

The Future of Health Care Finance and Its Implications for Athletic Trainers

Gary Wilkerson, EdD, ATC
University of Tennessee at Chattanooga

Georgia Athletic Trainers' Association
Annual Meeting – Atlanta, GA

January 14, 2005



A Brief History of Health Care Finance in the U.S.

- World War II
 - 16 million men in military service
 - Manpower needed in defense industries
 - Production efficiency adversely affected by higher-pay bidding to change employment
 - Wages capped by law
 - Employers began offering medical insurance as a fringe benefit inducement

History of Health Care in U.S

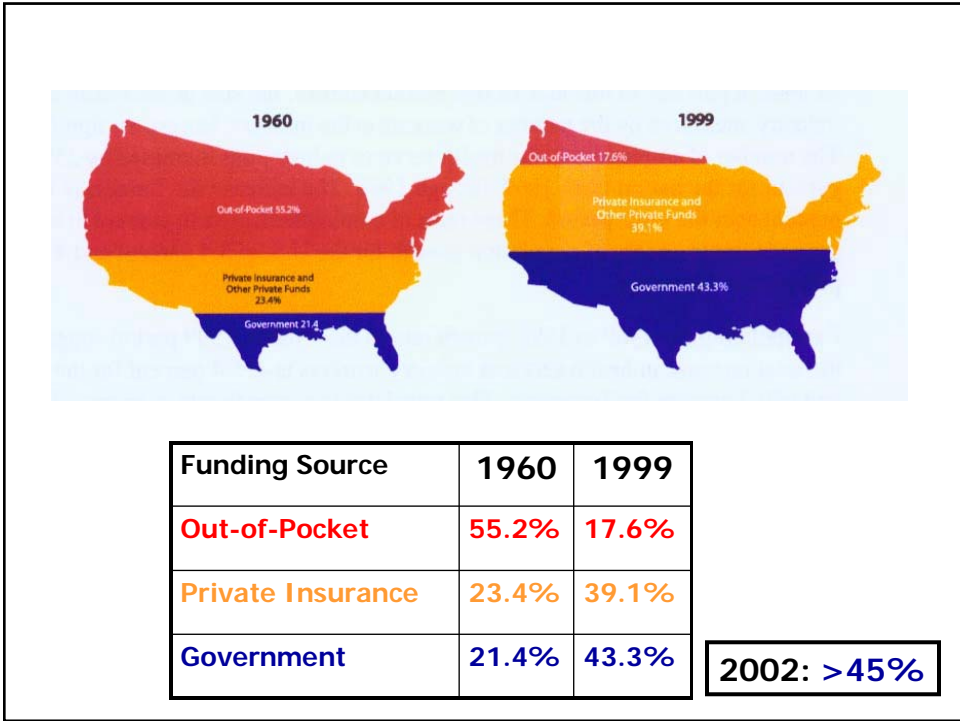
- Federal government began subsidizing employment-based health insurance through the tax code:
 - Employer contributions to health insurance coverage tax-deductible
 - Monetary value of health insurance benefit not considered taxable income for employees

3

Evolution of American Health Care in the 20th Century

- Era of Expansion
 - End of WWII to late 1960's
 - 100% fee for service reimbursement
 - Expanding role of government financing of medical services for poor & elderly
 - 1960's
 - 90% of population covered by private or public health insurance
 - No limits on Medicare/Medicaid reimbursement

4



History of Health Care Finance

- 1965-69: 76% increase in net income of nonprofit hospitals
- 1965-70: Federal share of national health expenditures increased 25%
- 1973: Health Maintenance Organization Act
 - Provided start-up funds for development of HMOs
 - Required large companies to offer an HMO choice
- 1974: Employee Retirement Income Security Act (ERISA)
 - Self-insured employers allowed to design health plans

6

Evolution of American Health Care in the 20th Century

- Era of Cost Containment: 1970's to 1990's
 - Legislative initiatives to limit Medicaid expenditures
 - Inpatient Prospective Payment System (1983)
 - Established fixed payments based on discharge diagnosis (DRG: diagnosis-related group)
 - Hospitals raised charges to privately insured patients
 - Outpatient Prospective Payment System (2000)
 - Established fixed payments based on 750 case classifications (APC: ambulatory payment classification)
 - Employer health benefits costs equal to half of pretax profits
 - Growth of managed care in private sector

7

Managed Care

- Integration of financing & delivery of a comprehensive set of health care services
- A pre-planned system for delivery of coordinated health care services at lower cost than traditional indemnity plans
 - In-network" incentive & out-of-network disincentive
 - Negotiation of physician/hospital fee discounts
 - Preauthorization of medical services
 - Gatekeeper physician requirement (POS plans)

8

Developing Trends

- Increasing U.S. spending on health care
 - 2000: \$1.3 trillion - \$4,637 per person
 - 2002: \$1.6 trillion - \$5,440 per person
 - 14.9% of GDP

9

Demographic Trends

- U.S. population:
 - 1950: 150 million - 2000: 281 million
 - Number <18 yrs old decreased 31% to 26%
 - Number >65 yrs old now >20%
 - By 2008, median age of work force will be 41 yrs
 - Life expectancy 77 yrs in 2001 (increasing)

10

Developing Trends

- Increasing employer involvement in employee health management
 - Increasing costs cannot be recovered through product price increases
- Premiums for a fully-insured health plan
 - 11.2% increase in 2004
 - Average salary increase in 2004: 2.2%
 - 2004 inflation rate: 2.3%
- Premiums cost 13.5% more than the cost of medical services provided for employees

