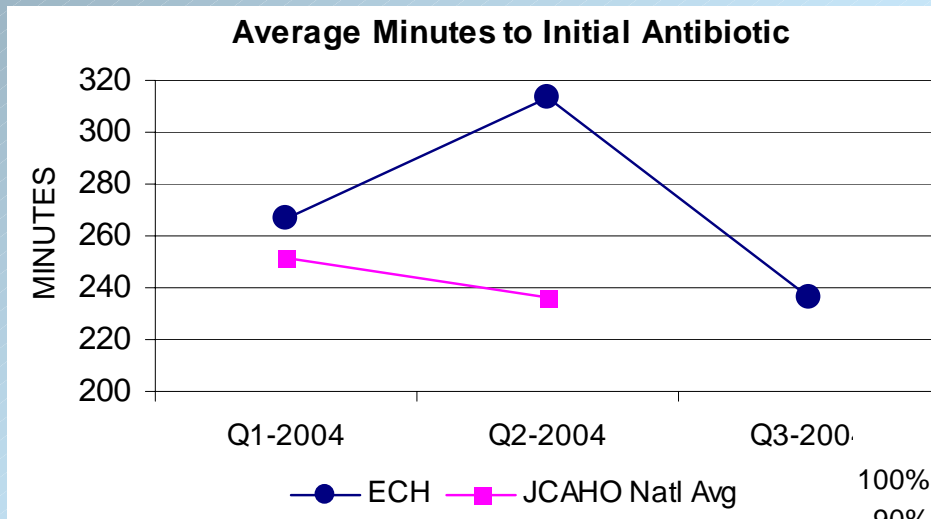


Well Established Evidence

- **Kahn (1990)**: antibiotics within 4 hours of admission → improved survival
- **McGarvey (1993)**: time-to-first-dose 4 hours → improved survival
- **Meehan (1995)**: antibiotic within 3 hours → 15% lower 30 day survival compared with antibiotic 8+ hours following arrival
- **Bratzler (2001)**: first antibiotic administered within 4 hours → reduced in-hospital and 30-day mortality 10% to 17%
- **Infectious Diseases Society of America (2000), American Thoracic Society (2001)**: recommends 8 hours maximum time to first antibiotic administration

