Moving Toward Value in EMS
Moving From "Action" to Outcome

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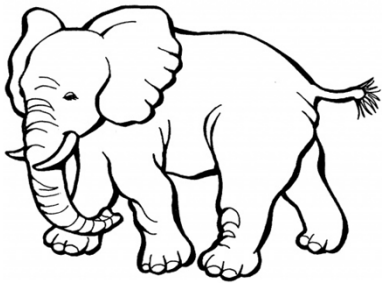
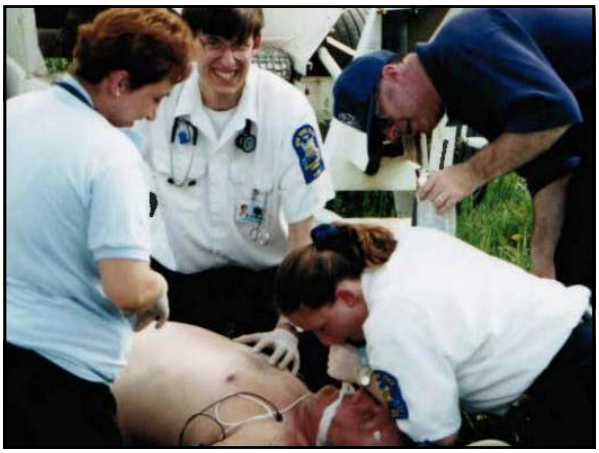
DISCLOSURES

Dr. Munk is a PRN consultant, focusing on process and analytics for the UnaVita Healthcare Management Consulting Group.






MedEv
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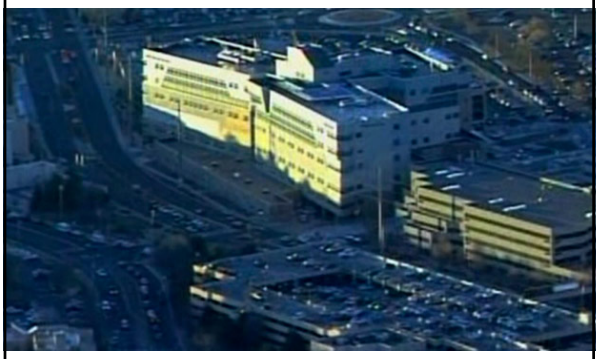
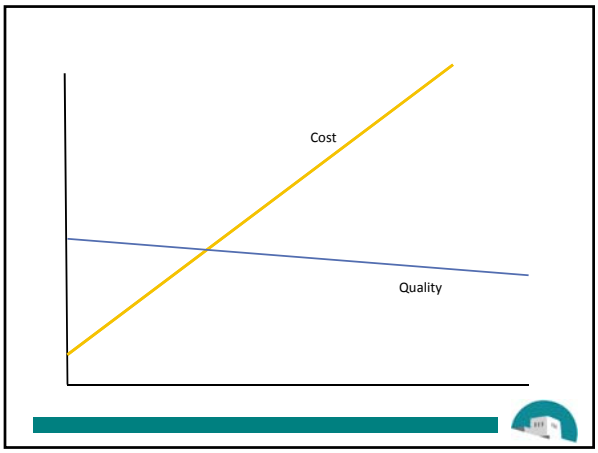
FLIGHT PHYSICIAN



