THE TRAUMA SERVICE LINE

Financial, Performance & Operational Indicators

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Objectives

- Review components and maturity phases of a trauma program.
- Understand healthcare economics and costs.
- Discuss the challenges & opportunities associated with creating a trauma service line dashboard.
- Review business strategies for the trauma service line.

2

The Clinical Program

A *program* is a group of clinicians and staff committing their own and their institutions' resources toward a focused, integrated, and comprehensive effort to treat a specific disease, disorder, or clinical domain.

- Shared mission/vision
- Integration not just of care, but also functional disciplines:

  i) operations, ii) finances, iii) marketing, iv) strategy, v) planning, vi) human resources, vii) governance

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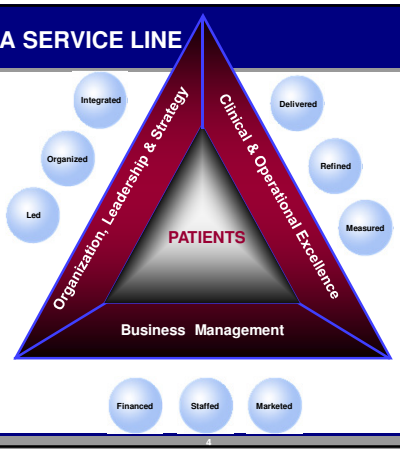
TRAUMA SERVICE LINE



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Trauma Service Line: 9 Essentials

	How quality health care is …	Drivers
Clinical	1. Organized	→ Mission and Vision
	2. Integrated	→ Multi-Disciplinary/Multi-System Focus
	3. Delivered	→ Access and Operational Excellence
	4. Refined	→ Quality Assurance/Process Improvement
	5. Led	→ Leadership, Governance, & Accountability
Business	6. Financed	→ Business Modeling, Planning, & Budgeting
	7. Staffed	→ Human Resources & Relationship-Building
	8. Measured	→ Performance Measurement & Reporting
	9. Marketed	→ Strategy, Marketing, Outreach, & Education

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9 Essentials: Stage of Program Development & Associated Time Horizon

	New Program (1-2 years)	Intermediate (3-4 Years)	Mature (>5 yrs)
1. Organized	• Mission and Vision • Define meaning of Trauma service line to the institution.	• ID pt demographics/pt analysis time/days. • Who does the Trauma want to be/serve? • Strategy to change? (EMS, Case Manager, referrals, Trauma Service Liaison)	• Continue to monitor demographics and refine vision as required by the changing market landscape.
2. Integrated	• Assess stakeholder relationships • Identify key players and multidisciplinary team members	• Buy-in & organized as team and • Approach issues as a group rather than individual players	• Members outside Trauma realize strength of group and bring issues/ideas to table
3. Delivered	• Process problems – low hanging fruit (unit/clinical care/operations focus) • Assess/ID protocols	• Programmatic service line • Complex issues, multiple services/dept • Work together across departments	• Systems view • Affects on health system as whole
4. Refined	• Trauma Quality of Care group • Communicate purpose, expectations and attendance • Develop process to ID issues/ loop closure • Filters – Clinical focus • Stakeholders WIFM	• QA and improve protocols, data driven • Refine filters- Clinical, Operational, Financial • Continuous feedback loop closure • Stakeholder involvement, give & take • Trauma Management Group	• All staff understand process for making changes • Auto report - feedback loop closure • Close relationships with other departments • Systems thinking • Communication with C-saute, resources

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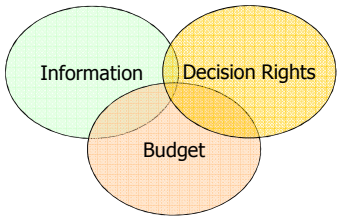
Optimal Governance Design



- Program success requires co-locating these.
- Takes leadership, commitment and resources
- Ultimately…established culture…constant refinement….perpetuates team/system thinking

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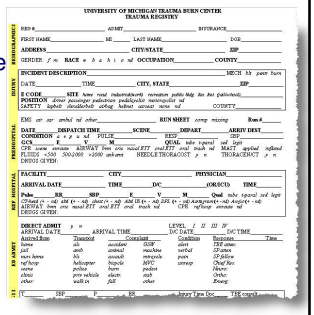
How Do We Get There?

- Need to have resources available.
- Track data from disparate areas.
  - Finance
  - Registry
  - Marry clinical & financial pictures
  - Dashboards (Not easy!)
- Team/Process in place…



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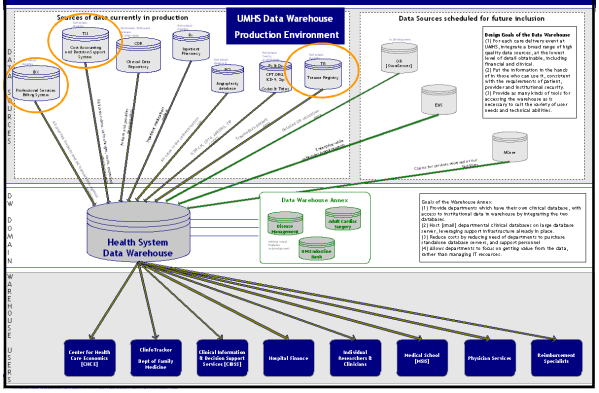
The Health System Data Warehouse



Review Healthcare Costs

But let's make sure we are on the same page...

What does it cost to deliver health care?

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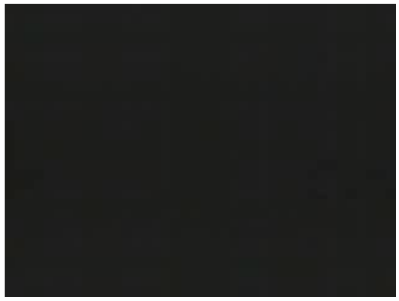
Healthcare Finance



Accounting Provides Information To Decision-Makers

Three types of accounting systems

1) Financial accounting
   - Create a summary view of operations
     - -Balance Sheet (snapshot of given day)
     - -Income Statement and Cash Flows (snapshot of period)
2) Tax accounting
   - Calculate cash flows due to government
3) Managerial (cost) accounting
   - Create analyses for a specific decision

Underlying data are the same, difference is in detail and reporting

The Core Issues

- We have a very difficult time measuring the financial success or failure of individual programs.
- This is not unique to health care.
- Our accounting systems are not designed for "horizontal care".
- Difficult to change as this type of change is seen as a zero sum game. We all want to claim the revenue, but then fight over the expenses.

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Costs

Total Cost ≡ Fixed Cost + Indirect Costs + Variable Costs

Fixed costs: Do not vary with activity levels

Variable costs: Rise/fall directly with activity levels

Marginal cost: The incremental cost of the next unit.

Opportunity cost: …

Sunk cost: …

Avoidable cost: …

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Variable Direct, Fixed Direct, And Indirect Costs

Variable Direct Costs

- These are expenses that vary directly with the level of patient care.
- These are the costs that clinicians most immediately affect, and that they are most often asked to control.