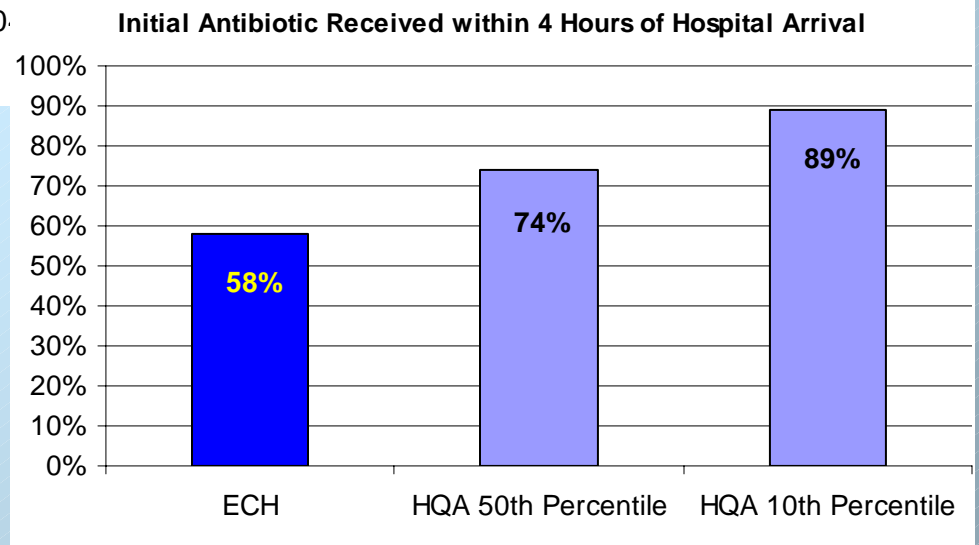


Baseline Performance



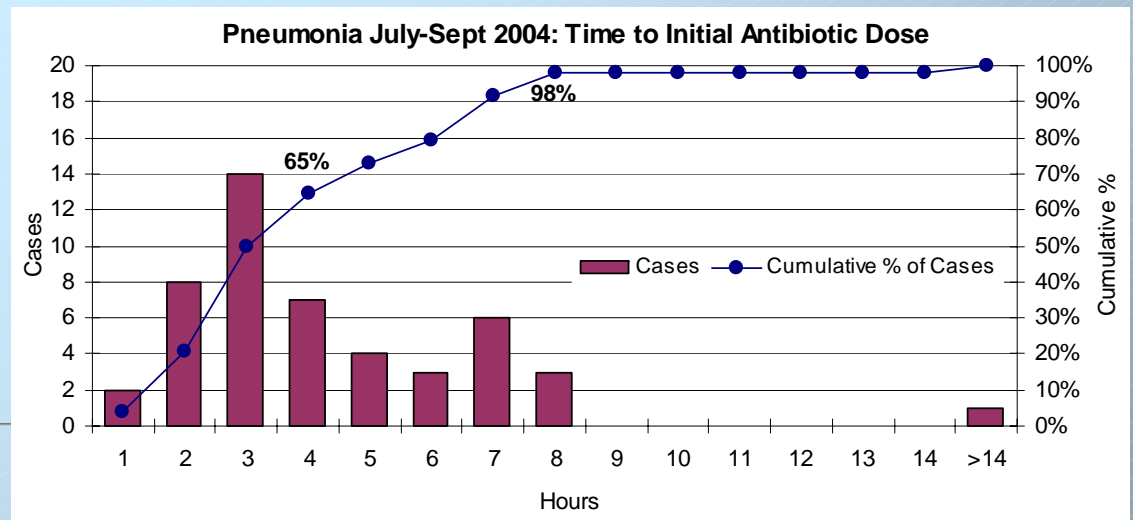
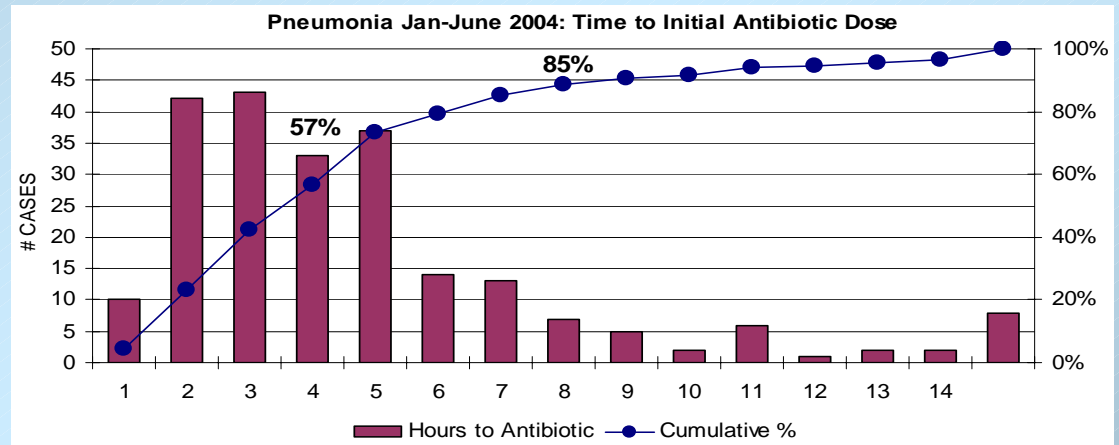
← At or worse than national average for mean time

Below 50th pctle for 4 Hour window →



Baseline Performance

Simply reporting the results to physicians produced some early progress in reducing the “9+ Hour tail”, but more progress is needed...