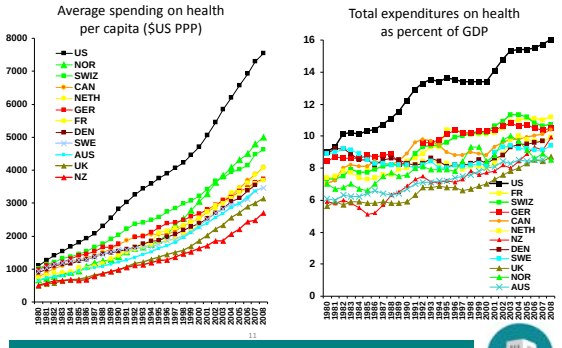
THE US HEALTHCARE SYSTEM

What we pay for

What we get



INTERNATIONAL COMPARISON OF SPENDING ON HEALTH, 1980–2008



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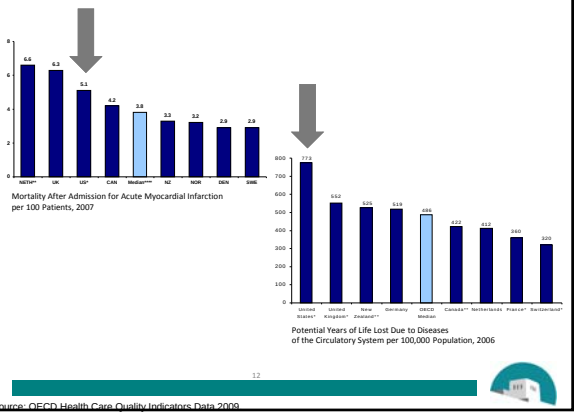
Source: OECD Health Data 2010 (Oct. 2010), The Commonwealth Fund



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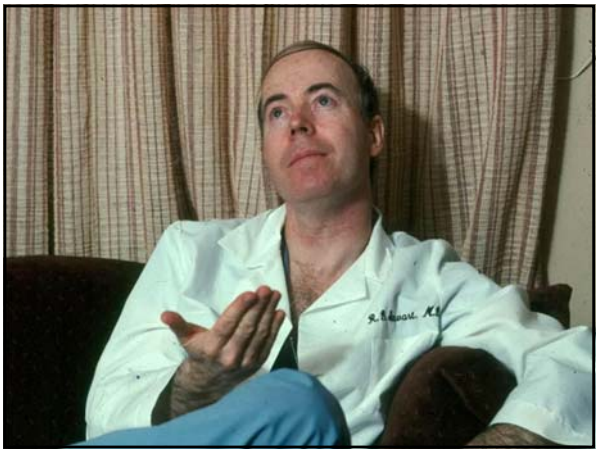
Source: OECD Health Care Quality Indicators Data 2009



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Original contribution

Effect of varied training techniques on field endotracheal intubation success rates

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A pool of 146 mobile intensive care unit paramedics was divided into four equal groups and trained in the technique of direct laryngoscopic endotracheal intubation of cardiac arrest or deeply comatose patients. Group 1 was selected from supervisors and crew chiefs and trained as preceptors. The remaining paramedics were assigned to three other study groups. Groups 1 and 2 were trained with a didactic

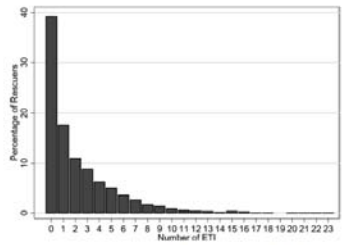
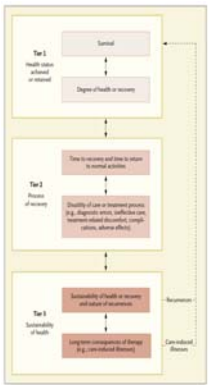


Figure 1. Frequency of rescuer endotracheal intubations (*ETI*) (n = 5,245 out-of-hospital rescuers).

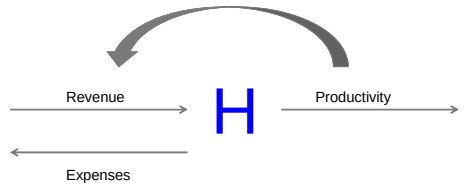
Crit Care Med 2005 Vol. 33, No. 8

Value= Outcomes / Cost



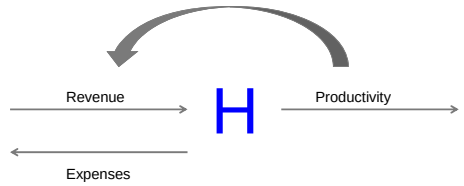
N ENGL J MED 363;26 NEJM.ORG DECEMBER 23, 2010