Fixed Direct Costs

- "Unit" overhead.
- Ask, "How much would it cost to keep my service open over the next month even if no patients were admitted?" This is your unit's overhead.
- Cost accountants take a portion of this overhead and allocate it to each transaction within your service.

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Variable Direct, Fixed Direct, And Indirect Costs

Indirect Costs

- "Hospital" overhead.
- Expenditures that do not reside within any service.
- Examples: Administrative salaries and subsidies to the parking structure.
- The cost accountants take a portion of this overhead and allocate it to each transaction within every service.

This explains why a Tylenol that costs 5 cents per dose at CVS cost $10.49 in a hospital setting.

It's not waste or bureaucracy; it's simply fixed costs.

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Total Cost Is The Sum Of 3 Components

VDC = $3.98

Variable direct cost

- Patient-specific costs
- Example: The Tylenol itself

FDC= $1.47

Fixed direct cost

- Allocated ***unit*** overhead
- Example: Charge nurse – allocate a portion of the cost to each Tylenol

IC= $5.04

Indirect cost

- Allocated hospital overhead
- Example: The CEO's salary -- a portion of the cost is allocated to each Tylenol.

Total Cost =$10.49

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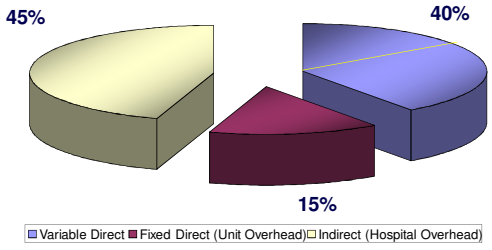
Inpatient Costs? An Educated Guess…

Almost ½ of variable cost is nursing



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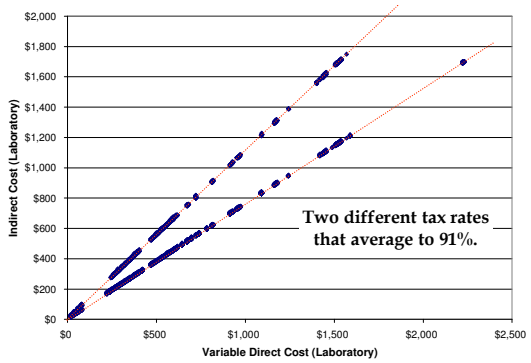
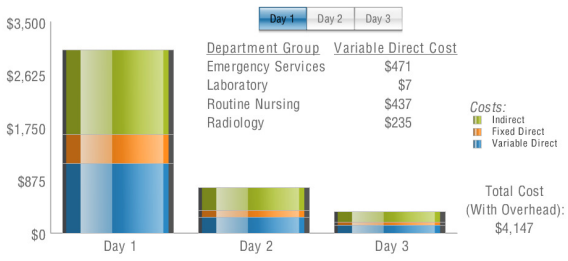
Let's next see how overhead is set …

FY 2002 Inpatient Costs by Clinical Group	Sum of Variable Direct Cost	Sum of Fixed Direct Cost	FDC/ VDC	Sum of Indirect Cost	IC / VDC	Sum of Total Cost
Nursing-Routine	$32,682,030	$12,419,172	0.38	$59,154,475	1.81	$104,255,677
Nursing-Icu	$21,282,500	$9,364,300	0.44	$30,646,801	1.44	$61,293,601
Pharmacy	$28,778,720	$4,029,021	0.14	$11,511,488	0.40	$44,319,229
Operating Room	$21,810,636	$2,617,276	0.12	$9,814,786	0.45	$34,242,698
Laboratory	$11,696,881	$6,901,160	0.59	$10,644,162	0.91	$29,242,203
Imaging Services	$5,325,369	$2,715,938	0.51	$8,041,306	1.51	$16,082,613
Ob/Gyn-Mothr/Baby	$5,440,863	$3,373,335	0.62	$5,984,949	1.10	$14,799,148
Respir/Pulmonary	$5,808,738	$2,555,845	0.44	$5,924,912	1.02	$14,289,494
Cardiac Svcs	$6,737,122	$673,712	0.10	$5,052,842	0.75	$12,463,676
Emergency Svcs	$3,268,827	$3,072,697	0.94	$2,516,997	0.77	$8,858,520
Rehab Services	$2,669,916	$1,762,144	0.66	$3,844,678	1.44	$8,276,738
Organ Txp	$2,921,840	$204,529	0.07	$2,162,161	0.74	$5,288,530
Anesthesia	$1,850,711	$740,284	0.40	$2,368,910	1.28	$4,959,906
Other Ancillary	$1,957,678	$646,034	0.33	$1,370,375	0.70	$3,974,087
Recovery Room	$1,703,302	$715,387	0.42	$1,498,905	0.88	$3,917,594
Nephrology	$1,179,881	$719,728	0.61	$1,663,633	1.41	$3,563,242
Supplies	$1,021,457	$408,583	0.40	$1,317,680	1.29	$2,747,721
Oncology	$235,716	$702,433	2.98	$914,577	3.88	$1,852,726
Med Procedure Unt	$443,332	$292,599	0.66	$833,464	1.88	$1,569,394
Neuro/Neurosurg	$355,528	$433,745	1.22	$607,954	1.71	$1,397,227
Clinic-Surgery	$247,539	$222,785	0.90	$658,453	2.66	$1,128,776
Psychiatry	$30,147	$426,692	14.22	$344,883	11.44	$803,722
Clinic-Medicine	$245,102	$161,768	0.66	$196,082	0.80	$602,952
Ob/Gyn-Other Svcs	$18,975	$27,324	1.44	$55,217	2.91	$101,517
	$157,712,811	$55,188,490		$167,129,691		$380,030,991
	41.50%	14.52%		43.98%		

Random Sample of 3500 Laboratory Transactions



What a 3-day inpatient stay might look like



Underlying Cost Structure Is No Different…

- For a clinic
- For an ambulatory surgery center
- For specific clinical domains within any of these settings …
  - The ICU
  - The ED
  - The pharmacy
  - Dialysis

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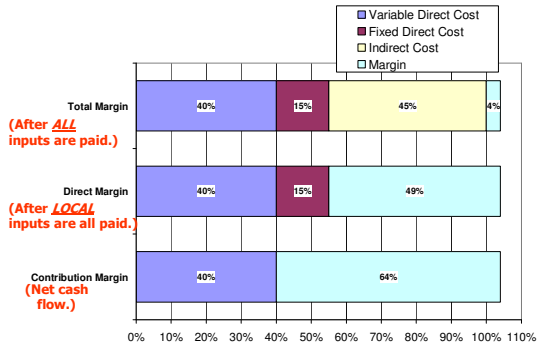
Short/Medium Run: Total Margin Is *Not* What Matters



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Physician Finances (Mean) By ISS (Trauma)*