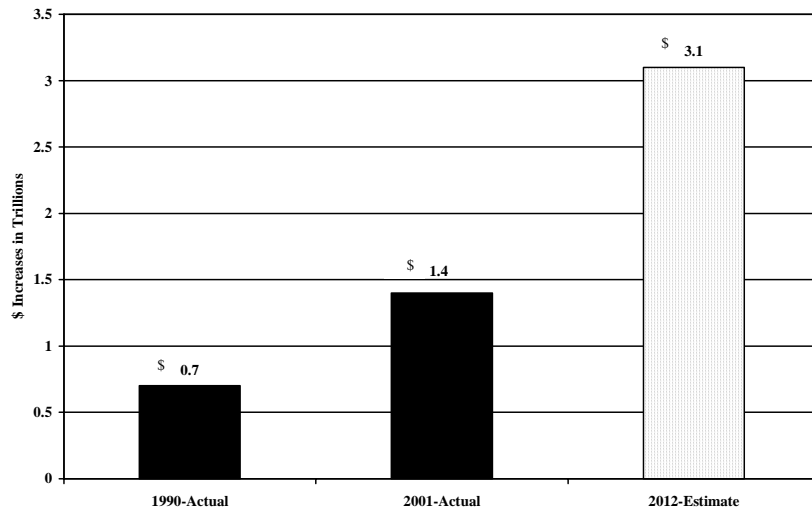
11

Evolution of American Health Care in the 20th Century

- Era of Assessment and Accountability
 - Late 1990's to present
 - Documentation of effectiveness & value
 - Problems facing employers:
 - Rising health care costs
 - Rising workers' compensation costs
 - Rising disability-related costs
 - Aging of the American workforce
 - International market competition
 - Decreasing profit margin

12

CMS Forecast: Total Medical Expenditures



* Assumes 7.3% annual increase

Projected Health Insurance Cost Increase: 2002-2005

Type Coverage	2002 Premium	2003* Premium	2004* Premium	2005* Premium	2002-2005* Increase
PPO (family)	\$ 8,173	\$ 9,399	\$ 10,997	\$ 12,866	\$4,693
(single)	\$ 3,175	\$ 3,651	\$ 4,272	\$ 4,998	\$1,823
2002: 50%					
HMO (family)	\$ 7,541	\$ 8,657	\$ 10,146	\$ 11,871	\$4,330
(single)	\$ 2,764	\$ 3,179	\$ 3,683	\$ 4,309	\$1,545
2002: 29%					
Indemnity (family)	\$ 8,479	\$ 9,750	\$ 11,407	\$ 13,347	\$4,868
(single)	\$ 3,582	\$ 4,119	\$ 4,819	\$ 5,638	\$2,056
2002: 7%					
% Increase	14.7%	15%*	17%*	17%*	57%*

* Source: Kaiser Family Foundation and Health Research and Education Trust

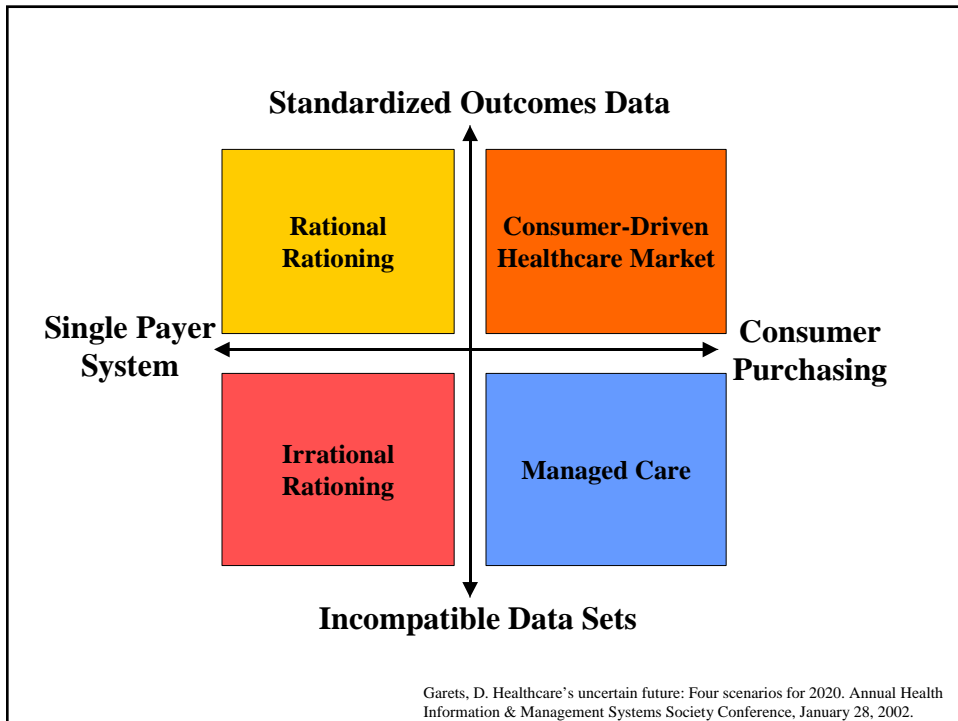
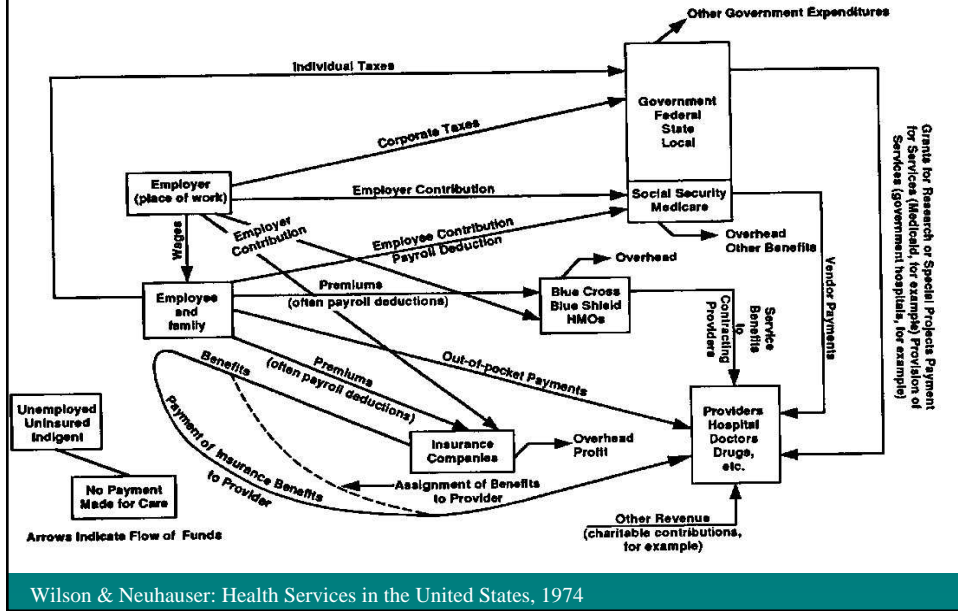
Health Insurance Premium Increase @ 7.3% per year