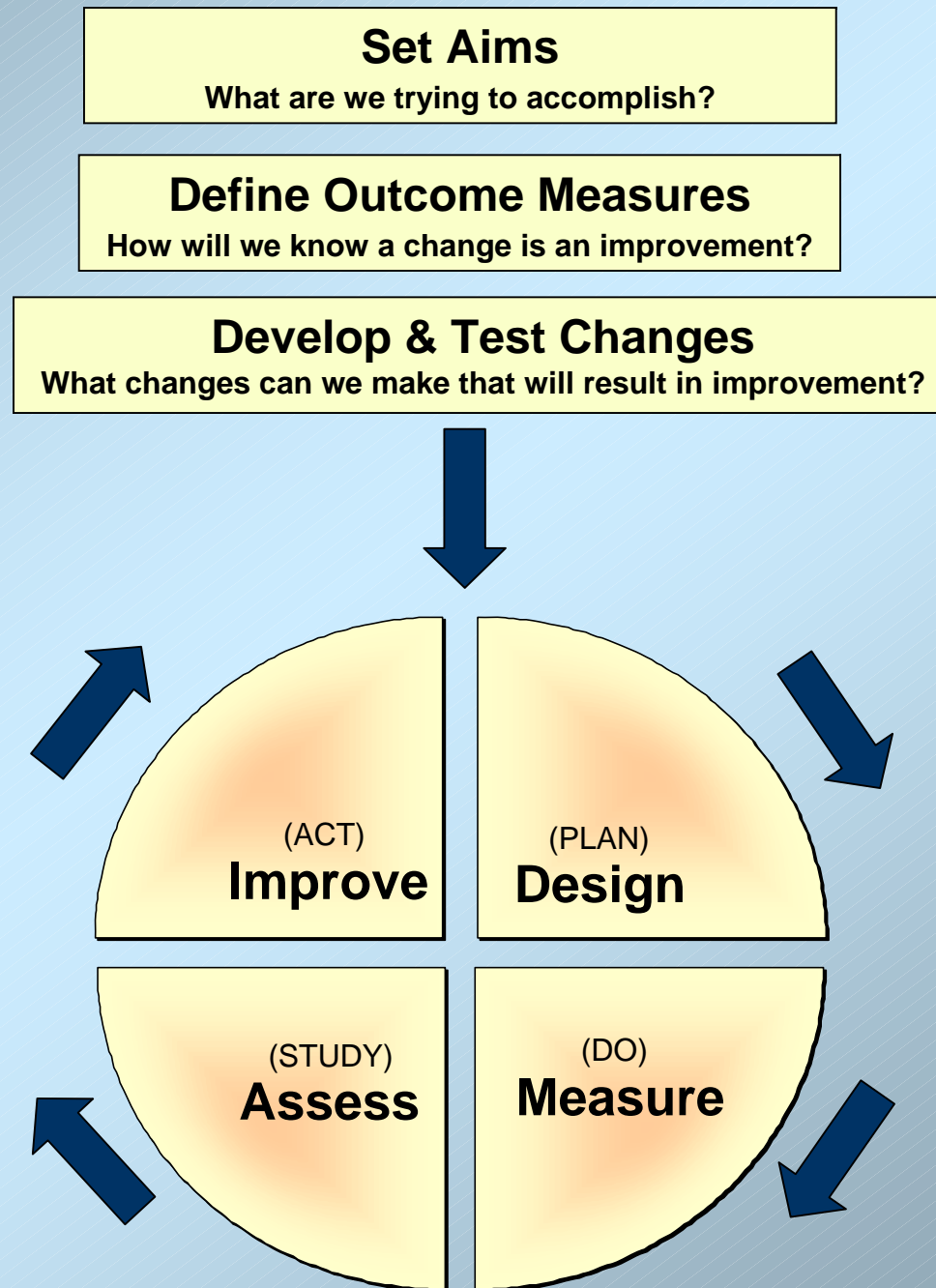


Our “Quick Antibiotic Team”

- Susan Bukunt RN (leader), **Director Clinical Effectiveness**
- Chris Hunter RN (facilitator), **Manager Clinical Decision Support**
- Michael Podlone MD, **Internist, Vice Chief Medicine**
- Josie Tang MD, **Hospitalist**
- Mary Anderson RN, **Manager Emergency Department**
- Kathy Fox, **Core Measures chart abstractor**
- Penny Takizawa RN, **Infection Control**
- Dan Fox MD, **Assistant Medical Director, Emergency Dept**
- Becky Smith, **Manager Patient Registration**