Level of severity (ISS)	Charges	Payments	Adjustments	% Collection
Critical (>24)	$16,903	$8,217	$7,317	~ 49
Major (15-23)	$10,838	$5,003	$4,340	~ 46
Moderate (9-14)	$8,316	$3,535	$4,007	~ 42
Minor (<9)	$4,187	$1,454	$1,984	~ 35

*This includes all physicians (i.e. Ortho, NS, GS…)

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Financial Impact: Hospital - Trauma

Level (ISS)	Patient count	LOS (days)	Revenue (mean)	Total cost (mean)	Contribution margin (mean)	Margin (mean)
Critical (>24)	580	12.7	$58,246	$48,483	$38,272	**$9,763**
Major (15-23)	567	8.7	$30,916	$26,636	$20,401	**$4,279**
Moderate (9-14)	1358	6.3	$18,781	$16,576	$12,073	**$2,205**
Minor (<9)	918	2.9	$8,570	$7,160	$5,915	**$1,409**

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Burn Margins

% TBSA	Patient count	LOS (days)	Revenue (mean)	Total cost (mean)	Contribution margin (mean)	Margin (mean)
0-10	260	5.6	$13,779	$13,898	$8,107	-$119
10-20	86	11.6	$32,295	$32,486	$18,829	-$191
20-40	62	26	$95,004	$115,131	$45,879	$20,126
>40	29	24	$184,301	$160,533	$90,554	$23,844

In the long, run you must cover your total costs (they are real). In the short run, just the variable costs.

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Drill Down

- NIS data, 3 years, >10,000 burn pts
  - High volume hospitals >100 pts per year
  - Low Volume hospitals <20 pts per year
- Outcomes and clinical trends
- Published

Referral Patterns and Severity Distribution of Burn Care: Implications for Burn Centers and Surgical Training. Annals of Plastic Surgery. 54(4):412-419, April 2005.

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In the "with complications" DRGs, high-volume hospitals have mortality 2x – 3x greater than low-volume hospitals.

DRG	Hospital Volume Type	Discharge Disposition: Home Without Care	Requiring Home Health	Transfer to Another Institution	Expired	Total Admit Count
506	High	63.1%	16.1%	16.1%	4.8%	610
	Low	54.5%	21.1%	22.8%	1.7%	413
507	High	85.2%	11.6%	3.1%	0.1%	748
	Low	79.6%	13.4%	6.9%	0.0%	476
508	High	69.5%	12.7%	13.6%	4.2%	118
	Low	51.4%	18.1%	28.7%	1.8%	387
509	High	86.5%	9.0%	3.6%	0.9%	333
	Low	69.8%	12.4%	17.6%	0.2%	404
510	High	72.8%	10.6%	11.9%	4.7%	471
	Low	61.8%	18.2%	18.6%	1.5%	997
511	High	91.9%	6.1%	1.9%	0.1%	1661
	Low	82.1%	11.7%	6.2%	0.1%	1900

DRG	DRG Description
506	Full Thickness Burn *With* Skin Graft or Inhalation Injury *With* Complications Or Significant Trauma
507	Full Thickness Burn *With* Skin Graft or Inhalation Injury *Without* Complications Or Significant Trauma
508	Full Thickness Burn *Without* Skin Graft or Inhalation Injury *With* Complications Or Significant Trauma
509	Full Thickness Burn *Without* Skin Graft or Inhalation Injury *Without* Complications Or Significant Trauma
510	Non-Extensive Burns *With* Complications Or Significant Trauma
511	Non-Extensive Burns *Without* Complications Or Significant Trauma

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***And yet*, in all groups, high-volume hospitals are also much more likely to have routine discharges.**

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As such, high-volume hospitals have lower rates of home health care and transfers.

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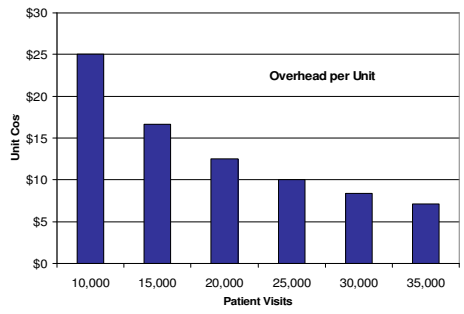
Down Stream Revenue

- All TB service patients: 3,679 (2002-2004)
  - Initial admissions: $103M net revenue
    - $44M direct margin (43% of revenues)
  - 17,000 outpatient visits
    - Outpatient revenue $14M
  - 1,566 admitted later
    - Inpatient revenue $26M
- Stickiness…..

Trauma Center Downstream Revenue: Impact of Incremental Patients within a Health System. J Trauma, 2007;62:615-621

A new _____ has fixed costs of $250,000. This can be amortized …



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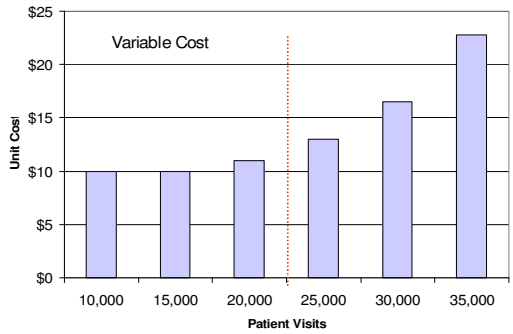
Congestion Rises With Volume
Especially > 20,000 Visits



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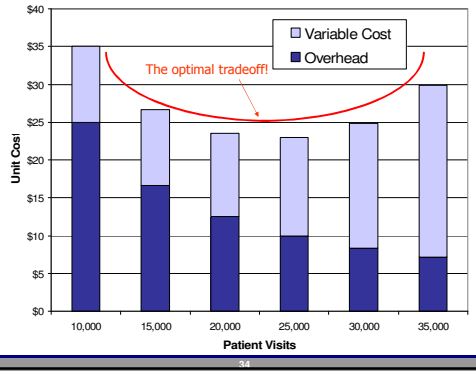
Giving Rise To A U-shaped Unit Cost



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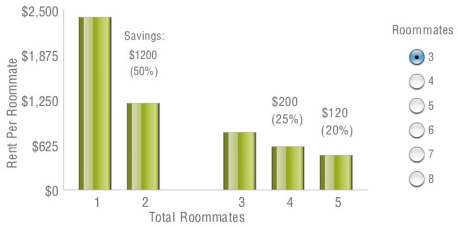
Fixed Costs: College Senior Rents 3br Apt: $2400



When is the line to the bathroom too long?

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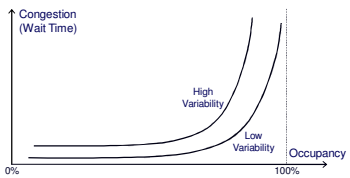
Occupancy ➔ Reduce variability

(A free lunch: Higher utilization and less congestion)

- Consider three variables: occupancy, congestion, and variability. They are related –



- One way to improve operational efficiency is to reduce variability, thereby enabling higher average occupancy. Also – break bottlenecks, expedite critical pathways….Lean!
- Ex: Auto assembly lines maintain higher utilization (& thus, greater throughput) than auto body repair shops.

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How is a hospital like an airplane?

