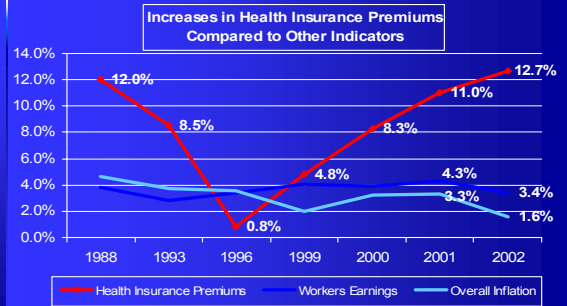


Documentation of the Quality & Value of Healthcare Services

Gary Wilkerson, EdD, ATC

Health Insurance Premiums



2005 Situation

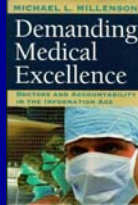
- 99% of employers are "significantly or critically" concerned about health care costs.
- Only 18% of employers have confidence they can manage increases in health costs.
- The solution chosen by most employers is to "pass on cost" or reduce/eliminate coverage.

Who decides which healthcare services to purchase?

- **Government Agencies**
 - Federal Government (CMS - Medicare)
 - State Government (Medicaid)
- **Insurance Companies**
 - Entities that finance a major portion of future medical costs according to contract terms containing limitations & exclusions
- **Self-Insured Employers**
 - Companies that pay the major portion of medical costs for employees (and dependents) through a third-party administrator

Control of Healthcare Costs (Millenson, 1997)

- Pay Less
 - Discounted provider fees
 - Cost-shift to employees
- Do Less
 - Utilization management
 - Coverage limitations & exclusions
- Do Things Better
 - Workforce health management
 - Value-based purchasing



Quality of Medical Care


- If all practitioners are equally competent:
 - Medical care represents a commodity
 - Services purchased only on basis of price
- Can medical care quality be measured?
- What are the factors that influence quality?

Donabedian Conceptual Model of Medical Quality

- Structure
 - facilities, equipment, & human resources
- Process
 - means by which care is delivered
- Outcome
 - effects of care on health

Donabedian: JAMA, 1988

Quality of Medical Services & Health Plans

- **Foundation for Accountability (FACCT)**
 - Robert Wood Johnson Foundation
 - Markle Foundation
- **Joint Commission on Accreditation of Healthcare Organizations (JCAHO)**
 - Quality Check
- **National Committee for Quality Assurance (NCQA)**
 - Health Plan Employer Data & Information Set (HEDIS)
 - Robert Wood Johnson Foundation
- **Agency for Healthcare Research & Quality (AHRQ)**
 - Consumer Assessment of Health Plans (CAHPS)
 - www.guideline.gov

Self-Insured Employers

- Institute for Health & Productivity Management (IHPM)



- National Business Coalition on Health



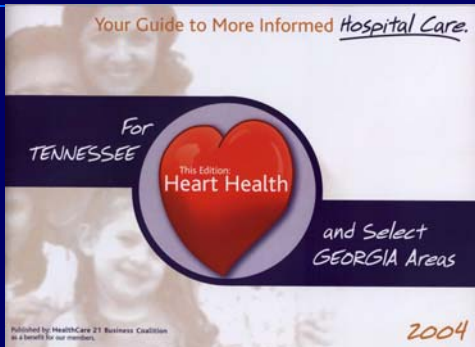
- Leapfrog Group



- Coalition of healthcare purchasers
 - Over 170 corporations & organizations
- Dysfunction of the healthcare marketplace
 - No way to assess quality or compare providers
 - Funding from Robert Wood Johnson Foundation and Business Roundtable
- Purpose:
 - Improve the quality & affordability of healthcare
 - Reward doctors & hospitals for quality
 - Encourage public reporting of healthcare quality



HealthCare 21: Coalition of over 100 employers in Knoxville, Nashville, Chattanooga, & North Georgia