Our Method

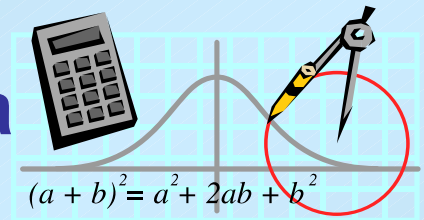


Our Aims

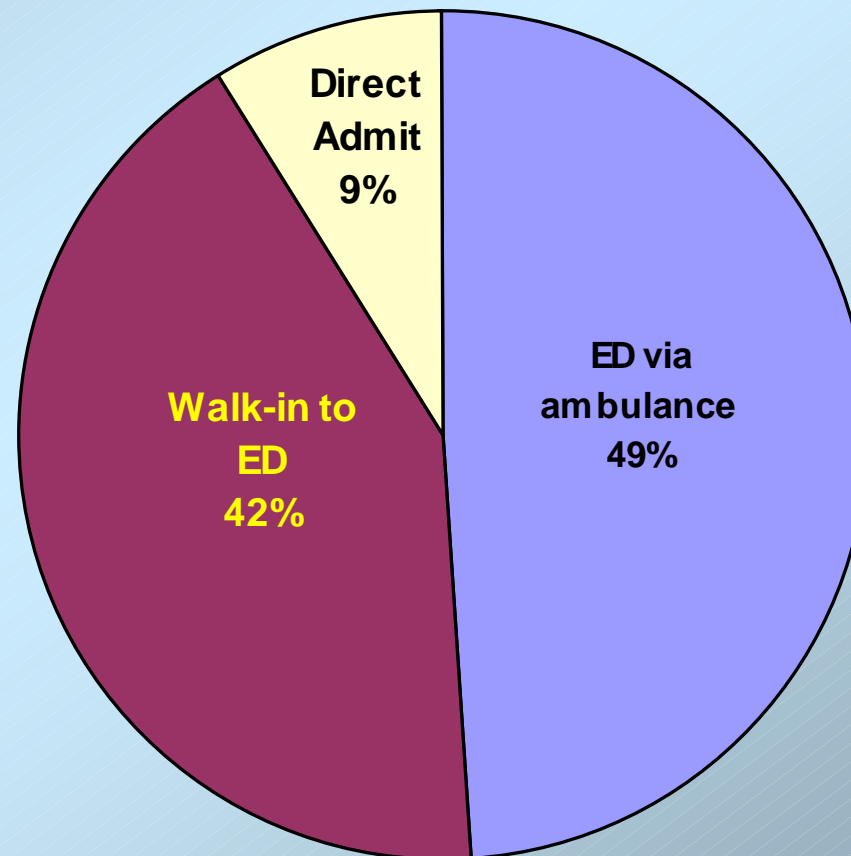
- Increase the percent of patients receiving antibiotics within 4 hours to **80%** by June 30, 2005
- Decrease mean minutes to initial dose to **220** by June 30, 2005