For hospitals & airlines, most costs are fixed.

- Like hospitals, airlines have high up front costs and modest marginal costs.
- So do universities, oil refineries, internet companies, publishers, restaurants, manufacturers, & most other businesses.

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Airline Capacity Rationalization

- Erect airports and other infrastructure
- Invest in the right fleet of planes (not merely size but also configurations, interoperability, etc)
- Develop the appropriate route structure, with hubs & spokes, direct & indirect, maintenance schedules, etc
- Schedule flights
- Provide passengers with strong & ever-changing incentives
- Pool with other airlines … or not.
- And much more …

The cost of airline travel is nearly 100% fixed.

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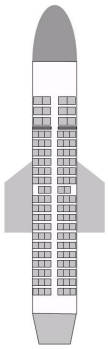
How is a hospital like an airline?



This aircraft is a valuable asset, and nearly all costs are overhead. Once the flight is deployed, those costs are fixed and "sunk." They are expended whether one passenger boards or 118.

Marginal cost is the expense of adding one more passenger (≈$0).

Opportunity cost is the value of the next best opportunity foregone.

Once the airline decides, the goal is to "segment" its customers and then to ***fill the plane!***

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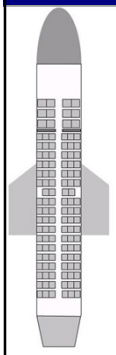
An Airline Analogy: A Hypothetical



Suppose flight & airline overhead = $24,000

Suppose marginal cost is ...

Coach = $10/passenger

1st class = $25/passenger

Suppose the expected load is ...

74 coach passengers

6 -1st class passengers

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What is the *total* cost of each ticket?

- Let $x = overhead assigned each coach passenger.
- Just suppose $3x = overhead assigned to each first class passenger.
- Then 74(x) + 6(3x) = $24,000 ➔ x = $261.
- The total cost of coach = $261 + 10 = $271.
- The total cost of 1st class = $783 + 25 = $808.
- Note: 74 tix @ $271 and 6 tix @ $808 means that the flight just breaks even.
- These are targets for quantities & *average* prices.

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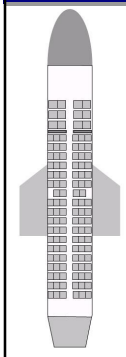
Internet Discounts



- Delta sells as many advance tickets as it can at prices exceeding total cost, but a few days beforehand it forecasts how many seats will be empty, and it offers them at very low prices.
- If price exceeds marginal cost, the cyberfares are profitable.

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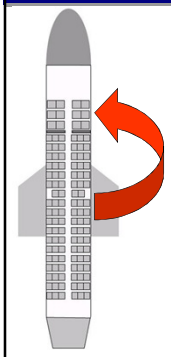
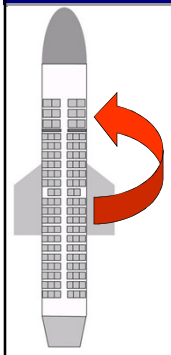
If the flight is overbooked?



Even before the airline bribes passengers to take later flights, it typically permits some coach passengers to pay a relatively small fee to upgrade to first class.

43

An Airline Analogy



- Recall: the total cost of a coach passenger is $271 and the total cost of a first class passenger is $808.
- How can it be profitable to allow coach passengers to upgrade for a mere $50?

A "Flex" ICU operates on the same principle.

44

The "Flex" ICU

- The problem with Trauma Burn ICU
  - Idiosyncratic admissions
  - Highly variable – both in terms of acuity and volume
- Makes staffing highly variable
  - Scheduling of road trips, PT, labs and the like more variable.

Financially costly

45

"Flexing" an ICU ≡ the airline's 1st class upgrade

- Rule #1: Retain all ICU patients in the unit until they are discharged from the hospital, or until the ICU reaches capacity.
- Rule #2: Change patients' billing from ICU to floor status at the same point in their care as we always have.
- Rule #3: Adjust ICU staffing downward to reflect the care that patients would receive on the floor, but do not actually move them (unless the ICU becomes full).

46

Payoffs To "Flexing" Our ICU …

- Patient satisfaction higher
  - Continuity of care, proximity to care
- Opens floor beds - which are often in short supply
- Modest savings to payers (e.g., no transfer cost)
- Higher bed utilization in the ICU and on the floor
  - ➔ increased revenues and better fixed cost amortization
- Reduced nurse staffing variation
  - ➔ Nursing turnover declined from 44% To 12%/year
  - ➔ Budget variance reduced from 18% to <3%
- Enhanced communication between nursing and MD's
- Large amounts of political capital

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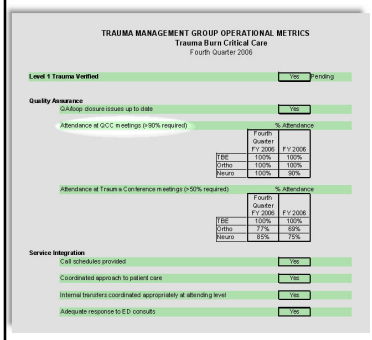
Next Steps



TRAUMA MANAGEMENT GROUP OPERATIONAL METRICS
Trauma Burn Critical Care
Fourth Quarter 2006

Level 1 Trauma Verified — Yes / Pending

Quality Assurance
QA/loop closure issues up to date — Yes
Attendance at QCC meetings (>90% required) — % Attendance

	Fourth Quarter FY 2006	FY 2006
TBE	100%	100%
Ortho	100%	100%
Neuro	100%	90%

Attendance at Trauma Conference meetings (>50% required) — % Attendance

	Fourth Quarter FY 2006	FY 2006
TBE	100%	100%
Ortho	77%	59%
Neuro	85%	75%

Service Integration
Call schedules provided — Yes
Coordinated approach to patient care — Yes
Internal transfers coordinated appropriately at attending level — Yes
Adequate response to ED consults — Yes

- •Build strategy
- •Tell the story
- •Credible
- •Transparent
- •Trauma Mangmnt Grp
  - •Ortho, Neuro, Finance, COO, Trauma, Admin
- •Garner resources
  - •HR & Financial
- •MD leadership is key!

48

Next Up…. How To Make It Happen

- Health Systems are large fixed cost enterprises.
- Need to understand financial metrics and tell the story.
- Managing clinical processes and throughput is the key to efficient delivery.
- Next…..more on the how to!!
  - Betsy Seislove

48

Trauma Service Line: What is it? Why do we need one? What do they do?

50

Trauma Service Line: Mission

To provide superior trauma and burn services to patients of all ages and their families, focusing on preventive, acute and continuing care.

This mission will be accomplished by integrating clinical excellence, advocacy, research and education into our care delivery model.

51

Why a Service Line?

