

## The Tufts Program in Health, Work and Productivity

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## Today's Topics

- The challenges in finding solutions to the H&P problem
- The rationale for multi-modal interventions
- The importance of a built-in measurement strategy

## **H & P Improvement**

Generally refers to strategies undertaken to prevent, reduce or otherwise manage the adverse effects of a population's health problems on its work performance and productivity.

## **Why Focus on Productivity as an Outcome? The Health Perspective**

“Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.”

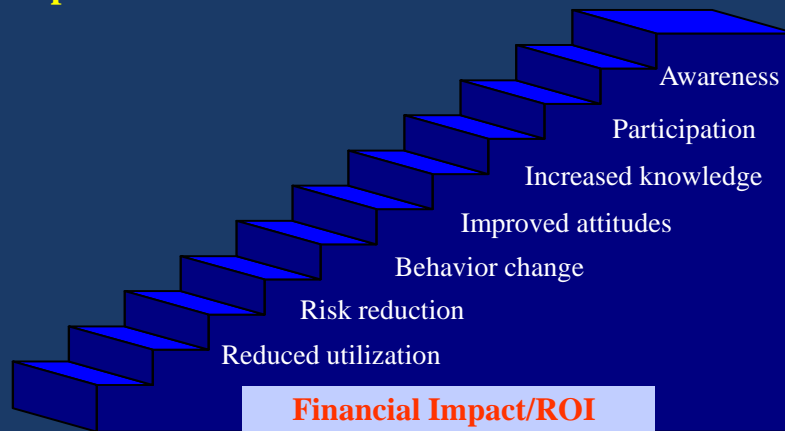
Source: World Health Organization (1948)

## Why Focus on Productivity? The Value Perspective in Adoption Decisions

(Adapted from Peter Neumann, ScD, Tufts-New England Medical Center, 2007)

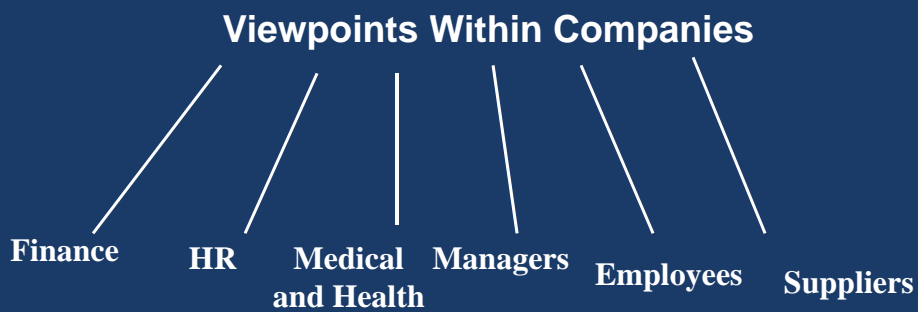
		Impact on cost		
		Cost-saving	Cost-Neutral	Cost-Increasing
Impact on outcome	Higher Effectiveness	Adopt (big winner)	Adopt (winner)	Depends on Willingness To Pay
	Similar Effectiveness	Adopt (winner)	Other factors may decide	Do not adopt (loser)
	Lower Effectiveness	Depends on Willingness To Pay	Do not adopt (loser)	Do not adopt (big loser)

## Why Focus on Productivity? The Program Evaluation Perspective



Cornell University

## **The Challenge of Communicating Your Message: H&P Improvement Offers Common Ground**



## **H & P Improvement Strategies Are Challenging**

- The impact of specific health problems is hard to isolate
- The amount of change in health required to produce a change in productivity is usually unknown
- The methods for achieving meaningful change and their costs are unknown

## Can Measurement Experts Help?



## The Value of Measurement: Answers to Important Questions

- Where's the vulnerability?
- What are the opportunities for reducing the problem?
- What can my company expect if certain changes are implemented?
- Is my strategy working?

# The Work Limitations Questionnaire (WLQ)

Developed By:

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B Amick III  
WH Rogers  
S Malspeis  
K Bungay  
and D Cynn



*"Next question: I believe that life is a constant striving for balance, requiring frequent tradeoffs between morality and necessity, within a cyclic pattern of joy and sadness, forging a trail of bittersweet memories until one slips, inevitably, into the jaws of death. Agree or disagree?"*

## The WLQ and Its Offspring

- Presenteeism measured in 25 or 8-item versions
- Questions cover 4 domains of work: time, physical, mental-interpersonal, and output demands
- Scale scores range from 0 (Limited None of the Time) to 100 (Limited All of the Time)
- Productivity loss score reflects difference in output compared to benchmark healthy workers
- Psychometrics established
- Phone, mail, and web versions
- Available in many languages
- Absenteeism module available

## The Work Limitations Questionnaire (WLQ) Time Management Scale

In the past 2 weeks, how much of the time did your physical health or emotional problems make it difficult for you to do the following?

(Mark one box on each line a. through e.)