First look: Entry Point of Pneumonia Patients, Oct-Nov 2004

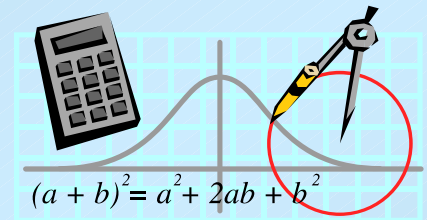


45 pneumonia patients
qualifying for rapid
antibiotic administration



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Tools



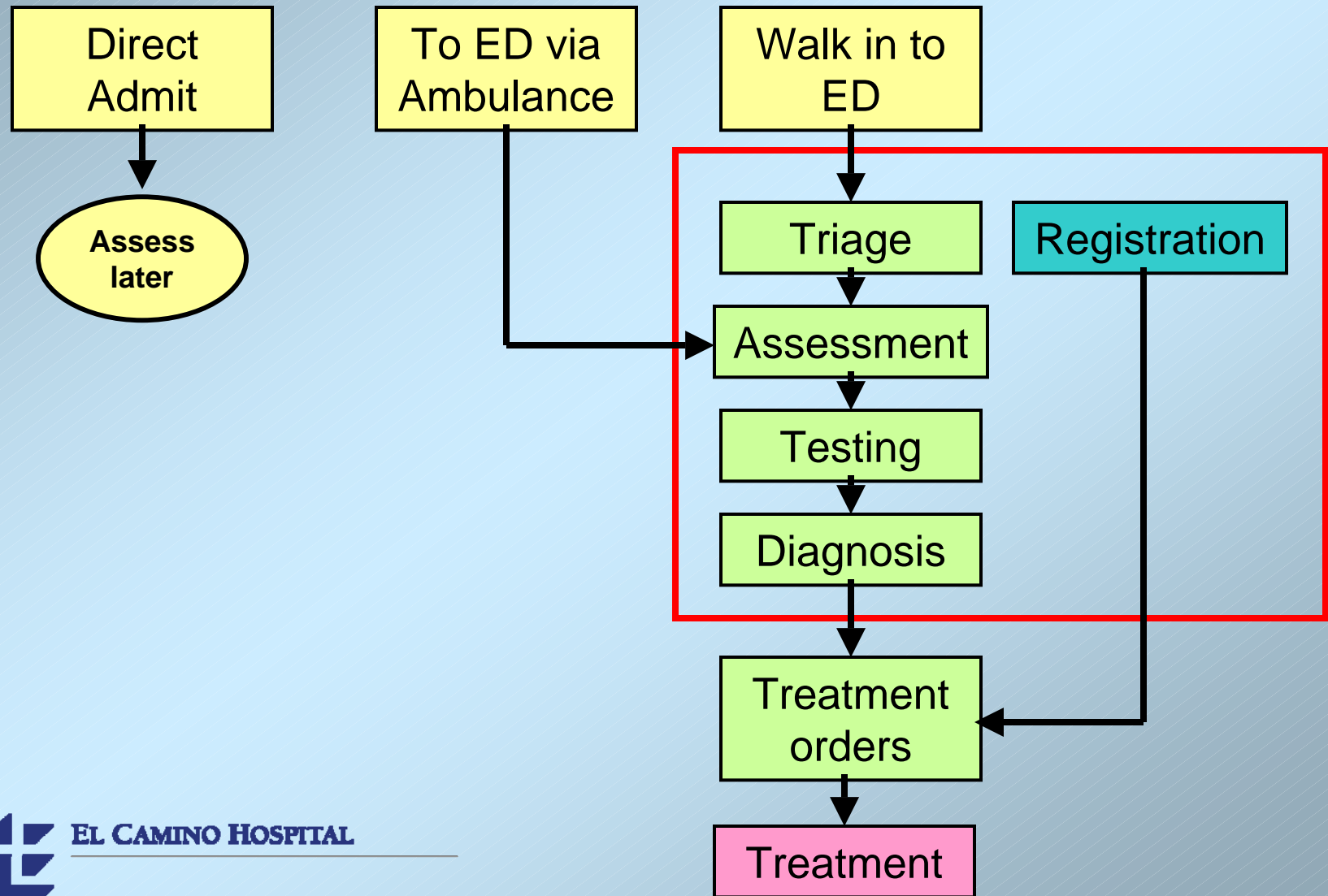
- Chart reviews by team members and Dept of Medicine officers
- Log sheet to collect key info concurrent with Core Measures abstraction