- "the service line model allows community hospital administrators to focus simultaneously on financial, operational and patient satisfaction objectives."
- "best strategy is to maintain open communication and support."
- "ensure that service line directors and affiliated physicians do not come entrenched in a "silo mentality""

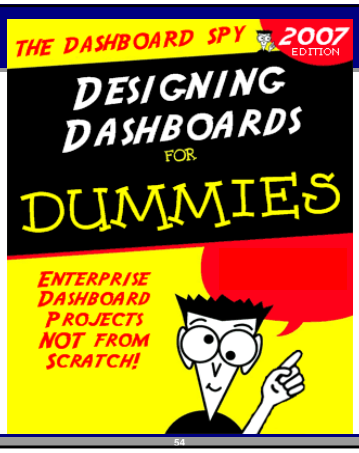
The Advisory Board Company (Washington D.C.) May, 2003

52

Some of our Initiatives as a Service Line

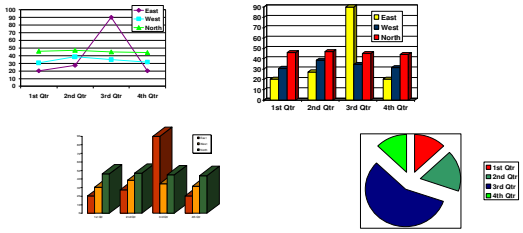
- Development of a Dashboard
- Multidisciplinary Rounds with the use of a "Checklist"
  - Evidence of Cost Savings
- Crew Resource Management
  - Enhance communication, increase efficiency, decrease cost and increase satisfaction (All customers and staff)

53



54

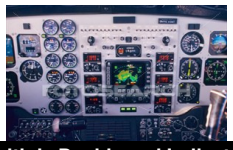
Do these look familiar?



Most of us use these types of graphs to track individual occurrences

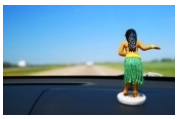
55

What is a Dashboard?



Multiple Dashboard Indicators

Simple Dashboard



The Ultimate Dashboard

56

Dashboard Definition:

Distills performance data into a few key metrics, giving user friendly snapshots of service line's performance

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Four Key Elements of a Dashboard

1) **Financial** (ex: Profit margins)
2) **Operational** (ex: average daily census)
3) **Clinical Quality** (ex: Mortality)
4) **Satisfaction** (ex: Patient/Family, Physician, staff)

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Elements of an EFFECTIVE Dashboard

- **Metric Balance** (balance financial and operational indicators with physician satisfaction)
- **Metric Austerity** (limit number of metrics 15-30)
- **Graphic Display** (bar graphs, control chart, spider diagram)
- **Action Triggers** (target or thresholds that trigger action)

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So what did we know?

- We had a Trauma Burn Service Line
  - Meeting every 2 weeks to make specific decisions regarding our service
- Annual goals that needed to be set as well as tracked
- Measure outcomes
- How could we do this in the most efficient and seamless manner?

A DASHBOARD DESIGN

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Stakeholders

- Trauma Burn Service Line
  - Trauma Burn Council
- Senior Management
- Trauma Service
  - Trauma Attendings
  - Mid Level providers
  - Coordinators
  - Trauma office
- Outreach staff

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Who comprised the team?

- **Clinical Services**
  - **Nursing administration**
    - **Nurse administrator for the ED and trauma units**
  - **Directors from:**
    - **Trauma/Neuro ICU**
    - **Trauma Med/Surg**
    - **Burn**
    - **Aeromedical**
- **Finance**
- **Patient Representative**
- **IS analyst**
- **Trauma Registry Data Analyst**
- **VP of the service line**

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Best Practice in Dashboard Development

- **Select Indicators**
- **Select Format**
- **Select Targets**
- **Seek Computerized Solutions**

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Metrics: Indicators

	Metric Source	Frequency	Sponsor
Financial	Finance	Q 6 months	Dave Freedman
Trauma: Net Rev/discharge Direct Expense per discharge			
Burn: Net Rev/discharge Direct Expense per discharge			
Direct Dpt. Contribution Margin/**Trauma** discharge Direct Dpt. Contribution Margin/**Burn** discharge			
Volume: Track by D/C			
Volume for: Adults, Pediatric Trauma Adults, Pediatric Burn	Collector –HPM (HBI)	Monthly	Judy Schultz
Transfer Ins	Collector –HPM (HBI)	Monthly	Judy Schultz
MedEvac	Collector –HPM (HBI)	Monthly	Keith Micucci
Outreach	Goldmine	Quarterly	Nancy Heacock

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Metrics: Indicators

		Metric Source	Frequency	Sponsor
Operational				
LOS		Collector HPM (HBI)	Weekly	Judith Schultz
Quality				
Trauma:	**Burn:**			
VAPs	VAP	ID/Collector HPM	Monthly	Infection Control
Failed Extubations	Graft Loss	POPIMS/Collector	Monthly	Judith Schultz
UTI	UTI	ID/Collector	Monthly	Infection Control
Satisfaction				
Physician Patient Staff		Physician Survey Patient Satisfaction (Press Ganey) Staff Survey's	Annually Monthly vs. Quarterly Every 2 years	
Family presence during resuscitation		Press Ganey	Monthly	

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Format

- Spider Diagram
  - Current Period Information
  - Target
  - Variance
  - Achievement
  - Prior year
  - Actuals
    - Year to date
    - Target year to date
    - Year to date variance
    - Achievement year to date
    - Actual ALL year

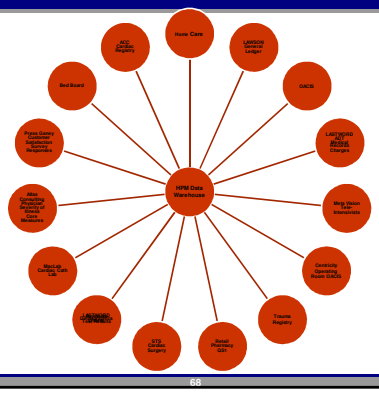
66

Computerized System

- McKesson
  - Horizon Business Insight (HBI)
    - Tool that provides secure access to timely and accurate information from virtually any system
    - Point of access information in an instant

67

HPM Data Warehouse Resources



68

HBI

- Building and Maintaining
  - Data Definitions
  - Data Downloads
    - When, how, who
  - Test-Test-Test
    - Can we add?
    - Can we see?
    - Can we drill down?
  - Highlights
- Instructor Manual

