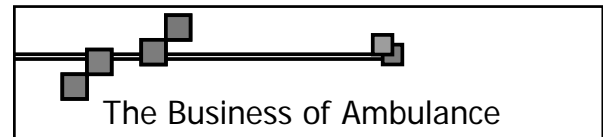


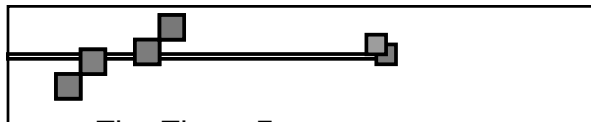
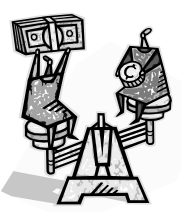
Economic Efficiency & System Funding

Richard A. Keller
Doug Wolfberg



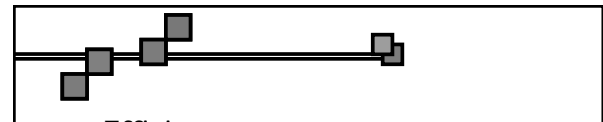
The Business of Ambulance Services

- Complex economic model
- Variability between ambulance services
- Challenge to balance expenses and revenue



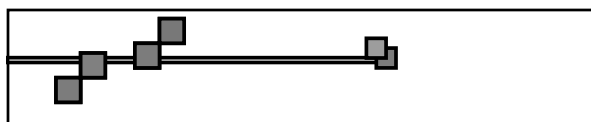
The Three E's

- Efficiency
- Effectiveness
- Economy



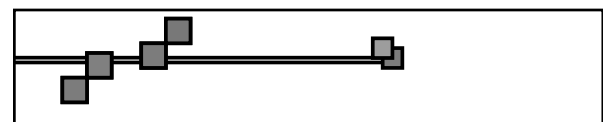
Efficiency

- Do more with the same amount of resources



Effectiveness

- Provide additional services or improve existing services



Economy

- Deliver the current level of services with fewer resources

The Unit-Hour

- An hour that an ambulance is staffed and on duty
- Used in calculating productivity, utilization, and costs

Calculating Unit Hours

4 – 24 hr. ambulances / 7 days per week
2 – 12 hr. ambulances / 7 days per week
4 – 10 hr. ambulances / 5 days per week

How many annual unit hours?

Calculating Unit Hours

4 amb X 24 hrs X 365 days =
2 amb X 12 hrs X 365 days =
4 X 10 hr X 5 days X 52.14 wk =