Type Coverage	2002	2012
PPO (family)	\$ 8,173	\$ 17,980
(single)	\$ 3,175	\$ 6,985
HMO (family)	\$ 7,541	\$ 16,590
(single)	\$ 2,764	\$ 6,080

2005 Health Care Scenario

- Americans **reluctant to accept responsibility** for health status
 - Overweight, high BP, high cholesterol, smoking
- Providers & insurers **resistant to change**
 - Escalating healthcare costs & insurance premiums
- Employers **unable to absorb increasing costs**
 - Cost-shifting to employees
 - Defined contribution
 - Increased deductibles & coinsurance
- Medicare program **cannot be sustained!**
 - 2002: ≈12% of Federal Govt revenue
 - 2030: >25% of Federal Govt revenue

Flow of Healthcare Dollars



Managed Care (Wild West)

- Payer focus on cost containment
 - Utilization restrictions & provider fee discounts
- Provider focus on cost-cutting & marketing
 - No financial incentive to provide preventative care
 - Marketing focused on creation of provider image
- Consumers/employers unable to make informed purchasing decisions (value?)
 - Consumer choice related to willingness to pay for uninsured healthcare services out-of-pocket

19

Irrational Rationing (Canadian Healthcare Hell)

- Covered vs. uncovered medical services not based on evidence of benefit derived
 - Lots of data, but no meaningful information
 - Cost-containment is pre-eminent concern
- Provider apathy, rampant inefficiency, & minimal consumer influence on service delivery
 - Low provider compensation for services
 - Bureaucratic administrative processes & high taxes
 - Long delays in delivery of some services (surgery)

20

Rational Rationing (Socialist Utopia)

- Paternalistic system
 - Outcomes data used to allocate finite financial resources
 - Optimizes health benefit for every individual
 - Society consensus that healthcare represents a basic human right
 - Willingness to surrender individual choice as a means to ensure equality of access to services

21

Consumer-Driven Market (Capitalistic Healthcare)

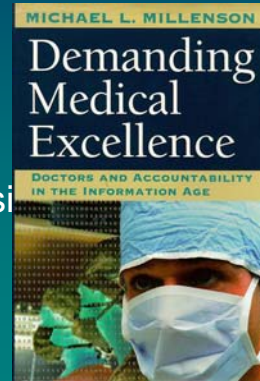
- Consumers & employers empowered to make informed healthcare purchasing decisions
- Greater proportion of financial resources paid directly to providers, rather than being allocated to health insurance premiums
- Individuals financially liable for poor health habits
- Providers compete on the basis of service excellence (outcomes benchmarking)



22

Control of Health Care Costs (Millenson: 1997)

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



23

Managed Care vs. Managed Health

MANAGING SUPPLY
OF MEDICAL CARE

MANAGING DEMAND
FOR MEDICAL CARE

Managed
Care

Managed
Health

- Negotiated discounts
- Case rates
- Pharmacy formularies
- Inpatient length of stay
- Capitation
- Coverage exclusions
- Network restrictions
- Preauthorization

- Health Education
- Behavior Modification
- Self-care
- Medical Consumerism
- Injury/Illness Prevention
- Early Detection & Treatment
- Worksite Fitness/Rehab
- Transitional Work

Health-Related Financial Loss

- Increased insurance premiums
(or direct medical costs for self-insured)
 - Preventable chronic diseases
 - Preventable musculoskeletal conditions
- Lost work productivity
 - Work absence
 - Impaired job performance
- Workers' compensation claims
- Disability insurance claims
- Early mortality

25

Interrelationships

- Increasing research evidence linking health status to:
 - Annual medical expenditures
 - Work absence
 - Disability claims
 - Productivity at work

26

The relationship between modifiable health risks and health care expenditures.

■ Goetzel RZ et al: J Occup Environ Med, 1998

- 46,026 employees of 6 employers (ages 18-64)
 - ❖ Followed for up to 3 years (113,963 person-years)

- Medical expenditures per person-year (statistically adjusted)

Gender	Race
Age	Job Category
Education	Employer

- High-risk classifications:

Sedentary Lifestyle	Depression
Excessive Alcohol Use	Extreme High/Low Body Wt
Poor Nutritional Habits	High Total Cholesterol
Tobacco User	High Blood Pressure
High Stress	High Blood Glucose Level

27

Goetzel et al, 1998: Results

■ CHD High-Risk Average: **\$3,803**

- poor nutritional habits
- smoker
- sedentary
- high BP
- high cholesterol
- high stress

■ Risk-Free Average: **\$1,166**

■ High-Risk **>3X** more expensive

28

Total Health-Related Costs

Geotzel et al: JOEM, 2001

Health & Productivity Management: Establishing Key Performance Measures, Benchmarks, and Best Practices.

- Best-practice organizations:
3M, Applied Materials, Chevron, Coors Brewing, GE, Navistar Int., Steelcase, Texas Instruments, Union Pacific Railroad
- Comparison group:
43 employers (950,000 workers: 52% hourly, 48% salaried)
- Cost categories:
 - Group health
 - Turnover
 - Unscheduled absence
 - Non-occupational disability
 - Workers' compensation
- Median annual cost per employee: \$9992
- Potential annual cost savings per employee: \$2562

29

Health & Productivity Management

The *integrated management* of health and injury risks, chronic illness, and disability to reduce employees' total health-related costs, including medical expenditures, unnecessary absence from work, and lost performance at work.