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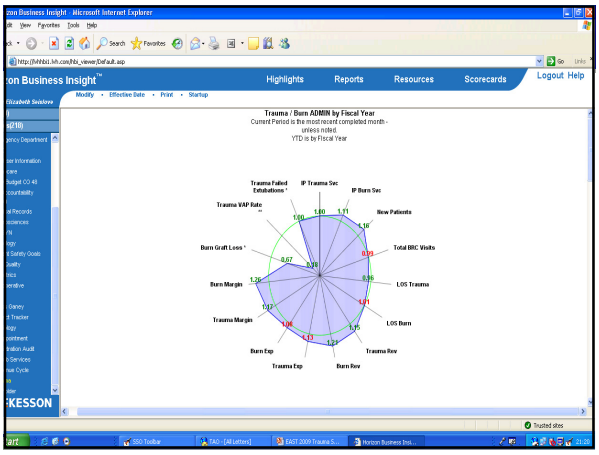
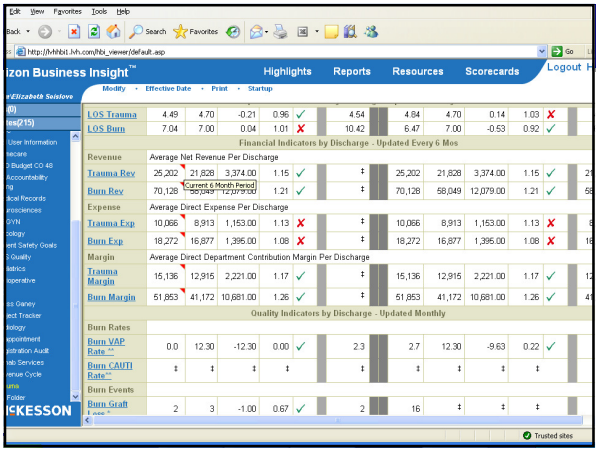

Business Insight
Highlights
Reports
Resources
Scorecards
Logout Help
Trauma / Burn ADMIN by Fiscal Year
Current Period is the most recent completed month - unless noted.
YTD is by Fiscal Year
Trauma Failed Extubations *
IP Trauma Svc
IP Burn Svc
Trauma VAP Rate
New Patients
Burn Graft Loss *
Total BRC Visits
Burn Margin
LOS Trauma
Trauma Margin
LOS Burn
Burn Exp
Trauma Rev
Trauma Exp
Burn Rev


Business Insight
Highlights
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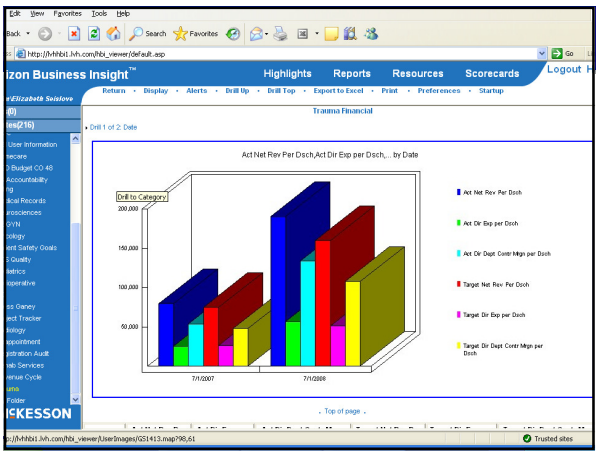
Logout
Modify
Effective Date
Print
Startup
LOS Trauma 4.49 4.70 -0.21 0.96 4.54 4.84 4.70 0.14 1.03
LOS Burn 7.04 7.00 0.04 1.01 10.42 6.47 7.00 -0.53 0.92
Financial Indicators by Discharge - Updated Every 6 Mos
Revenue
Average Net Revenue Per Discharge
Trauma Rev 25,202 21,828 3,374.00 1.15 25,202 21,828 3,374.00 1.15
Burn Rev 70,128 58,049 12,079.00 1.21 70,128 58,049 12,079.00 1.21
Current 6 Month Period
Expense
Average Direct Expense Per Discharge
Trauma Exp 10,066 8,913 1,153.00 1.13 10,066 8,913 1,153.00 1.13
Burn Exp 18,272 16,877 1,395.00 1.08 18,272 16,877 1,395.00 1.08
Margin
Average Direct Department Contribution Margin Per Discharge
Trauma Margin 15,136 12,915 2,221.00 1.17 15,136 12,915 2,221.00 1.17
Burn Margin 51,853 41,172 10,681.00 1.26 51,853 41,172 10,681.00 1.26
Quality Indicators by Discharge - Updated Monthly
Burn Rates
Burn VAP Rate ** 0.0 12.30 -12.30 0.00 2.3 2.7 12.30 -9.63 0.22
Burn CAUTI Rate***
Burn Events
Burn Graft 2 3 -1.00 0.67 2 16
Trusted sites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Highlights
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Alerts
Drill Up
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Export to Excel
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Preferences
Startup
Trauma Financial
Drill 1 of 2: Date
Act Net Rev Per Dsch,Act Dir Exp per Dsch,... by Date
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200,000
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100,000
50,000
7/1/2007
7/1/2008
Act Net Rev Per Dsch
Act Dir Exp per Dsch
Act Dir Dept Contr Mrgn per Dsch
Target Net Rev Per Dsch
Target Dir Exp per Dsch
Target Dir Dept Contr Mrgn per Dsch
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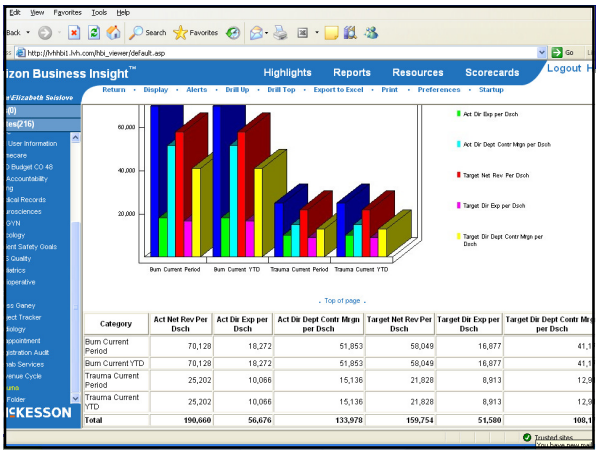
Horizon Business Insight
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40,000
20,000
Burn Current Period
Burn Current YTD
Trauma Current Period
Trauma Current YTD
Act Dir Exp per Dsch
Act Dir Dept Contr Mrgn per Dsch
Target Net Rev Per Dsch
Target Dir Exp per Dsch
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Category
Act Net Rev Per Dsch
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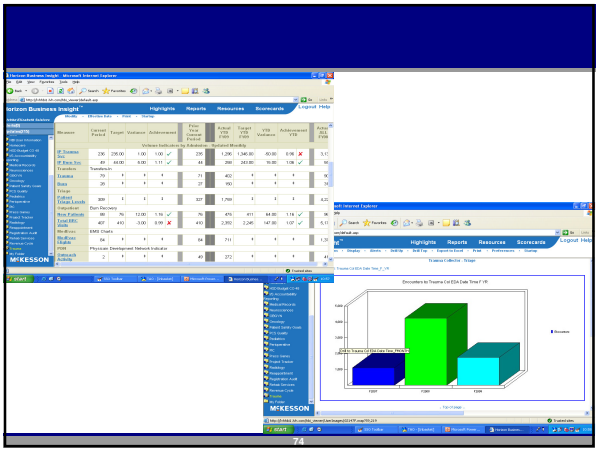
Act Dir Dept Contr Mrgn per Dsch
Target Net Rev Per Dsch
Target Dir Exp per Dsch
Target Dir Dept Contr Mrgn per Dsch
Burn Current Period 70,128 18,272 51,853 58,049 16,877
Burn Current YTD 70,128 18,272 51,853 58,049 16,877
Trauma Current Period 25,202 10,066 15,136 21,828 8,913
Trauma Current YTD 25,202 10,066 15,136 21,828 8,913
Total 190,660 56,676 133,978 159,754 51,580
MCKESSON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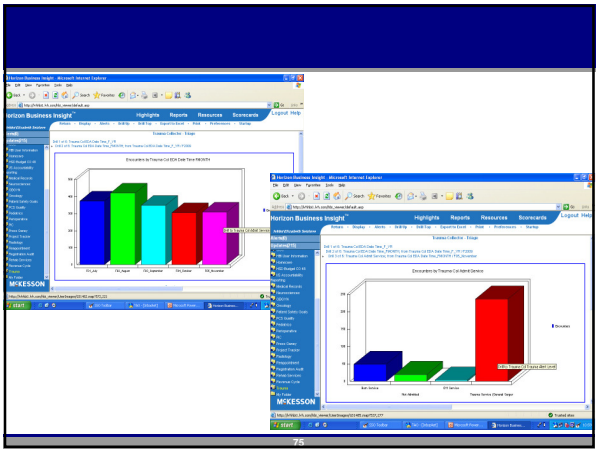
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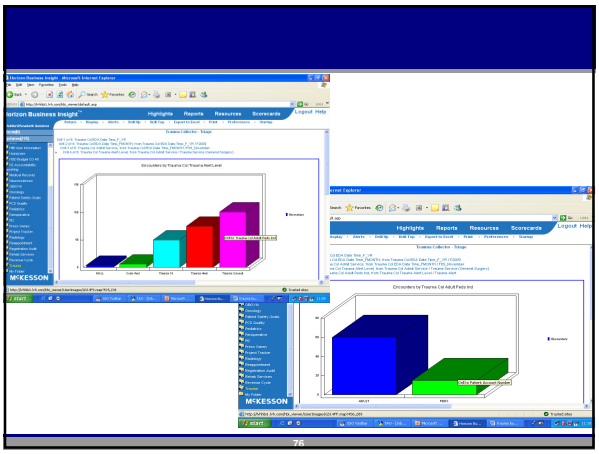
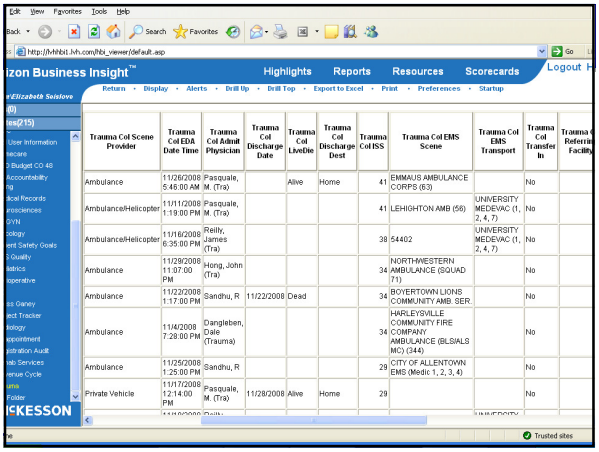