Calculating Unit Hours

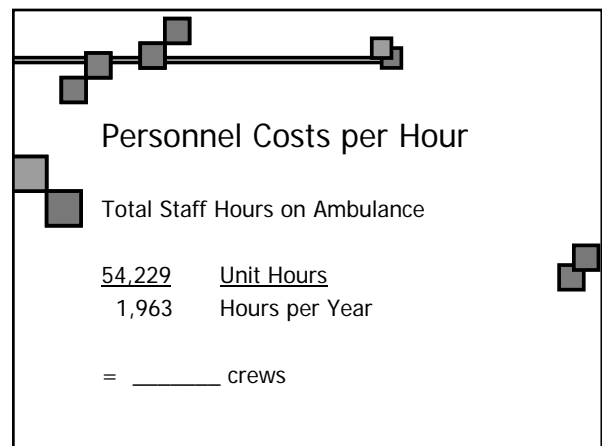
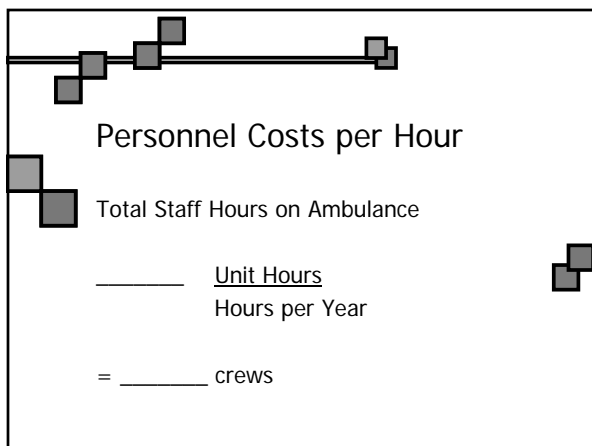
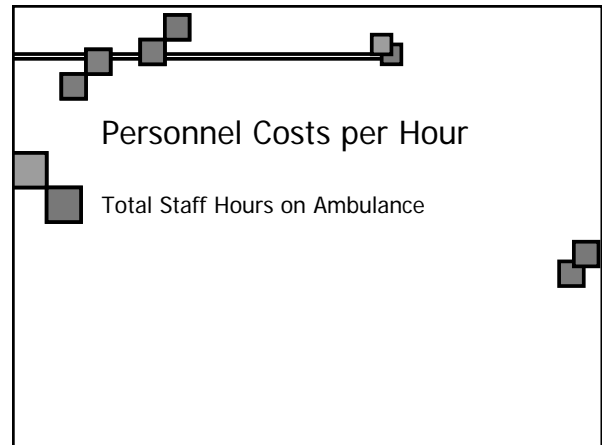
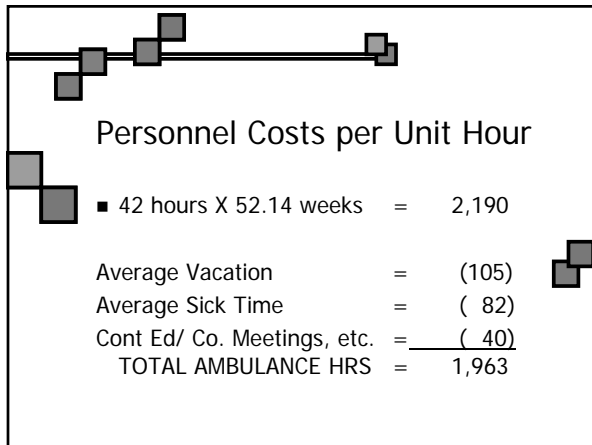
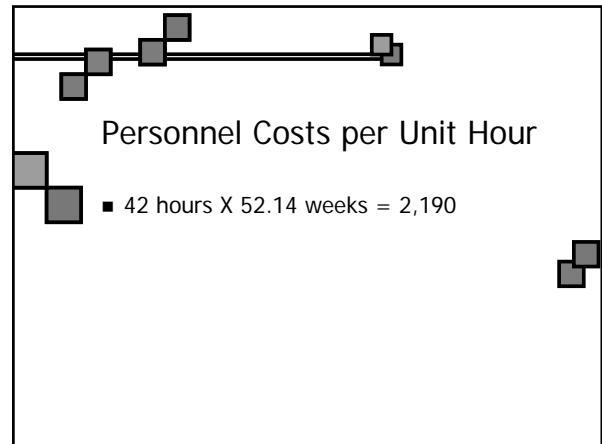
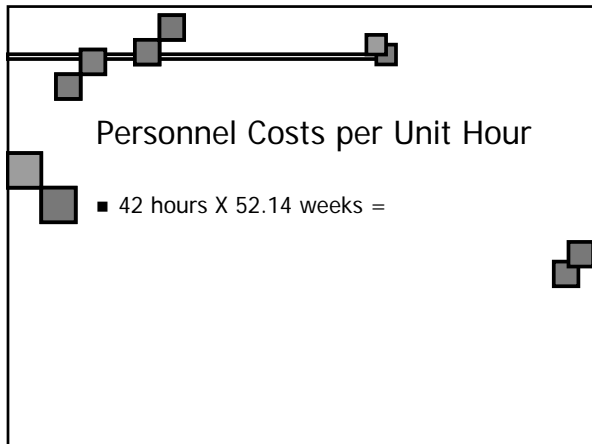
4 amb X 24 hrs X 365 days = 35,040 uh
2 amb X 12 hrs X 365 days = 8,760 uh
4 X 10 hr X 5 days X 52.14 wk = 10,428 uh

Calculating Unit Hours

4 amb X 24 hrs X 365 days = 35,040 uh
2 amb X 12 hrs X 365 days = 8,760 uh
4 X 10 hr X 5 days X 52.14 wk = 10,428 uh
TOTAL ANNUAL UNIT HOURS = 54,229 uh

Personnel Costs per Unit Hour

- 42 hours per week
- How many hours per year?