Legend	Hospital/Region	C.P.O.E.	ICU Staffing	Leapfrog Quality Index
<ul style="list-style-type: none"> Fully implemented Leapfrog's recommended safety practice Good progress in implementing Leapfrog's recommended safety practice Good early stage effort in implementing Leapfrog's recommended safety practice Willing to report publicly; did not yet meet Leapfrog's criteria for a good early stage effort Hospital declined to share this information 	Chattanooga/Cleveland			
	Bradley Memorial Hospital			
	Cleveland Community Hospital			
	Erlanger East Hospital		N/A	
	Erlanger Medical Center			
	Erlanger North Hospital			
	Grandview Medical Center			
	Memorial Hospital			
	Memorial North Park			
	Parkridge East Hospital			
	Parkridge Medical Center			

Improving Health Care: A Dose of Competition

- Report of the Federal Trade Commission & Department of Justice – July 2004
 - An **extensive regulatory framework**, developed over decades at both the federal and state levels of government, affects **where and how competition takes place** in health care markets.
 - At present, most **payments** to providers have **no connection with the quality of care** provided.

Improving Health Care: A Dose of Competition

- Report of the Federal Trade Commission & Department of Justice – July 2004
 - **Private payors** have copied the payment strategies of the **Medicare** program.
 - Vigorous competition promotes the delivery of **high quality, cost-effective health care**, and **vigorous antitrust enforcement** helps protect competition.

Improving Health Care: A Dose of Competition

- Report of the Federal Trade Commission & Department of Justice – July 2004
 - **Tens of billions of dollars** are spent annually on services whose **value is questionable** or non-existent.
 - Private payors, governments, and providers should furnish **more information on prices and quality** to consumers in ways that they find useful and relevant.
 - **States should decrease barriers to entry** into provider markets.

PricewaterhouseCooper's Health Research Institute

- November 2004 Report:
President Bush's Second Term:
Prescribing Private Solutions for the Nation's Healthcare Problems
 - **Providers may have to compete directly** with each other on **price and quality**.
 - Providers that have **package pricing** or **measurable quality** could win more business.

Medical Treatment Guidelines

McGlynn et al: The quality of health care delivered to adults in the United States. *N Eng J Med* 348:2635-2645, 2003

- Review of medical records for 6,712 people in 12 cities
- 439 indicators of quality of care for 30 conditions
- 55% of cases reviewed received recommended care

"The deficits we have identified in adherence to recommended processes for basic care pose serious threats to the health of the American public."

Athletic Training & EBM

- Relatively few studies have addressed:
 - Accuracy of clinical tests for injury evaluation
 - Power of exam findings for prediction of outcome
 - **Effectiveness** of therapeutic, rehabilitative, & preventive procedures

Competition: Service Differentiation

- Conventional Rehabilitation
 - focus on physical impairments
 - rehab patient = passive recipient
 - frequency/duration of visits scheduled
 - emphasis on **"structure"** & **"process"**
- Functional Rehabilitation
 - derived from sports medicine model
 - rehab patient = active participant
 - progression determined by capabilities
 - emphasis on **"outcome"**

Quantification of Change in Functional Capabilities

- The association between physical impairments and functional capabilities is very weak!
 - The patient is the best judge of change in functional status
 - Patient self-report is the only mechanism available for acquisition of meaningful data

Influence of Orthopaedic Clinical Specialist Certification on Clinical Outcomes

- Hart & Dobrzykowski: JOSPT, 2000
 - 1996 FOTO data set (N = 28,895)
 - SF-12
 - 129 cases treated by PTs with OCS certification
 - 129 comparison cases randomly selected
 - treated by 60 clinicians w/o OCS (PTs, OTs, PTAs)
 - chi square tests used to confirm homogeneity of groups
 - Injury Severity - Depression
 - Age - Reason for Discharge
 - Impairment Category - Employment Status

Standardized Response Mean

- Comparison of improvement between different clinical populations
 - SRM** = $\text{post mean} - \text{pre mean} / \text{std dev of change scores}$
- Representation of improvement magnitude in standard deviation units (effect size)
 - Basis for quantitative comparison of results from studies that used different methods (meta-analysis)