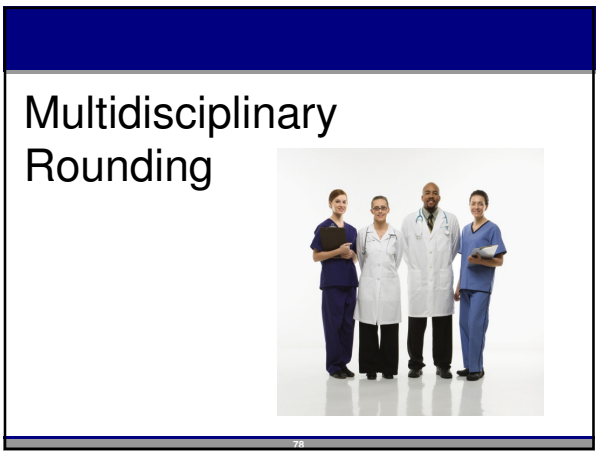
Edit View Favorites Tools Help

http://vhhbi1.lvh.com/hbi_viewer/default.asp

Horizon Business Insight™ Highlights Reports Resources Scorecards Logout

Return • Display • Alerts • Drill Up • Drill Top • Export to Excel • Print • Preferences • Startup

Trauma Col Scene Provider	Trauma Col EDA Date Time	Trauma Col Admit Physician	Trauma Col Discharge Date	Trauma Col LiveDie	Trauma Col Discharge Dest	Trauma Col ISS	Trauma Col EMS Scene	Trauma Col EMS Transport	Trauma Col Transfer In	Trauma Col Referring Facility
Ambulance	11/26/2008 5:48:00 AM	Pasquale, M. (Tra)		Alive	Home	41	EMMAUS AMBULANCE CORPS (63)		No	
Ambulance/Helicopter	11/11/2008 1:19:00 PM	Pasquale, M. (Tra)				41	LEHIGHTON AMB (56)	UNIVERSITY MEDEVAC (1, 2, 4, 7)	No	
Ambulance/Helicopter	11/16/2008 6:35:00 PM	Reilly, James (Tra)				38	54402	UNIVERSITY MEDEVAC (1, 2, 4, 7)	No	
Ambulance	11/29/2008 11:07:00 PM	Hong, John (Tra)				34	NORTHWESTERN AMBULANCE (SQUAD 71)		No	
Ambulance	11/22/2008 1:17:00 PM	Sandhu, R	11/22/2008	Dead		34	BOYERTOWN LIONS COMMUNITY AMB SER		No	
Ambulance	11/4/2008 7:28:00 PM	Dangleben, Dale (Trauma)				34	HARLEYSVILLE COMMUNITY FIRE COMPANY AMBULANCE (BLS/ALS MC) (344)		No	
Ambulance	11/25/2008 1:25:00 PM	Sandhu, R				29	CITY OF ALLENTOWN EMS (Medic 1, 2, 3, 4)		No	
Private Vehicle	11/17/2008 12:14:00 PM	Pasquale, M. (Tra)	11/28/2008	Alive	Home	29			No	



Old School of Rounding PITFALLS

- New Residents
  - Do they know how to present?
  - What to present?
  - Did they actually assess the patient or did they ask the nurse?
- Psycho-social issues? What are they?
- Family? Why include them?
- Daily Labs? Diagnostics? "They're in the ICU, right?"
- Cost savings, what is that?
- Because I want to or that's the way I have always done things
- Aren't we supposed to have the most expensive "stuff"?

New Rounding Concepts: PEARLS

- Resident Orientation and expectations
- Rounding Check List
  - Why do we need labs today
  - Do we need that diagnostic study?
  - Did we consult the right sub-specialties and right ancillary specialties?
  - Did we talk with family today?
  - Does the patient still need a foley? Central Line?

Who Does this Check List?