Personnel Costs per Hour

Total Staff Hours on Ambulance

$\frac{54,229 \text{ Unit Hours}}{1,963 \text{ Hours per Year}}$

= 27.63 crews

Personnel Costs per Hour

Total Staff Hours on Ambulance

$\frac{54,229 \text{ Unit Hours}}{1,963 \text{ Hours per Year}}$

= 27.63 crews

X 2 Crew Members = _____ FTE's

Personnel Costs per Hour

Total Staff Hours on Ambulance

$\frac{54,229 \text{ Unit Hours}}{1,963 \text{ Hours per Year}}$

= 27.63 crews

X 2 Crew Members = 55.25 FTE's

Personnel Costs per Hour

Average Wages for EMT-P = \$60,000

Average Wages for EMT = \$45,000

Personnel Costs per Hour

60% of FTEs are EMT-P
40% of FTEs are EMT

$55 \times 0.60 = 33 \text{ EMT-P}$
 $55 \times 0.40 = 22 \text{ EMT}$

Personnel Costs per Hour

33 EMT-P X \$60,000 = \$ _____

22 EMT X \$45,000 = \$ _____

TOTAL WAGES = \$ _____

Personnel Costs per Hour

33 EMT-P	X \$60,000	=	\$1,980,000
22 EMT	X \$45,000	=	\$1,485,000
TOTAL WAGES		=	\$3,465,000

Personnel Costs per Hour

Total Amb Staffing Wages	=	\$3,465,000
Total Unit Hours	=	54,229

Personnel Costs per Hour

Total Amb Staffing Wages	=	\$3,465,000
Total Unit Hours	=	54,229
= Personnel Cost Per Unit Hour or		
\$63.90		

Productivity

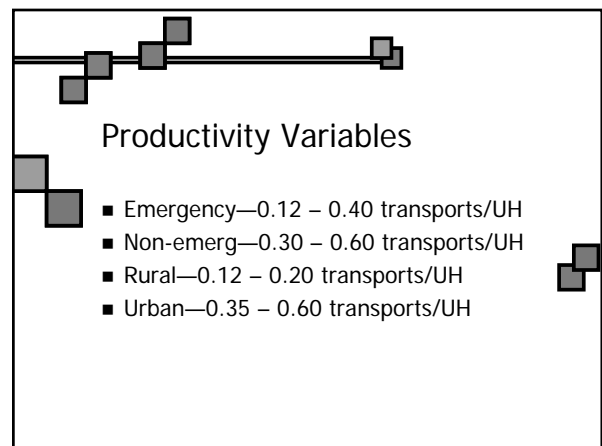
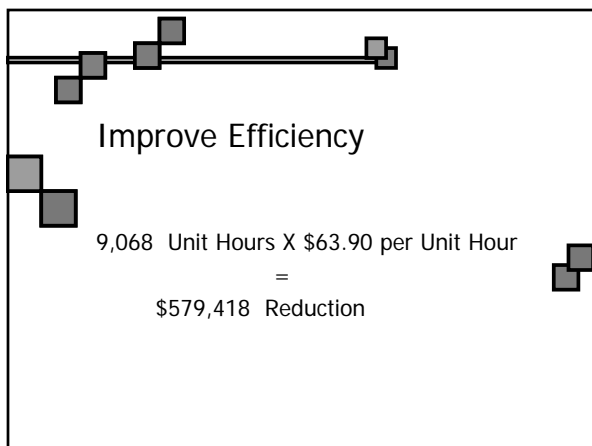
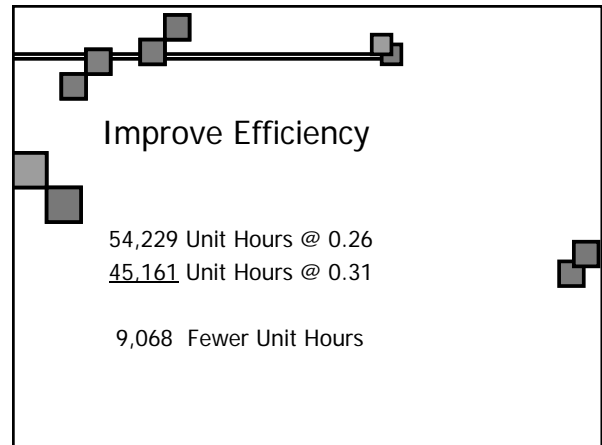
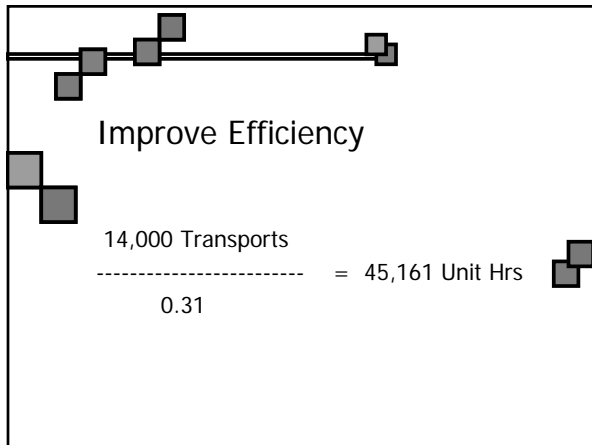
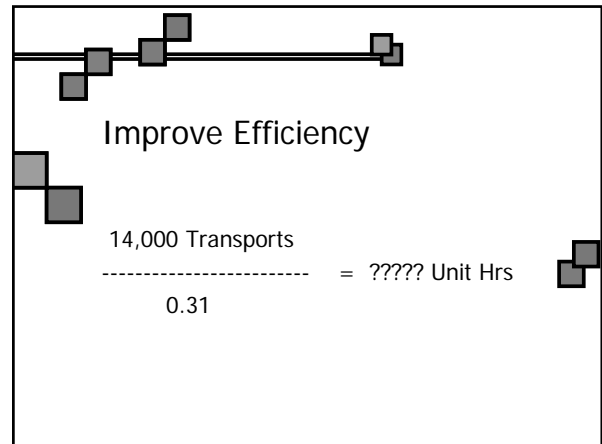
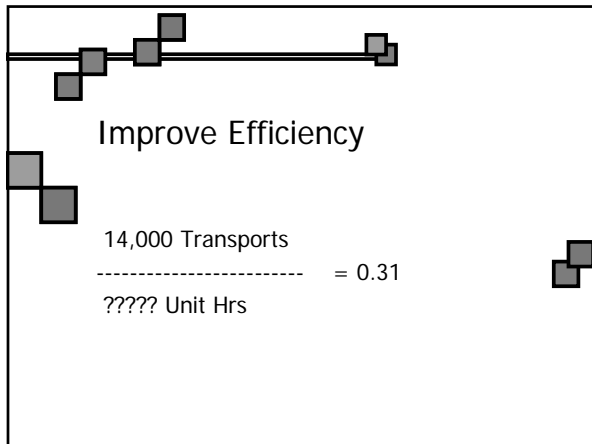
- The number of transports (revenue generating services) per staffed hour
- Calculated by dividing the number of transports by the number of staffed unit hours