Core Measure Pneumonia Patients Qualifying for Antibiotic Timing Measure

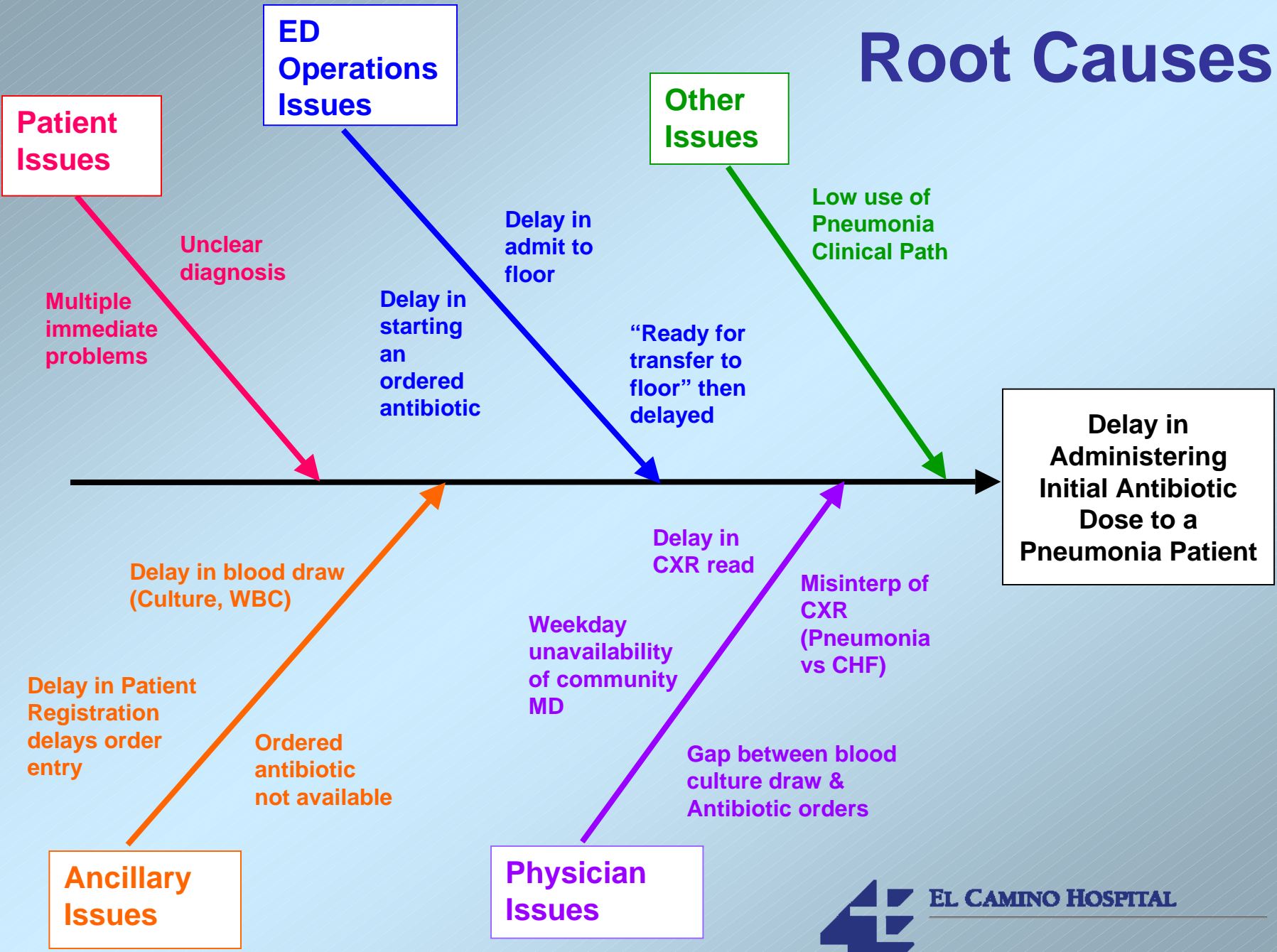
Encounter #	Arrival Date/Time*	A/W/D **	Blood Cx (Y/N)	Blood Cx Time	CXR Order	Abx Order Time	Abx Admin Time	Abx Given in ED?	Admitting MD	ED MD	Comments



Process Flow (ED Focus)



