All ALS vs. Tiered EMS System Design

An Operational Perspective

Topics Covered

• History
• Delivery Models
• Staffing Models
• EMS System Design – Clinical vs. Economic
• Operational Impacts
• Cost Impacts
• Controversies
• Conclusions
Introduction

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Presentation Background

• Controversies in EMS Design – All ALS vs. Tiered, a Scientific Review
  – Well put together presentation with scary clinical results for the industry
  – Clearly demonstrates the need to develop and maintain ALS skills
  – Need to further clarify cause and effect of results
    • Training deficits
    • Experience deficits
    • Task time elements
    • First responder elements
  – “If you have seen one EMS system you’ve seen one EMS system” as no two are alike
Presentation Background

- Each EMS System has to make most of resources available to it
  - Money
  - People
  - Public Expectations (In and Out)
  - Clinical Resources
- We agree that we should challenge and investigate the value and appropriateness of ALS as a whole, and the cost/benefit of each procedure
  - So busy trying to prove that we could, we never stopped to ask the questions if we should?
  - So busy trying to do things right that we forgot to ask if we were doing the right things?

History & Evolution of All ALS in the U.S.

- Citizen Expectations
- Clinical Beginnings
- Reimbursement
- Professional Advancement / Incremental Pay
- Operational / Economic Efficiencies (Stout / Overton)
- Clinical Specializations (CCEMTP, EMTP, EMTI, EMT-B)
- Clinical Research
- Public Safety vs. Healthcare Identity Crisis
- Advance Practice / Healthcare Integration of EMS
Delivery Model Types

• BLS Transport Only
• BLS Transport with ALS Fly Car
• BLS Transport with ALS Fire First Response
• ALS Transport with BLS Fire First Response
• ALS Transport with ILS Fire First Response
• ALS Transport with ALS Fire First Response
• ALS & BLS Transport with BLS Fire First Response (Tiered)

Staffing Models

• EMT-B + EMT-B
• EMT-B + EMT-I
• EMT-B + EMT-P
• EMT-I + EMT-P
• EMT-P + EMT-P
• EMT-B + EMT-P + EMT-P
• EMT-P + EMT-P + EMT-P
• EMT-B + EMT-B + MICN (RN)
• EMT-B + EMT-P + MICN (RN)
• EMT-B + CCEMTP
• EMT-B + CCEMTP + MICN (RN)
• EMT-B + MICN + PA
• EMT-B + MICN + Respiratory Therapist / Perfusionist
• EMT-P + RN + Board Certified MD (Cardiologist, Internist, Emergency)
• Others
EMS System Design
Clinical vs. Economic

- Factors that drive design
  - Response Time Goals
    - Clinical significance (small percentage)
    - Customer service / expectations
  - Time sensitivity of “critical” calls
  - Geography vs. Geotemporal Demand
  - Economics
  - Politics
- Specialized vs. flexible deployment
  - Tiered Response Model
- Fixed vs. dynamic
- Overlapping coverage networks
- Risk tolerance vs economic sustainability
  - Scalable risk

Strategic Deployment Plan Controls Overview
The Synergistic Effects of a Mixed Deployment Strategy

172.9 UH @ 90%

197 UH @ 90%

ALS + BLS @ 90% Coverage = 369.9 UH
Strategic Deployment Plan Controls Overview

The Synergistic Effects of a Mixed Deployment Strategy

System @ 96% Coverage = 320.3 UH

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Operational Impacts

- Triage and sorting reliability (un)
- Cost of service per patient
- Productivity vs. unit hours costs
- Operational flexibility (standardization)
  - Equipment, Fleet, Dispatch Methods
- Compounding complexities of production
  - Payroll costs and OT
  - Specialized skills (Square Peg – Round Hole)
- Mismatch of services

Cost Impacts

- Economies of scale
- Utility economics
- Loss of revenues (BLS vs ALS reimbursement)
- More for the same $$$
- Do same for less $$$
- Overton, J.  ALS and BLS  A Cost Effectiveness Study.
  Presentation – NAEMSP, January 2000
Controversies

- System overload situations
- Clinical concerns
- Employee well-being concerns
- Experience in U.S. of Elitist attitudes of Paramedics in tiered systems that can impede quality patient care
  - Cause / Effect???
- Mismatching of services

Conclusions

- All variables must be assessed in determining system design
  - Clinical, economic, operational, political, employee
- One size does not fit all
- Further clinical, operational and financial research is needed before we throw the baby out with the bath water
- Is ALS needed at all or do we need ILS or do our Paramedics need to do less skills
- Single tier is financially preferable model that achieves same/better performance at lower cost
  - Use $$$ to improve clinical sophistication
Conclusions Continued...

• Underlying cause of poor ALS performance is insufficient training and experience
  – To solve problem we should address at root of problem
    • Clinical experiences (simulation, regionalization, collaboration)
    • Clinical credentialing
    • Operational / process improvement

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