Hart & Dobrzykowski: JOSPT, 2000

STANDARDIZED RESPONSE MEANS

VARIABLE	w/o OCS SRM	OCS SRM
PHYSICAL FUNCTIONING	0.58	0.77
ROLE LIMITATIONS - PHYSICAL	0.53	0.68

BIO*Analysis Systems PTOA/ATO instrument

- Status ratings pre- & post-treatment
 - 0 = critical problem
 - 1 = severe problem
 - 2 = moderate problem
 - 3 = minor problem
 - 4 = no problem

The image shows a sample PTOA/ATO instrument form. It includes a header with the instrument name and a grid for recording status ratings (0-4) for pre- and post-treatment. The grid has columns for 'Pre-treatment' and 'Post-treatment' and rows for various assessment items. The items include: '01. Pain (worst 24 hours)', '02. Pain (average 24 hours)', '03. Pain (worst 7 days)', '04. Pain (average 7 days)', '05. Pain (worst 30 days)', '06. Pain (average 30 days)', '07. Pain (worst 90 days)', '08. Pain (average 90 days)', '09. Pain (worst 180 days)', '10. Pain (average 180 days)', '11. Pain (worst 360 days)', '12. Pain (average 360 days)', '13. Pain (worst 720 days)', '14. Pain (average 720 days)', '15. Pain (worst 1440 days)', '16. Pain (average 1440 days)', '17. Pain (worst 2880 days)', '18. Pain (average 2880 days)', '19. Pain (worst 5760 days)', '20. Pain (average 5760 days)', '21. Pain (worst 11520 days)', '22. Pain (average 11520 days)', '23. Pain (worst 23040 days)', '24. Pain (average 23040 days)', '25. Pain (worst 46080 days)', '26. Pain (average 46080 days)', '27. Pain (worst 92160 days)', '28. Pain (average 92160 days)', '29. Pain (worst 184320 days)', '30. Pain (average 184320 days)', '31. Pain (worst 368640 days)', '32. Pain (average 368640 days)', '33. Pain (worst 737280 days)', '34. Pain (average 737280 days)', '35. Pain (worst 1474560 days)', '36. Pain (average 1474560 days)', '37. Pain (worst 2949120 days)', '38. Pain (average 2949120 days)', '39. Pain (worst 5898240 days)', '40. Pain (average 5898240 days)', '41. Pain (worst 11796480 days)', '42. Pain (average 11796480 days)', '43. Pain (worst 23592960 days)', '44. Pain (average 23592960 days)', '45. Pain (worst 47185920 days)', '46. Pain (average 47185920 days)', '47. Pain (worst 94371840 days)', '48. Pain (average 94371840 days)', '49. Pain (worst 188743680 days)', '50. Pain (average 188743680 days)', '51. Pain (worst 377487360 days)', '52. Pain (average 377487360 days)', '53. 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Pain (average 490006608366151387387259418209071807856640 days)', '273. Pain (worst 980013216732302774774518836418143615713280 days)', '274. Pain (average 980013216732302774774518836418143615713280 days)', '275. Pain (worst 1960026433464605549549037672836287231426560 days)', '276. Pain (average 1960026433464605549549037672836287231426560 days)', '277. Pain (worst 3920052866929211099098075345672574462853120 days)', '278. Pain (average 3920052866929211099098075345672574462853120 days)', '279. Pain (worst 7840105733858422198196150691345148925706240 days)', '280. Pain (average 7840105733858422198196150691345148925706240 days)', '281. Pain (worst 15680211467716844396392301382690297851412480 days)', '282. Pain (average 15680211467716844396392301382690297851412480 days)', '283. Pain (worst 31360422935433688792784602765380595702824960 days)', '284. Pain (average 31360422935433688792784602765380595702824960 days)', '285. Pain (worst 62720845870867377585569205530761191405649920 days)', '286. Pain (average 62720845870867377585569205530761191405649920 days)', '287. Pain (worst 125441691741734755171138411061522382811299840 days)', '288. Pain (average 125441691741734755171138411061522382811299840 days)', '289. Pain (worst 250883383483469510342276822123044765622599680 days)', '290. Pain (average 250883383483469510342276822123044765622599680 days)', '291. Pain (worst 501766766966939020684553644246089531245199360 days)', '292. Pain (average 501766766966939020684553644246089531245199360 days)', '293. Pain (worst 1003533533933878041369107288492179062490398720 days)', '294. Pain (average 1003533533933878041369107288492179062490398720 days)', '295. Pain (worst 2007067067867756082738214576984358124980797440 days)', '296. Pain (average 2007067067867756082738214576984358124980797440 days)', '297. Pain (worst 4014134135735512165476429153968716249961594880 days)', '298. Pain (average 4014134135735512165476429153968716249961594880 days)', '299. Pain (worst 8028268271471024330952858307937432499923189760 days)', '300. Pain (average 8028268271471024330952858307937432499923189760 days)', '301. Pain (worst 16056536542942048661905716615874864999846391520 days)', '302. Pain (average 16056536542942048661905716615874864999846391520 days)', '303. Pain (worst 32113073085884097323811433231749729999692783040 days)', '304. Pain (average 32113073085884097323811433231749729999692783040 days)', '305. Pain (worst 64226146171768194647622866463499459999385566080 days)', '306. Pain (average 64226146171768194647622866463499459999385566080 days)', '307. Pain (worst 128452292343536389295245732926998919998771132160 days)', '308. Pain (average 128452292343536389295245732926998919998771132160 days)', '309. Pain (worst 256904584687072778590491465853997839997542264320 days)', '310. Pain (average 256904584687072778590491465853997839997542264320 days)', '311. Pain (worst 513809169374145557180982931707995679995084528640 days)', '312. Pain (average 513809169374145557180982931707995679995084528640 days)', '313. Pain (worst 1027618338748291114361965863415991359990169057280 days)', '314. Pain (average 1