VOLUME/REVENUE ACTION LOOP



AKA: Fee for Service Loop

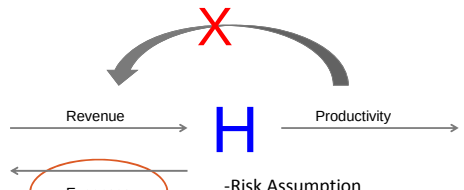
VOLUME/REVENUE ACTION LOOP



Generate Better Outcomes
- Minimize variation
- Minimize harm
- Improve the patient experience

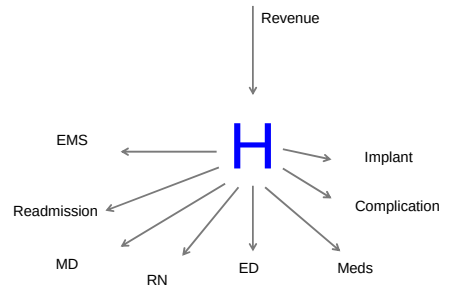
Reduce Global Costs
- Integration of care
- Avoidance of errors

VOLUME/REVENUE ACTION LOOP



-Risk Assumption
Capitation
Focus on Expenses
Accountable Care
-Pay for Performance and Penalties

RISK ASSUMPTION



PAY FOR PERFORMANCE

Clinical Process of Care Measures	
Measure ID	**Measure Description**
Acute Myocardial Infarction (AMI)	
AMI-7a	Fibrinolytic Therapy Received Within 30 Minutes of Hospital Arrival
AMI-8a	Primary Percutaneous Coronary Intervention (PCI) Received Within 90 Minutes of Hospital Arrival
Heart Failure (HF)	
HF-1	Discharge Instructions
Pneumonia (PN)	
PN-3b	Blood Cultures Performed in the Emergency Department Prior to Initial Antibiotic Received in Hospital
PN-6	Initial Antibiotic Selection for Community-Acquired Pneumonia (CAP) in Immunocompetent Patient
Healthcare-associated Infections (SCIP = Surgical Care Improvement Project)	
SCIP-Inf-1	Prophylactic Antibiotic Received Within One Hour Prior to Surgical Incision
SCIP-Inf-2	Prophylactic Antibiotic Selection for Surgical Patients
SCIP-Inf-3	Prophylactic Antibiotics Discontinued Within 24 Hours After Surgery End Time
SCIP-Inf-4	Cardiac Surgery Patients with Controlled 6:00 a.m. Postoperative Serum Glucose
Surgeries	
SCIP-Card-2	Surgery Patients on a Beta Blocker Prior to Arrival That Received a Beta Blocker During the Perioperative Period
SCIP-VTE-1	Surgery Patients with Recommended Venous Thromboembolism (VTE) Prophylaxis Ordered
SCIP-VTE-2	Surgery Patients Who Received Appropriate Venous Thromboembolism Prophylaxis Within 24 Hours Prior to Surgery to 24 Hours After Surgery
Survey Measures	
Measure ID	**Measure Description**
HCAHPS	Hospital Consumer Assessment of Healthcare Providers and Systems Survey

PAY FOR PERFORMANCE

- 2014:
  - Mortality for PN, AMI, HF, Composite Death
  - CLABSI
  - Retained Object
  - Ulcers, Falls
- 2015:
  - Spending per beneficiary
  - Care Transitions
  - Readmissions
  - Complications
  - Participation in registries
  - MRSA, Cdiff
  - HCW vaccines
  - ED Throughput
  - <39w elective birth…

Take Home Point 1:

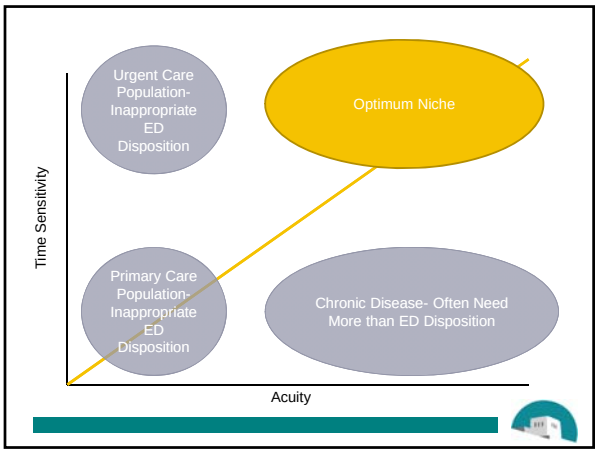
- Healthcare is moving from "Doing More" to "Doing Smarter" through attention to value generation.
- Payment is tied to how well Outcomes are generated.

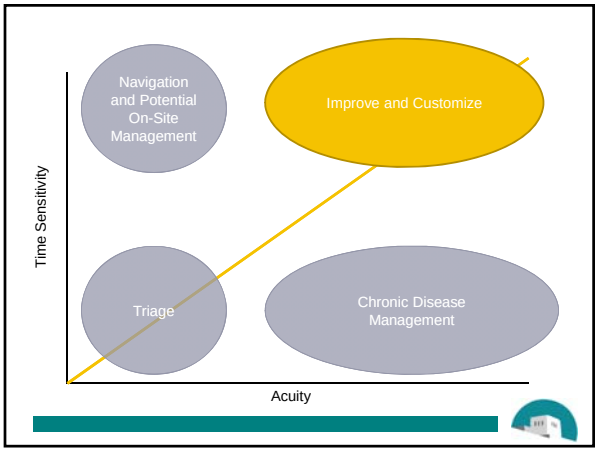
WHERE ARE WE IN EMS?

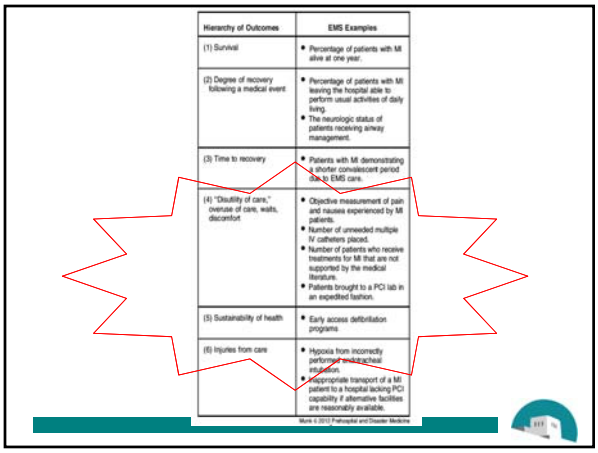
THREE DRIVERS OF DYSFUNCTION

Take Home Point 2

- 1) Reliably Doing the Wrong Things
- 2) Lack of Integration with the Rest of the House of Medicine
- 3) Narrow Market Niche







Hierarchy of Outcomes	EMS Examples
(1) Survival	• Percentage of patients with MI alive at one year.
(2) Degree of recovery following a medical event	• Percentage of patients with MI leaving the hospital able to perform usual activities of daily living. • The neurologic status of patients receiving airway management.
(3) Time to recovery	• Patients with MI demonstrating a shorter convalescent period due to EMS care.
(4) "Disutility of care," overuse of care, waits, discomfort	• Objective measurement of pain and nausea experienced by MI patients. • Number of unneeded multiple IV catheters placed. • Number of patients who receive treatments for MI that are not supported by the medical literature. • Patients brought to a PCI lab in an expedited fashion.
(5) Sustainability of health	• Early access defibrillation programs
(6) Injuries from care	• Hypoxia from incorrectly performed endotracheal intubation. • Inappropriate transport of a MI patient to a hospital lacking PCI capability if alternative facilities are reasonably available.