(Institute for Health & Productivity Management, 1999)

30

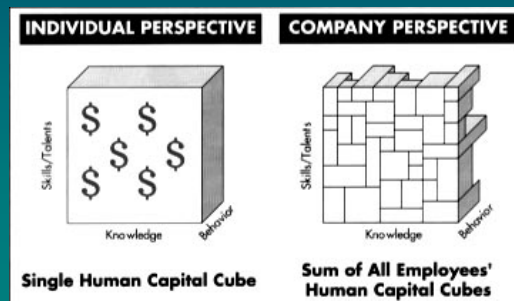
Health & Productivity Management

- A business strategy aimed at improving the total value of human resource investments
 - **Medical**
 - ❖ back injury, CHD, asthma, diabetes
 - **Psychological**
 - ❖ anxiety, depression, insomnia, fatigue
 - **Behavioral**
 - ❖ substance abuse, smoking, accidents
 - **Organizational**
 - ❖ work absence, morale, labor relations

31

Health & Productivity Management

- **Human Capital**
 - The sum of individual worker performance capabilities:
 - ❖ Skills/Talents
 - ❖ Knowledge
 - ❖ Behavior



32

HPM Program Categories

- Health Promotion (Fitness/Wellness)
- Demand Management
- Disease Management
- Disability Management
- Productivity Management

33

Health Promotion (Fitness/Wellness)

- Enhancement & maintenance of health through **emphasis on a healthy lifestyle**.
 - worksite exercise facilities/programs
 - health risk appraisals
 - disease screening
 - health education
 - individualized lifestyle counseling
 - targeted behavior modification efforts
 - ❖ e.g., weight loss, smoking cessation

34

Health Promotion ROI

Study	Focus	Dependent Variable	Benefit/Cost ROI
Osminkowski et al, 1999 (Citibank N.A.)	Fitness + HRA Education Self-Care Material*	Total Health Care Costs	6.47*
Goetzel et al, 1998 (Proctor & Gamble)	Fitness + HRA Education Disease Screening	Hospital Inpatient Costs	1.49
MEDSTAT Group, 1997 (Pacific Bell)	Fitness + HRA Disease Screening Health Info Service	Health Care Costs (minus drug costs)	1.73
Fries et al, 1994 (State of CA Retirees)	Fitness + HRA Correspondence Self-Care Material*	Total Health Care Costs	5.97*
Fries et al, 1993 (Bank of America)	Fitness + HRA Correspondence Self-Care Material*	Total Health Care Costs	5.47*
Aldana et al, 1993 (City of Mesa, AZ)	Fitness + HRA Disease Screening Education	Total Health Care Costs	3.60
Breslow et al, 1990 Bly et al, 1986 (Johnson & Johnson)	Fitness + HRA Disease Screening Education	Hospital Inpatient Costs	1.70

Demand Management

- The use of decision support and self-mgmt support to enable and encourage individuals to make **appropriate use of medical care**.
 - Health risk appraisal
 - Info about illness symptoms & treatment options
 - General self-care education
 - ❖ Books
 - ❖ Newsletters
 - ❖ Seminars
 - ❖ Websites

Demand Management

■ Self-Care + Medical Consumerism

- Symptom identification & interpretation
- Administration of self-care options
- Optimal utilization of the healthcare system

- ❖ 85% will experience at least one symptom each month
- ❖ Most are practicing some self-care with limited information
- ❖ A significant portion of utilization is for self-limiting conditions

37

Demand Management ROI

Study	Focus	Dependent Variable	Benefit/Cost ROI
Fries et al, 1997	Arthritis Self-Care	Outpatient Medical Costs	2.70 – 10.70
Lorig et al, 1993	Arthritis Self-Care	Outpatient Medical Costs	4.50
Vickery et al, 1988	General Self-Care	Total Health Care Costs	2.19
Lorig et al, 1985	General Self-Care	Outpatient Medical Costs	9.20
Vickery et al, 1983	General Self-Care	Outpatient Medical Costs	3.50

Disease Management

- A system of coordinated health care interventions and communications for populations with conditions in which patient self-care efforts are significant (Disease Mgmt Assoc of America).
 - Disease screening
 - Disease-specific self-care education
 - Coordination of medical services (case management)
 - Health behavior modification counseling
 - Surveillance of physiologic indicators of disease status
 - Provision of evidence-based treatment guidelines
 - Physician or nurse consultation through telephone or email
 - Regular reminders of the importance of compliance with a prescribed treatment plan

39

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.”

40

Medical Treatment Guidelines

- Integrated Benefits Institute & Medstat; 2004:

Employees and employers gamble health and productivity when they ignore scientific guidelines for medical treatment.

- 6 employers – 425,000 employees
- National Guideline Clearinghouse [www.guideline.gov]

- ❖ 37,000 cases of low-severity acute low back pain
 - Inappropriate care (29%) cost \$18.8 million in 1 year
 - **3.7 X more expensive than guideline-compliant care**

41

Disease Management ROI

Study	Focus	Dependent Variable	Benefit/Cost ROI
Sidorov et al, 2002	Diabetes	Total Health Care Costs	2.23
Barnwell, 1998	Diabetes	Total Health Care Costs	8.88
MEDSTAT Group, 1997	Mental Health	Mental Health Care Costs	10.38
Bolton et al, 1991	Asthma	Emergency Room Costs	7.33

Disability Management

- Programs & policies designed to reduce disability-related lost work time.
 - Injury prevention
 - Ergonomic analysis of job demands
 - Pre-placement physical capacity testing
 - Early injury intervention (worksite care)
 - Case management
 - Transitional return to work

43

“Integrated” Disability Management

- Employer-driven initiatives that do not make a distinction made between work-related & non-work-related conditions
 - Health Insurance
 - Disability Insurance (Short-Term, Long-Term)
 - Workers’ Compensation Insurance
- “Integration” of previously compartmentalized programs & departments
 - Risk Management
 - Human Resources
 - Benefits Administration
 - Safety
 - Occupational Health
 - Operations/Production