BioKinetics Outcomes Data N=956

	Pre-Treat	Post-Treat	Improve %
Daily Living	2.25	3.51	56%
Work-Related	1.89	3.27	74%
Sports/Rec	1.67	3.23	93%
ROM/Strength	2.07	3.48	68%
Pain/Swelling	1.82	3.32	82%

Relative Value

$$\text{Value} = \text{Quality} / \text{Cost}$$

$$\text{Value} = \text{Functional SRM} / \text{Cost} \times 1000$$

	BioKinetics N=956	PTOA N=749,577
FUNCTIONAL OUTCOME	1.65	1.35
AVG. CASE CHARGES	\$987	\$1078
FUNC/COST X 1000	1.67	1.25

Survey Psychometric Properties: Validity

- **Construct Validity**
 - Criterion-Related: established by comparison to a recognized gold standard
 - Content-Related: proper representation of the various contexts associated with the construct
 - Functional ability contexts:
 - Activities of Daily Living
 - Work-Related Activities
 - Sports-Related Activities
- **Responsiveness** (sensitivity to change in status)
 - **Standardized Response Mean**
 - Provides basis for comparison of different surveys

Goal: Improve Responsiveness of the ATOA Survey Instrument

Patient—Your responses to this questionnaire will help your athletic trainer and this clinic determine rehabilitation outcomes for specific medical conditions in response to specific treatments. This will help us optimize our treatment services to you and other patients. Your responses will be kept confidential, and will not affect your care in any way. Thanks for your assistance.