Intervention	Licensure Level	Median Benefit	Median Harm	Harm/Benefit Ratio	Δ Harm - Benefit
INTA8 Pneumatic anti-shock garment	EMT-Intermediate	0	3	-	3
PARA8 Pneumatic anti-shock garment	EMT-Paramedic	0	3	-	3
EMTA3 Use of PTLA	EMT-Basic	1	3	3.0	2
PARA26 Administration of activated charcoal	EMT-Paramedic	1	2	2.0	1
PARA39 Administration of furosemide	EMT-Paramedic	1	2	2.0	1
EMTA7 Use of gastric suctioning	EMT-Basic	1	2	2.0	1
EMTA8 Pneumatic anti-shock garment	EMT-Basic	1	2	2.0	1
INTA25 Activated charcoal PO	EMT-Intermediate	1	2	2.0	1
PARA75 Monitoring aminophylline	Paramedic Interfacility	1	2	2.0	1
PARA88 Monitoring nesiritide	Paramedic Interfacility	1	2	2.0	1
PARA93 Administering protamine sulfate during patient transfer	Paramedic Interfacility	1	2	2.0	1
PARA17 Surgical cricothyrotidotomy	EMT-Paramedic	2	3	1.5	1
PARA19 Insertion of nasogastric tubes	EMT-Paramedic	1	1.5	1.5	0.5
FRRA1 Mechanical positive pressure ventilation	First Responder	2	3	1.5	1
EMTA30 Administration of epinephrine, 1:1000 0.3-ml TB syringe for status asthmaticus refractory to other treatments.	EMT-Basic	2	3	1.5	1
EMTA31 Administration of epinephrine, 1:1000 0.3-ml TB syringe for anaphylaxis refractory to other treatments.	EMT-Basic	2	3	1.5	1
INTA3 Use of PTLA	EMT-Intermediate	2	3	1.5	1
INTA4 Use of Combi-tube	EMT-Intermediate	2	3	1.5	1
PARA72 Monitoring procainamide	Paramedic Interfacility	2	3	1.5	1
PARA4 Use of Combi-tube	EMT-Paramedic	2	2.5	1.25	0.5
PARA10 Acupressure (for nausea)	EMT-Paramedic	0	1	-	1
EMTA12 Acupressure (for nausea)	EMT-Basic	0	0.5	-	0.5

Table 1. Subset of Interventions Where Harm/Benefit Ratio ≥ 1, Sorted by Decreasing Harm/Benefit Ratio

Sudden Chest Pain
ALS Unit Dispatched

- ASA
- 2 IV inserted
- Decompensates
- Intubated with difficulty
- Taken to closest facility

Out of Albuterol
ALS Unit Available

- Albuterol
- IV started
- Aminophylline given as per protocol
- Brought to ED

Falls from Tree
BLS Unit Available

- Splinted broken arm
- Packaged
- Driven to community hospital

Fourth Call this Week
ALS Unit Dispatched

- Evaluated- Looks well
- Transported to the ED
- Long transfer time at the ED
- Transported home 12 hours later

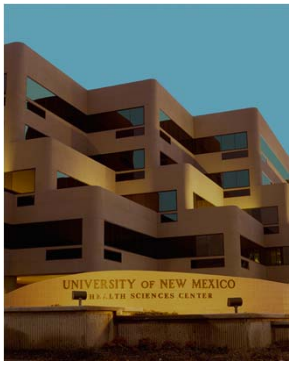
MOVING FORWARD WITH EMS OUTCOMES

- Outcomes need to be measured
- Outcomes that matter need to be determined
- The system will require reform:
  - Is the training right?
  - Is the scope of practice right?
  - Is the system integrated?
  - Can we imagine another way of providing care

COST- FUNDING FOR EMS

- How much money do we spend on EMS?
  - Charity Funds
  - Volunteer Time and Money
  - Municipal/ Tax Funding
  - Self Pay
  - Insurance billing
  - Contractual Obligations

EMS 2.0



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