44

Disability Costs – Health Plan Costs CIGNA, 2004

- 60,000 STD claims & health plan costs
 - Same vs. different insurers (STD & health plan)
 - Integrating STD & health plan lowers total costs
 - ❖ 12% shorter disability duration with IDM
- 56% of STD costs related to 3 conditions
 - Low back dysfunction
 - Diabetes
 - Heart disease

45

Disability Costs – Health Plan Costs CIGNA, 2004

- “There is an inherent disconnect between the medical and disability management systems.”
 - Linking health plan, disability plan, disease management, and EAP drives down overall costs
- Musculoskeletal disorders
 - Primary driver of total benefits costs
 - ❖ 27% of STD costs
 - ❖ 18% of health plan costs

46

Productivity Management

- Productivity typically related to avoidance of work absence:
 - Absenteeism (Sick Days)
 - Short-Term & Long-Term Disability Days
 - Workers' Compensation Claims
- "Presenteeism"
 - The adverse effects of injury and illness on workers who are physically present for work (Burton, et al, 1999).

47

Worker Productivity Index

- Burton et al: J Occup Environ Med, 1999
 - 1) Time away from job due to illness (absenteeism)
 - 2) Time lost because of failure to maintain productivity standard (presenteeism)

Risk	Hours Lost	Worker Productivity Index
Current smokers	4.147	90%
Diabetes	11.364	72%
High blood pressure	5.068	87%
Cholesterol	6.128	85%
BMI at risk	5.79	86%

Adapted from "The Role of Health Risk Factors and Disease on Worker Productivity," *Journal of Occupational and Environmental Medicine*, Vol. 41, No. 10, October 1999, pp. 863-877, Burton, Wayne N., et al.

Impact of Musculoskeletal Disorders Queyrouze, 2003

- Federal Reserve Bank of Dallas
- 300 employees
 - Indirect costs 6X greater than direct costs

Musculoskeletal Disorder Costs per Employee (annually)	
DIRECT:	
Workers' Compensation	\$278.03
Medical Claims	85.40
Pharmacy Claims	60.43
	\$423.86
INDIRECT:	
Lost Time	\$84.01
STD	1.50
Absence	Not Available
Presenteeism	2,063.09
	\$2,148.60
Total Costs:	\$2,572.46

Dallas Ft. Worth Business Group on Health

49

Presenteeism

Stewart et al: JOEM, 2003

Lost Productive Work Time Costs From Health Conditions in the United States: Results From the American Productivity Audit

- Survey of 28,902 American workers
- Health-related lost productive time:
 - Estimated to cost \$1685/ee/yr
 - ❖ 26% attributable to work absence (absenteeism)
 - ❖ 71% attributable to reduced performance at work (presenteeism)

50

Wright et al: JOEM, 2002

Association of Health Risks With the Cost of Time Away From Work

- 3-year study of 6,220 hourly workers at Steelcase, Inc.
- Categories of time away from work:
 - Sick days - irregular work absence (32%)
 - Short-term disability (23%)
 - Workers' compensation (45%)

51

Wright et al: Time Away From Work (TAW)

- High-risk employees (self-report HRA survey):
 - 60% greater TAW costs than low-risk employees
- High-risk health status affects TAW costs more than direct medical treatment costs
- Reduction of health risk could provide 32- 36% TAW savings

52

Total Health-Related Costs

Stave et al: JOEM, 2003

Quantifiable Impact of the Contract for Health and Wellness: Health Behaviors, Health Care Costs, and Workers' Compensation

- Population: 6049 GlaxoSmithKline employees
- Cost categories:
 - Health care (medical + prescription drugs + mental health)
 - Disability (STD + LTD)
 - Workers' compensation (medical + indemnity + legal costs)
- Comparison: health promotion program participants & non-participants
- Annual savings of \$613 per participant
 - Health promotion program cost approx. \$100 per participant
- 3-year average ROI >6:1

53

Productivity Management ROI

Study	Focus	Dependent Variable	Benefit/Cost ROI
Schultz et al, 2002	Fitness + HRA Nurse Counseling	Short-Term and Long-Term Disability Days @ \$200/day	2.30
Serxner et al, 2001	Fitness + HRA Worksite Rehabilitation Self-Care Material	Short-Term Disability Days @ \$225/day	\$675 Benefit per employee per yr (\$Cost not reported)
Liao et al, 2001 Meltzer et al, 1999	Non-Sedating Medication for Allergies	Worker Productivity and Activity Impairment Scale + Total Medical Costs for Treatment of Allergies	3.52

Health Risks: Medical + STD Costs

Edington & Musich: HPM, 2004

Associating Changes in Health Risk Levels with Changes in Medical & Short-Term Disability Costs

- 923 employees of Progressive Corporation
 - 1998-99 vs. 2000-01 Health Risk Appraisal status
 - Change in health risk status (high = ≥ 4 , low = ≤ 3)
 - ❖ High Risk – High Risk (15.4%)
 - ❖ High Risk – Low Risk (10.4%)
 - ❖ Low Risk – High Risk (10.2%)
 - ❖ Low Risk – Low Risk (64.0%)
- Cost analysis (inflation adjusted to 2001 dollars)
 - Medical costs (including pharmaceuticals)
 - Short-term disability costs

55

Edington & Musich, 2004

Cost Differences Associated With Changes in Health Risk Levels 1998-1999 to 2000-2001			
Risk-Change Groups	N	Difference	Total Difference
High risk to high risk Medical costs STD costs	142	+\$2,008** +209**	+\$2,217
High risk to low risk Medical costs STD costs	96	-\$832* +\$1†	-\$831
Low risk to high risk Medical costs STD costs	94	+\$985** +\$130‡	+\$1,115
Low risk to low risk Medical costs STD costs	591	+\$188** +\$32§	+\$220

*ANOVA (adjusted for age and gender; log transformation) with Tukey post-hoc testing: H-H>H-L, L-L, p<.001; H-L<L-H, p<.05.
 †ANOVA (adjusted for age and gender; log transformation) with Tukey post-hoc testing: H-H>H-L, L-L, p<.001.
 ‡Non-parametric sign rank test, p<.0001.
 § Non-parametric sign rank test, p<.05.