AT INTAKE					AT DISCHARGE				
0	1	2	3	4	0	1	2	3	4
—CRITICAL PROBLEM	—SEVERE PROBLEM	—MODERATE PROBLEM	—MINOR PROBLEM	—NO PROBLEM	—CRITICAL PROBLEM	—SEVERE PROBLEM	—MODERATE PROBLEM	—MINOR PROBLEM	—NO PROBLEM
0	1	2	3	4	0	1	2	3	4
0	1	2	3	4	0	1	2	3	4
0	1	2	3	4	0	1	2	3	4
0	1	2	3	4	0	1	2	3	4
0	1	2	3	4	0	1	2	3	4

Instructions: Please rate your current capacities specific to the injury for which you will receive, or have received, treatments. Please answer all questions as best you can, even if some of the questions seem somewhat irrelevant to you. Circle the appropriate response according to the (0 = 1 = 2 = 3 = 4) scale. 0 = critical problem, 1 = severe problem, 2 = moderate problem, 3 = minor problem, 4 = no problem.

General health—feel good, happy, energetic, active, relaxed, free of medication, free of pain/ discomfort, appetite, nutrition, body composition (body weight, obesity, anorexia) ...

Specific medical condition—status of injury, illness, surgery ...

Daily living activities—sleeping, sitting, standing, walking, climbing stairs, dressing, personal care, studying (reading, writing, typing/computer), traveling, driving, personal business affairs ...

Work activities—lifting/lowering, holding/handling, carrying, pushing/pulling, bending over, squatting/ stooping, kneeling, crawling, reaching, turning/pivoting, gripping/pinching, fingering ...

Sports/recreation/wellness activities—running, jumping, throwing, catching, kicking, swinging, withstanding impacts, weightlifting, specific sport/recreation/wellness activity ...

Goal: Improve Responsiveness of the ATOA Survey Instrument

DAILY LIVING ACTIVITIES – sleeping, sitting, standing, walking, climbing stairs, dressing, personal care, feeding yourself, traveling, driving, personal business affairs,...

CRITICAL WORST	Severe			Moderate			Mild		NO PAIN PROBLEM	
0	1	2	3	4	5	6	7	8	9	10
INCAPABLE				Extreme Limitation	Moderate Limitation	Mild Limitation				FULLY CAPABLE

WORK ACTIVITIES – lifting/lowering, holding/handling, carrying, pushing/pulling, bending over, squatting/stooping, kneeling, crawling, reaching, turning/pivoting, gripping/pinching, fingering, housekeeping, cooking, laundry, child-care, shopping, lawn/garden/shop activities, desk activities (writing, typing/computer),...

CRITICAL WORST	Severe			Moderate			Mild		NO PAIN PROBLEM	
0	1	2	3	4	5	6	7	8	9	10
INCAPABLE				Extreme Limitation	Moderate Limitation	Mild Limitation				FULLY CAPABLE

SPORT/WELLNESS/RECREATION ACTIVITIES – walking, running, jumping, swimming, aerobics, biking, throwing, catching, kicking, swinging, withstanding impacts, weightlifting, yoga, specific sport/wellness/recreation activities,...

CRITICAL WORST	Severe			Moderate			Mild		NO PAIN PROBLEM	
0	1	2	3	4	5	6	7	8	9	10
INCAPABLE				Extreme Limitation	Moderate Limitation	Mild Limitation				FULLY CAPABLE

Survey Responsiveness to Change in Functional Status

- 5-level vs. 11-level ATOA survey
- 17 physical therapy patients
- Pre-treatment and Post-treatment ratings

Standardized Response Means

Activities	5-level	11-level
Daily Living	1.10	1.22
Work-Related	1.29	1.38
Sports/Rec	1.31	1.51

Survey Responsiveness to Change in Functional Status

- SF-36 Physical Function Functioning Score
- ATOA 5-level & 11-level Functional Composite
 - 17 physical therapy patients
 - Pre-treatment and Post-treatment ratings

Standardized Response Means

SF-36 PF	ATOA 5-L	ATOA 11-L
1.12	1.35	1.45

Categories of Health/Function Survey Instruments

- Generic
 - **Permits comparisons** across diagnostic categories & demographic subgroups
- Disease/Condition-Specific or Population-Specific
 - **SPADI, Oswestry, KOOS, FADI**
- Patient-Specific
 - **Most responsive** (most sensitive to change)
 - **Not designed for between-group comparisons**