Root Causes

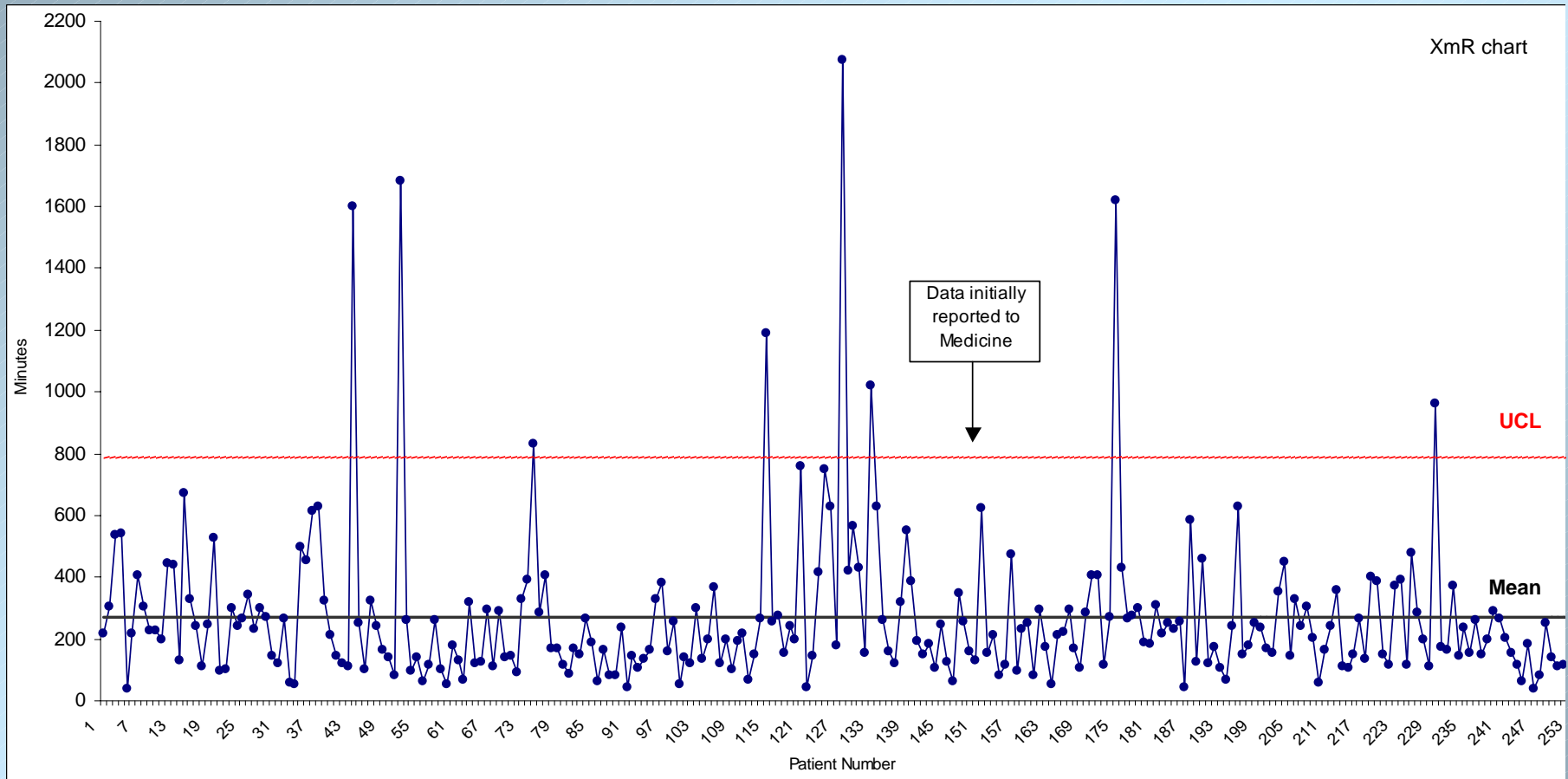


Develop & Test Change Ideas



	Change Strategy	Status
1	Always start antibiotic in ED	started 1/28/05
2	Physician at ED Triage: Get CXR from Triage if pneumonia suspected	started 3/15/05: 1-11pm, 7 days per week
3	Add Zosyn & Azithromycin to MIS ED order screens to streamline antibiotic ordering	in place 3/1/05
4	Do EQT Quick Registration concurrent with Triage	started 3/15/05 averaging 5-10 min
5	Pneumonia ED protocol	
6	Educate physicians about new blood culture medium insensitive to abx	Lab wrote a brief for the 3/23/05 physician fax newsletter

Minutes to Initial Antibiotic Dose in Consecutive Pneumonia Patients, arriving 12/24/03 to 11/30/04



Next Steps



- Update performance data
 - *just beginning Jan 2005 chart review*
- Monitor & support March changes
 - *Antibiotic started in ED*
 - *Quick Registration to speed ordering*
 - *Physician Triage*
- **Implement ED Pneumonia protocol by 5/1/05**
- Assess the Direct Admit process



ED Pneumonia Protocol



- Goal: To have diagnostic tests completed prior to MD Evaluation
 - *Pt identified at triage with cough and fever*
 - *Chest x-ray ordered, labs ordered and drawn*
 - *MD able to diagnose and treat immediately*



Thank you



- Your questions?
- Your suggestions?



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