↑ 94%

↓ 35%

↑ 80%

↑ 20%

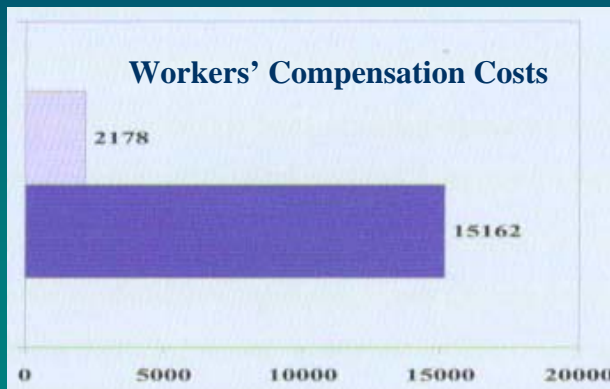
The Association of Health Risks with Workers' Compensation Costs

Musich et al: J Occup Environ Med 43(6):534-541, 2001

- U of Mich study - Xerox employees
 - High-risk employees 7X more expensive
 - 85% of WC costs potentially preventable

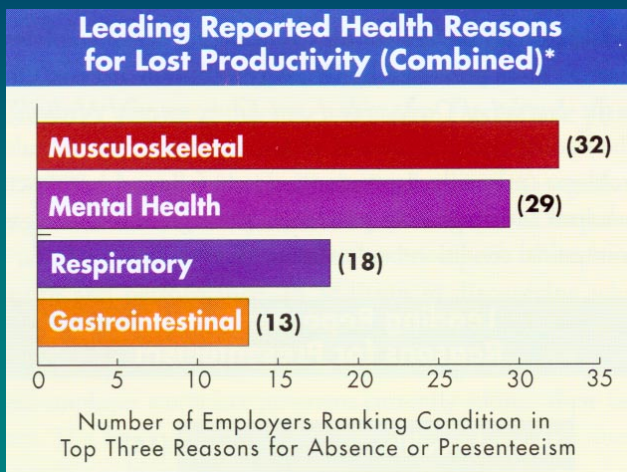
CHD Risk

- Low-Risk
 - ❖ 0-2 risk factors
- High-Risk
 - ❖ 5+ risk factors



Work Productivity Impairment

- Survey of 35 large corporations
 - Total of 1.2 million employees



Annual Impact of Musculoskeletal Disorders

- Affect 1 out of every 4 people each year
 - Most common reason for visits to MD
- Estimated cost of \$254 billion
 - \$1 of every \$10 spent for health care
- Most common cause of physical disability
 - 147 million work-loss days per year
 - >36 million Americans disabled due to MSDs

American Academy of Orthopaedic Surgeons: www.aaos.org 59

Paradigm Shift in Health Care

- Paradigm:
 - An accepted framework that governs practice within a field
 - context in which problems are addressed
 - strongly influenced by traditions & dogma
- Allopathic medicine:
 - System of medical practice, which aims to combat disease by the use of remedies that produce effects different from those produced by the disease treated

60

Allopathic Medicine Paradigm

- Focus on diagnosis & treatment of existing disease/injury for relief of symptoms
- Emphasis on complete restriction of activity during healing
- Heavy reliance on prescription of pharmaceuticals & surgical procedures
- Emphasis on the “process” by which care is provided

Sports Medicine Paradigm

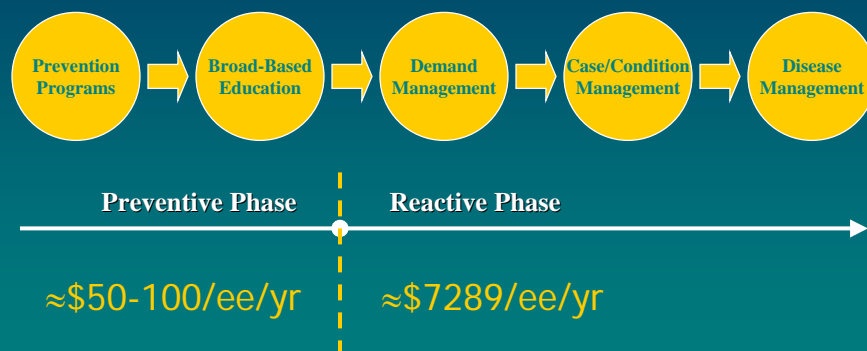
- Emphasis on injury prevention through enhancement of performance capabilities
- Emphasis on exercise for restoration of optimum performance
- Maintenance of protected function during healing
- Emphasis on the “functional outcome” of care

Contrasting Definitions of Health

- **Allopathic Medicine:**
 - Health = **The absence of disease.**
- **Sports Medicine:**
 - Health = **Optimized human function.**

63

Health Management Continuum



Broad Definition of Sports Medicine

The American College of Sports Medicine promotes and integrates scientific research, education, and practical applications of sports medicine and exercise science to maintain and enhance physical performance, fitness, health, and quality of life.