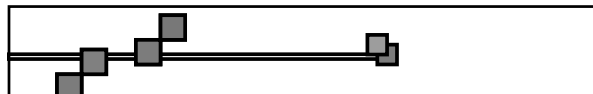
Transports per Unit Hour

Total # of Transports	=	14,000
Total Unit Hours	=	54,229
= 0.26 Transports / Unit Hour		

Improve Efficiency

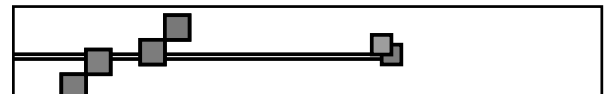
- What if you could increase transports per unit hour to 0.31?





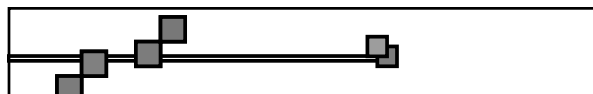
Utilization

- Percent of Unit-Hours consumed by work
- Includes responses with no transport



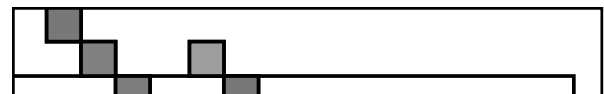
Unit Hour Summary

- Productivity defines how much is produced (transports) for a given resource commitment (unit-hours)
- Utilization defines how many resources (unit-hours) are consumed to produce the product (transports)