- Nursing
- Mid-Level Practitioners
- Surgical Chief
- Fellow

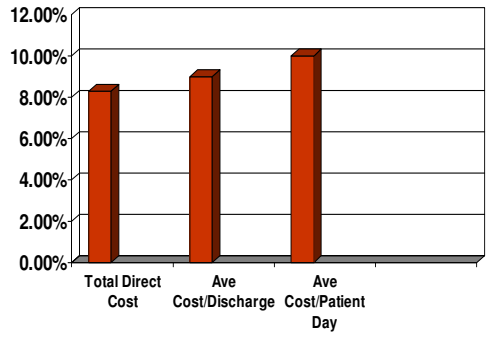
Does the patient need?		
IVF Type and total fld order		
Foley Catheter		
Arterial Line		
Central Line		
Daily Labs		
Daily CXR		
Protocol Assessment		
Stress ulcer prophylaxis		
VTE Prophylaxis		
Electrolyte protocol		
Agitation/Sedation/Pain		
Bowel regimen		
Nutritional Support		
Tight Glycemic control		
Consult Assessment		
Trauma Rehab		
SAC		
Geriatrics		
Pediatrics (<=14y/o)		
Case management assessment		
Sedation/Paralytic weaning		
Mobility orders and actual		
Restraints ordered		
C-T-L Spines cleared		
VAP Bundle (chlorhexadine)		
Weaning Ventilator settings		
Home meds reconcilled		

Family Update (Was note written)		
Which family member		
Which member of team		
Documentation		
Attending Signed H&P in chart		
Daily Note in chart (signed)		
Procedure log updated		
Performed by (Initials): Nurse:		
Resident/Mid-Level:		
Attending:		

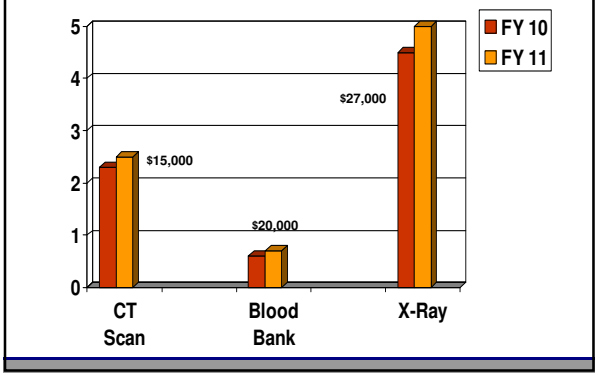
Morbidities

- Decrease in UTI Rate
- Decrease in VAP's
- Decrease in ICU LOS
- Decrease in vent days
- Decrease in total hospital LOS
- Mortality Rate

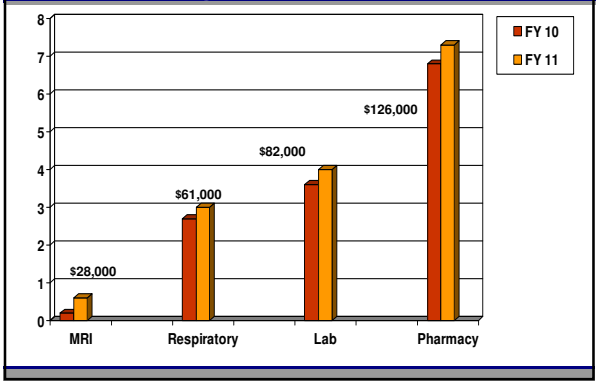
Overall Cost Savings



Cost Savings



Cost Savings



Communication:
Crew Resource Management

87

Institute of Medicine

Recommendation

"Healthcare Organizations….establish interdisciplinary team training programs for providers to incorporate proven methods of team training…….as exemplified in aviation"

Adapted from WellSpan Health

Need for Teams

- Complexity beyond individual vigilance
- Flexible highly trained teams manage unexpected events well
- Good teams communicate well
  - Common mental models
  - Clear situational awareness
  - Expected communication patterns

Need for Teams (cont'd)

- Team members must be accountable
  - to the patient
  - to each other
  - to themselves
- Not simply independent individuals making a contribution, but interdependent individuals depending on each other

Adapted from Donald Moorman, MD ACS Course on Safe OR Practices

Essential Team Elements

- Common purpose and shared goals
- Interdependent actions
- Accountability
- Collective effort
- Clear and defined leadership

Questions to Ask

- Who were all those people?
- Who was in charge?
- Where was there PPD?
- Where was the patient?

- The unfortunate thing is……..this is all too common.

Is this Better?

Better?

- Where was the crowd of people?
- There was a patient
- Appears to be communication
- Organized
- Calm

History at LVHN

- Core Trauma Nursing
  - "Fix" the problem
- Service Line
  - "Break Down" the silo's?
  - Pre-Hospital/Hospital Liaison's
    - "Break Down" the walls?
    - We knew that EMS was not happy
    - Surveys and Observations

The Survey Tells it All

- Adopted Survey from our colleagues but we added a few more questions
  - Survey Monkey
  - WOW!!!
    - But not surprised
  - Next Steps
    - Narrowed down to the "themes"
      - No defined leader
      - No organization
      - Listening skills

History

- Performance Improvement
  - Hotline
    - Dysfunction

  - 3 page Checklist
    - Non Compliance
  - Sub-Committees
    - Meet frequently…….outcome??
    - Next Survey going out NEXT week during EMS week

Communication Elements

GOOD	BAD
Eye Contact	Lacks assertiveness
Active listening	Disengaged team
Focus on issues	Disrespectful language
Confirm understanding	Omission of important information
Clear and Concise information	

We are human and not perfect.

Errors happen…

…but effective teams operating in a safety conscious environment can prevent the error from reaching the patient.

WellSpan Health

Healthcare and Human Error

Inherent Risks	Human Error

• Technologically complex
• Constantly changing medications and equipment technology
• Time pressures
• Variable individual competence
• Every patient is different
	• At point of care
	• Involve human issues
	  • Fatigue
	  • Knowledge
	  • Reliance on personal **PERFECTION**
	• Humans are not perfect

How Does Effective Communication Assist Teams?

- Mutual understanding of
  - Problem
  - Goal
  - Strategies
- Foster communication
- Provides context for action
- Assists team members predict behavior or needs of other team members
- Assists team members to identify problems
- Lack of effective communication is a common source of trauma resuscitation conflict

Summary

- A commitment to teamwork
- Mutual Accountability
- Acknowledgement of human fallibility
- Professional respect

Summary

- Create a plan, implement, update
  - Tell your story, leverage across institution
  - Need to continually improve and look for competitive edge
  - Think above and beyond the day to day, higher level strategic thinking
- The name of the game in a fixed cost business is throughput.
  - You need real process improvement to make it happen!

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Summary

- There are many components of trauma that must work in concert for the program to enjoy success and growth.
- Collectively, we need to begin functioning as a multidisciplinary administrative team to get it right.
  - We owe it to ourselves, patients, and institution.

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The truth of the matter is that you always know the right thing to do. The hard part is doing it."

Schwarzkopf
Norman Schwarzkopf