- Includes exercise physiology & health promotion
 - ❖ Prevention of chronic disease & early mortality

65

Physical Fitness and All-Cause Mortality: A Prospective Study of Healthy Men and Women

Blair et al: JAMA 262(17):2395-2401, 1989

- Maximal treadmill exercise test
 - 10,224 men & 3,120 women
 - ❖ High-Fit: top 40%
 - ❖ Moderate-Fit: middle 40%
 - ❖ Low-Fit: lowest 20%
- 1970-1981: 110,482 person-years – 283 deaths
- Age-adjusted death rates per 10,000 person-years
 - Low-Fit comparison to High-Fit
 - ❖ 8X more heart disease deaths in men (24.6 vs. 3.1)
 - ❖ 9X more heart disease deaths in women (7.4 vs. 0.8)
 - ❖ 4X more cancer deaths in men (20.3 vs. 4.7)
 - ❖ 16X more cancer deaths in women (16.3 vs. 1.0)

66

Musculoskeletal Example: Low Back Pain

- Second most common reason for visits to a physician's office
- Most common cause of activity limitation in persons ≤ 45 years of age
- Typical management:
 - Bed rest
 - Analgesics
 - Muscle relaxants

67

Scientific Application of Sports Medicine Principles for Acute Low Back Problems

Bigos & Davis: J Orthop Sports Phys Ther 24(4):192-207, 1996

- Sports medicine principles represent *a new paradigm* to many clinicians treating patients with back complaints.
 - Avoid debilitation induced by inactivity
 - ❖ Many believe rest is necessary to control symptoms
 - Restore (and maintain) tolerance for activity
 - ❖ Controlled progressive exercise relieves symptoms
 - ❖ Not achieved with rest, medication, manipulation, etc.

Sports Medicine Approach to Low Back Pain

Lively: South Med J 95(6): 642-646, 2002

- Contrary to traditional beliefs, bed rest is not an effective therapy for LBP and it often delays recovery
 - Coste et al: Br Med J, 1994
 - Bigos et al: AHCPR Publication No. 95-0642, 1994
 - Malmivaara et al: N Engl J Med, 1995
 - Von Korff et al: Ann Intern Med, 1994
 - Waddell et al: Br J Gen Pract, 1997

- Focus on return to function through early and progressive exercise associated with less disability and decreased pain
 - Indahl et al: Spine, 1995
 - Fordyce et al: Pain, 1981
 - Frost et al: Pain, 1998
 - Frost et al: Br Med J, 1995
 - Lindstrom et al: Spine, 1992
 - Lindstrom et al: Phys Ther, 1992
 - Mayer et al: JAMA, 1987

69

Sports Medicine Approach to Low Back Pain

Lively: South Med J 95(6): 642-646, 2002

- Controlled & progressive early exercise
- Modification of activity, rather than complete restriction of activity
- Avoidance of “disabled behavior”
- Progression based on goals, rather than symptoms

70

A Prospective Two-Year Study of Functional Restoration in Industrial Low Back Injury

Mayer: JAMA 258(13):1763-1767, 1987

- A multimodal disability management approach was utilized to assist in controlling stress associated with the discomfort of “**working through the pain**” inherent in the sports medicine program.
 - Chronic LBP patients
 - ❖ Treatment: 116 who completed a 3-week functional program
 - ❖ Comparison: 72 similar patients who did not participate
 - ❖ Dropout: 11 patients who discontinued program
 - 2-year Follow-up (Treatment - Comparison - Dropout)
 - ❖ Actively working: 87% - 41% - 25%
 - ❖ Re-injury: 6% - 12% - 17%
 - ❖ Additional surgery: 9% - 20% - 50%

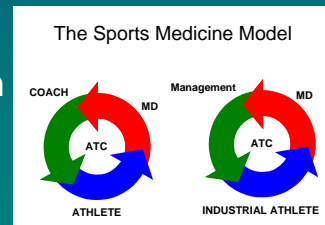
Health & Productivity Management

- Elements of a comprehensive HPM program:
 - Health Risk Assessment - Targeted Intervention
 - Health Education - Behavior Change & Self-Care
 - Worksite Fitness/Wellness Activities
 - Ergonomics - Work Injury Prevention
 - Worksite Injury Rehabilitation - Return to Work

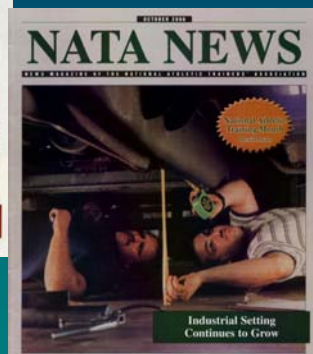
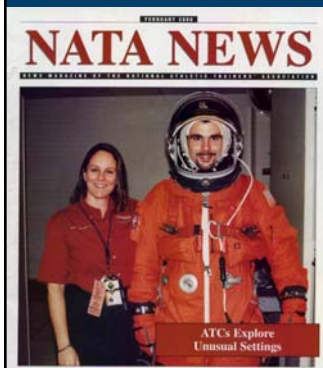
72

How does athletic training relate to HPM?

- Musculoskeletal injury prevention
- Health & performance enhancement
- Documentation of physical demands
- Early recognition of musculoskeletal disorders
- Early evaluation/treatment of acute injuries
- Coordination of medical services
- Musculoskeletal rehabilitation
- Progressive return to full function



Specialty Certification: Occupational Health



Keys to Change in Health-Related Behaviors

- Access to accurate information (individualized)
- Continual encouragement (accountability)
- Frequent assessment of status (progress)
- Strong incentive (medical savings account)

75

Consumer-Driven Health Plan Sample Plan Design

	Employee	Employee + 1	Family
Health Savings Account	\$1,000	\$1,500	\$2,000
Bridge	\$500	\$750	\$1,000
Traditional Health Coverage	80% with discounted providers 60% with non-discounted providers		
Out-of-Pocket Maximum	\$3,000	\$4,500	\$6,000

- Preventive Services include:
 - Physicals and Wellness Exams
 - Screenings
 - Immunizations
- Prescription Drugs and Behavioral Health are included in HSA and THC

Resistance to Change in the Health Care Industry

- The more invested in the current system, the more there is to lose.
 - Substantial barriers to change created by political/financial interests
 - Laws supposedly meant to protect consumers primarily function to protect professional turf

If you're not part of the solution...

you are probably making a lot of money by prolonging the problem!