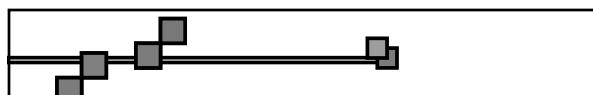
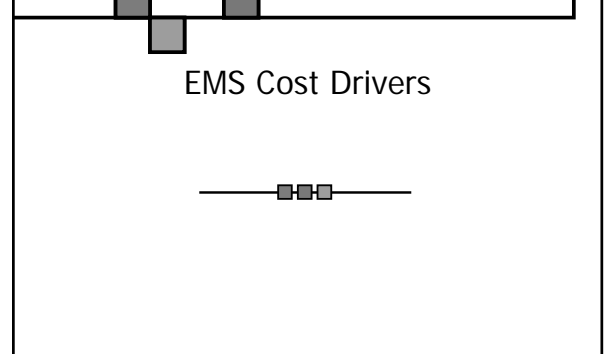


Efficiency Opportunities

- Match Staffing with Demand
- Flexible Deployment Strategies
- Reduce Time-on-Task
- Improve Scheduling of Non-emergencies
- Others?

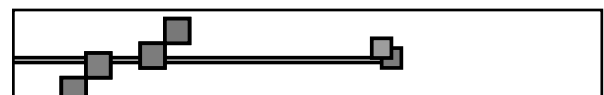


EMS Cost Drivers



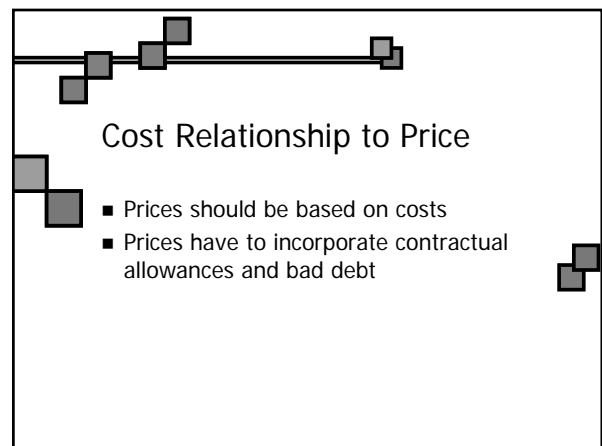
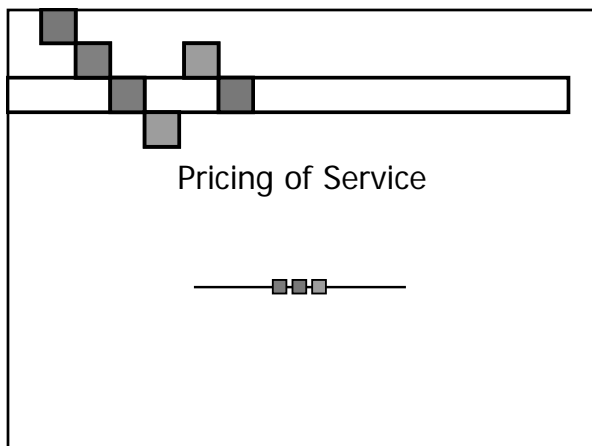
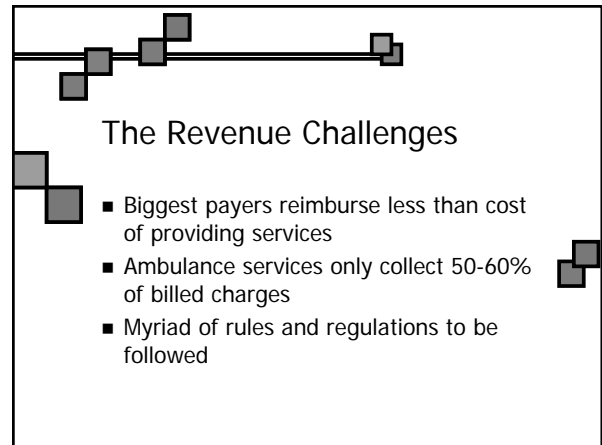
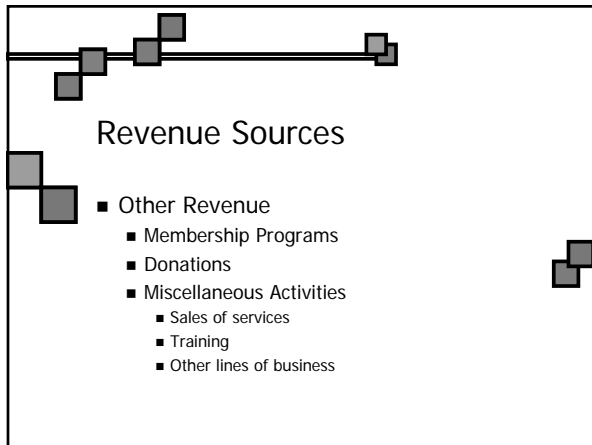
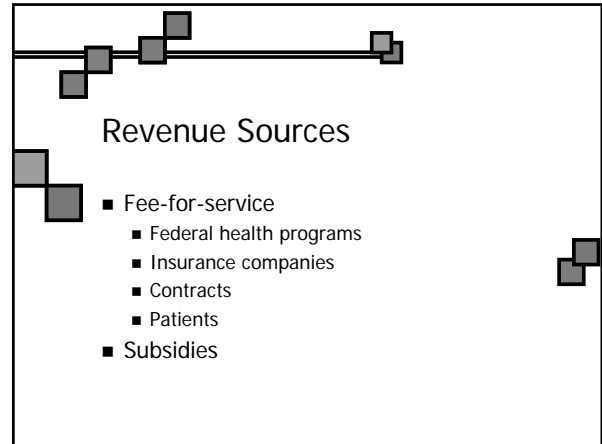
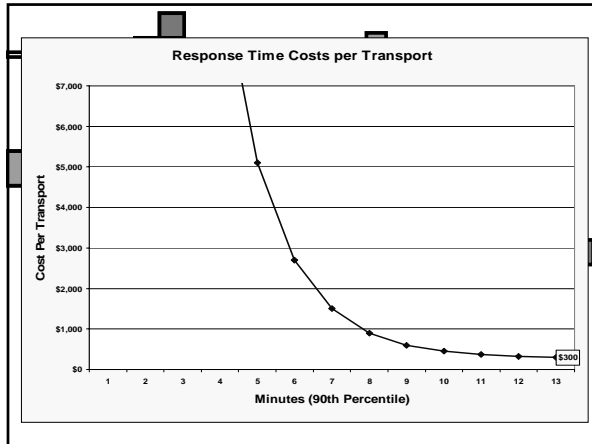
Cost Drivers