Overall Functional Ability vs. Specific Prioritized Ability

Rate your present overall ability to perform sports and fitness activities associated with your normal lifestyle:

INCAPABLE Extreme Limitation Moderate Limitation Mild Limitation FULLY CAPABLE
 0 1 2 3 4 5 6 7 8 9 10

SPORTS & FITNESS ACTIVITIES-Among the following abilities related to sports performance and fitness activities, select the one that you are most anxious to restore to your pre-injury level of function:

- | | | |
|---|-----------------------------------|--|
| <input type="checkbox"/> none are limited | <input type="checkbox"/> throwing | <input type="checkbox"/> weightlifting |
| <input type="checkbox"/> running | <input type="checkbox"/> biking | <input type="checkbox"/> dancing |
| <input type="checkbox"/> jumping | <input type="checkbox"/> catching | <input type="checkbox"/> other (specify) _____ |
| <input type="checkbox"/> swimming | <input type="checkbox"/> kicking | |

Rate your present ability to perform the specific sports or fitness activity that you selected:

INCAPABLE Extreme Limitation Moderate Limitation Mild Limitation FULLY CAPABLE
 0 1 2 3 4 5 6 7 8 9 10

Overall Functional Ability vs. Specific Prioritized Ability

Rate your present overall ability to perform work activities associated with your normal occupational and/or non-occupational roles:

INCAPABLE Extreme Limitation Moderate Limitation Mild Limitation FULLY CAPABLE
 0 1 2 3 4 5 6 7 8 9 10

WORK-RELATED ACTIVITIES-Among the following abilities related to work (occupational and/or non-occupational), select the one that you are most anxious to restore to your pre-injury level of function:

- | | | |
|---|---|--|
| <input type="checkbox"/> none are limited | <input type="checkbox"/> lifting/lowering | <input type="checkbox"/> climbing/descending |
| <input type="checkbox"/> housekeeping | <input type="checkbox"/> carrying | <input type="checkbox"/> handling/gripping |
| <input type="checkbox"/> cooking | <input type="checkbox"/> pushing/pulling | <input type="checkbox"/> prolonged standing |
| <input type="checkbox"/> laundry | <input type="checkbox"/> bending over | <input type="checkbox"/> prolonged sitting |
| <input type="checkbox"/> child care | <input type="checkbox"/> squatting | <input type="checkbox"/> other (specify) _____ |
| <input type="checkbox"/> shopping | <input type="checkbox"/> kneeling | |
| <input type="checkbox"/> lawn care | <input type="checkbox"/> crawling | |
| <input type="checkbox"/> computer use | <input type="checkbox"/> reaching | |

Rate your present ability to perform the specific work-related activity that you selected:

INCAPABLE Extreme Limitation Moderate Limitation Mild Limitation FULLY CAPABLE
 0 1 2 3 4 5 6 7 8 9 10

Statistical Adjustment for Pre-Treatment Differences

INJURY/ILLNESS SEVERITY- Rate the overall severity of your present condition in terms of pain, swelling, joint instability, joint motion restrictions, loss of function, sensitivity, and/or muscle spasms:

NO PROBLEM Mild Moderate Severe INCAPACITATING
 0 1 2 3 4 5 6 7 8 9 10

PRE-INJURY/ILLNESS PHYSICAL ACTIVITY LEVEL - Rate the overall extent to which you regularly engaged in physically demanding sports, recreation, fitness, and/or work-related activities prior to injury/illness:

DISABLED/SEDENTARY Minimally Active Moderately Active Very Active FREQUENT INTENSE ACTIVITY
 0 1 2 3 4 5 6 7 8 9 10

Healthcare Finance Revolution: Value-Based Purchasing

- Standard survey instrument design for clinical assessment of change in status
- **Needed for development of evidence-based treatment protocols (clinical effectiveness)**
 - Health care finance is changing!
 - **P4P: Pay for Performance**
- **Needed to demonstrate service value**
 - Maximum responsiveness possible: **high SRM value**
 - Must collect **ICD-9 codes & case charges**
 - Need for electronic data warehouse