77

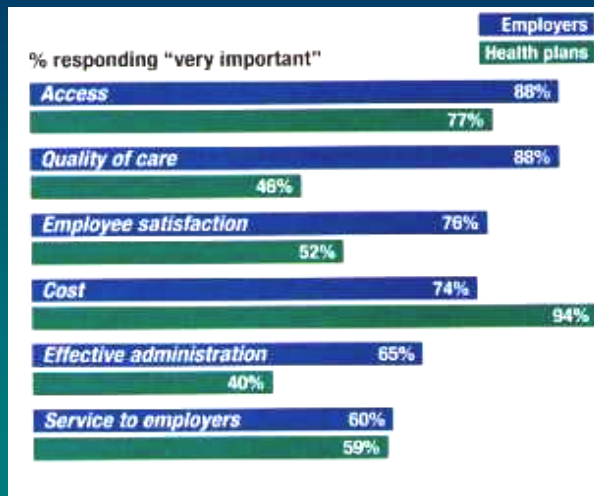
Health Care Quality & Costs

Who decides which healthcare services to purchase?

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

78

Most important factors for employers in selecting & evaluating health plans



Sixth Annual Survey on Purchasing Value in Health Care, Watson Wyatt Worldwide, Washington Business Group on Health, and the Healthcare Financial Management Association, March 2001

Quality of Health Care Services

- President's Advisory Commission on Consumer Protection and Quality in the Health Care Industry (1998):

Existing licensing, accreditation, and certification standards cannot offer the public assurances about overall quality.

Evidence-Based Medicine (EBM)

- The conscientious, explicit and judicious use of current best evidence in making clinical decisions about the care of individual patients.
 - Integration of clinical expertise with the best available evidence from “systematic research”
 - Not based primarily on observational studies, logical intuition, and expert opinions

81

Athletic Training & EBM

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

82

Improving Health Care: A Dose of Competition

- Report of the Federal Trade Commission & Department of Justice – July 2004
 - For much of our history, federal and state regulators, judges, and academic commentators saw health care as a “special” good to which normal economic forces did not apply.
 - 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.

83

Improving Health Care: A Dose of Competition

- Report of the Federal Trade Commission & Department of Justice – July 2004
 - Regulatory rules can reduce the rewards from innovation and sometimes create perverse incentives, rewarding inefficient conduct and poor results.
 - Private payors have copied the payment strategies of the Medicare program.
 - At present, most payments to providers have no connection with the quality of care provided.

84

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.
 - Vigorous competition promotes the delivery of high quality, cost-effective health care, and vigorous antitrust enforcement helps protect competition.

85

Improving Health Care: A Dose of Competition

- Report of the Federal Trade Commission & Department of Justice – July 2004

Recommendations:

 - 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.

86

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.

BIO* Analysis Systems PTOA/ATOA instrument

■ Status ratings pre- & post-treatment

- 0 = critical problem
- 1 = severe problem
- 2 = moderate problem
- 3 = minor problem
- 4 = no problem

The image shows two forms from the BIO* Analysis Systems PTOA/ATOA instrument. The top form is titled 'ATHLETIC TRAINING OUTCOMES ASSESSMENT TO BE COMPLETED BY PHYSICIAN/EXERCISE PHYSIOLOGIST'. It includes a header for patient information (Name, Date, Age, Sex, etc.), a section for 'Number of Athletes Trained' (Total, Male, Female), and a table for recording scores for various athletic training outcomes. The bottom form is titled 'ATHLETIC TRAINING OUTCOMES ASSESSMENT TO BE COMPLETED BY PHYSICIAN AT DISCHARGE'. It includes a header for patient information (Name, Date, Age, Sex, etc.), a section for 'Number of Athletes Trained' (Total, Male, Female), and a table for recording scores for various athletic training outcomes. Both forms include a legend for the status ratings (0-4) and a section for 'Notes'.

PTOA/ATOA: 12 Dimensions

- 1) Movement
- 2) Strength/Power
- 3) Endurance
- 4) Motor Abilities
- 5) Body Structure
- 6) Sensory
- 7) Daily Living Activities
- 8) Work Activities
- 9) Sports/Recreation Activities
- 10) Specific Medical Condition
- 11) Psycho-Social Status
- 12) General Health

BioKinetics Outcomes Data

N=744	Pre-Rating	Post-Rating	Improvement
Daily Living	2.30	3.54	54%
Work-Related	1.90	3.31	75%
Sports/Rec.	1.65	3.26	98%
ROM/Strength	2.17	3.53	62%
Pain/Swelling	1.87	3.35	79%

Relative Value

Functional SRM / Cost x 1000

	BioKinetics N=744	PTOA N=749,577
FUNCTIONAL OUTCOME	1.73	1.35
AVG. CASE CHARGES	\$838	\$1078
FUNC/COST X 1000	2.06	1.25

ATOA – PTOA Functional Outcomes Comparison

- ATOA 1996-2001: 6,588 cases
 - sports rehab clinics: 2,487 cases
- PTOA 1995-2001: >750,000 cases
 - random sample: 11,507 cases
- Cases selected
 - working age population (21-60)
 - exclusion of work comp, Medicare, & auto insurance
 - exclusion of surgeries, fractures, head injuries, & skin wounds
- Analysis: 915 ATOA cases - 4,355 PTOA cases

Summary

- Solutions for the health care cost crisis are not likely to originate from insurers or conventional health care providers
- Return on investment for employer-sponsored worksite health management is extremely good (4:1)
- Chronic disease (diabetes & CHD) & **musculoskeletal disorders** are the primary drivers of health-related costs

93

Health Care's Financial Forecast – 2005 and Beyond

- The Physician Executive, January 2005
 - Council on Graduate Medical Education
 - ❖ 2020 MD shortfall: 88,000 to 200,000
 - Health Affairs, November 2004
 - ❖ As many as 1 million nursing positions may be unfilled by 2008.

94

The Future is Now

- Needed for advancement of profession:
 - Evidence-based protocols for management of common conditions
 - Electronic system for outcomes data collection, analysis, and reporting
 - Collective marketing of sports medicine clinics to health plans

95

Contact Info

- Gary-Wilkerson@utc.edu
- University of Tennessee at Chattanooga
 - Graduate Athletic Training Program
 - www.utc.edu/gatp
- Office: 423-425-5394