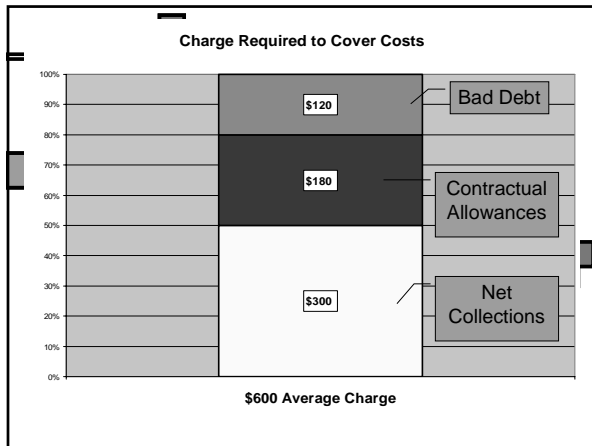
- Response Time
- Call Volume
- Unit Hour Costs



Response Time

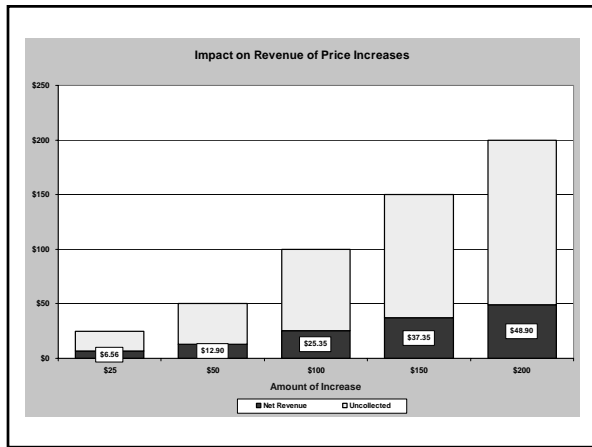
- The most costly product in EMS is the delivery of response time performance
- Units have to be staffed in order to respond quickly—even if no calls occur
- The "Cost of readiness"





Impact of Price Increases

- Diminishing returns as prices increase
- Increased charges do not equate to increased payments for all payers
- Fee schedule payers
 - UCR payers
 - Medicare
 - Medicaid



Subsidies

- Subsidies provided by municipal government
- Subsidies provided to public providers
- Subsidies provided to hospital providers
- Direct and Indirect