	All of the Time (100%)	Most of the Time	Some of the Time (About 50%)	A Slight Bit of the Time	None of the Time (0%)	Does Not Apply to My Job
a. work the required number of hours .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. get going easily at the beginning of the workday .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. start on your job as soon as you arrived at work .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. do your work without stopping to take breaks or rests .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. stick to a routine or schedule .....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: For permission to use the WLQ, contact WLQ@tufts-nemc.org

## The Work Limitations Questionnaire (WLQ) Output Scale

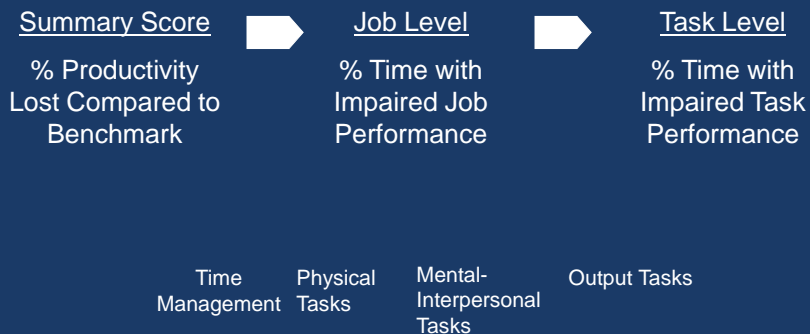
In the past 2 weeks, how much of the time did your physical health or emotional problems make it difficult for you to do the following?

(Mark one box on each line a. through e.)

	All of the Time (100%)	Most of the Time	Some of the Time (About 50%)	A Slight Bit of the Time	None of the Time (0%)	Does Not Apply to My Job
a. handle the workload .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. work fast enough . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. finish work on time . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. do your work without making mistakes. . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. feel you've done what you are capable of doing. . . .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: For permission to use the WLQ, contact WLQ@tufts-nemc.org

## WLQ Levels of Data 25-Item and 8-Item Versions



## **H & P Improvement: Why Start with Depression?**

- Common, chronic ailment
- Documented impact on employment
- Strong evidence base documenting effects of detection, diagnosis and treatment on symptoms
- Some evidence that effectively treating symptoms benefits employment
- Many people with depression do not get the care they need

## **Why More May Be Needed**

- The goal of medical care is not aligned completely to the goal of H & P Improvement
- Medicine assesses and treat signs and symptoms of disease
- A clinically meaningful change in disease may not translate into adequate performance and productivity
- Other variables contributing to performance and productivity deficits typically are not addressed

## Depression Facts

- **Common**
  - Annual Prevalence 6.6%
  - Lifetime Prevalence 16.2%
- **Underdiagnosed and Undertreated**
  - 50% Undiagnosed
  - 75% Have comorbid psychiatric and/or medical diagnosis
  - < 50% Diagnosed have adequate treatment
- **Expensive**
  - \$44-51.5 Billion (2003 dollars) in lost work productivity
  - \$26.1 Billion in direct costs
  - \$12 Billion in annual medical costs
- **Chronic**
  - Mean Episode Duration 16 weeks
  - Recurrence Rate
    - 50% of first episodes followed by a recurrence
    - 75% with recurrence have second episode
    - 95% of those have a third episode
- **Disabling**
  - Severely Limits Social Role Performance in 60%

## Treatment of Depressive Disorders

- 90% takes place in primary care
- Effective treatment reduces symptoms & functional impairment as well as loss of work days & productivity
- Treatment Modalities:
  - Cognitive Behavioral Therapy (CBT)
  - Antidepressant medication
  - ECT

## Diagnostic Category by Symptom Grouping

Diagnostic Category	Number of Symptoms	Duration
Major Depression	> 5 depressive symptoms, one of which is depressed mood or anhedonia	> 2 weeks
Minor Depression	2-4 depressive symptoms, one of which is depressed mood or anhedonia	> 2 weeks
Bipolar Disorder	Periods of meeting criteria for MDD plus either periods with > 4 manic symptoms 2 if patient has elevated mood, or > 5 manic symptoms if patient has irritable mood	> 2 weeks for depressive symptoms > 7 days for manic symptoms, shorter duration required if hospitalized
Dysthymic Disorder	3-4 depressive or dysthymic symptoms	> 2 years

## Information Needs

- A deeper understanding of depression's work impact
- Identifying the contribution of the work situation
- Intervention R & D

## The Health and Work Study

- NIMH-Sponsored, 2000-2004
- Screened 14,000 in MA physician offices
- Enrolled 572 (eligible = employed  $\geq$  15 hours/week with no plans to stop working, no major comorbidities)
- Depression Group = 286 (Dysthymia = 72, MDD = 105, Double Depression = 109)
- Healthy Controls = 193
- Rheumatoid Arthritis Group = 93
- Surveyed at BL, Month 6, Month 12, and Month 18

## Impact Measures

- Unemployment vs. Employment
- Job Retention vs. Turnover
- Absenteeism
- Presenteeism

## Components of Health-Related Productivity Loss

- Presenteeism → WLQ



- Absenteeism → Time Loss Index



Does work productivity increase with depression symptom improvement?

If so, do depressed employees become as productive as any employee?

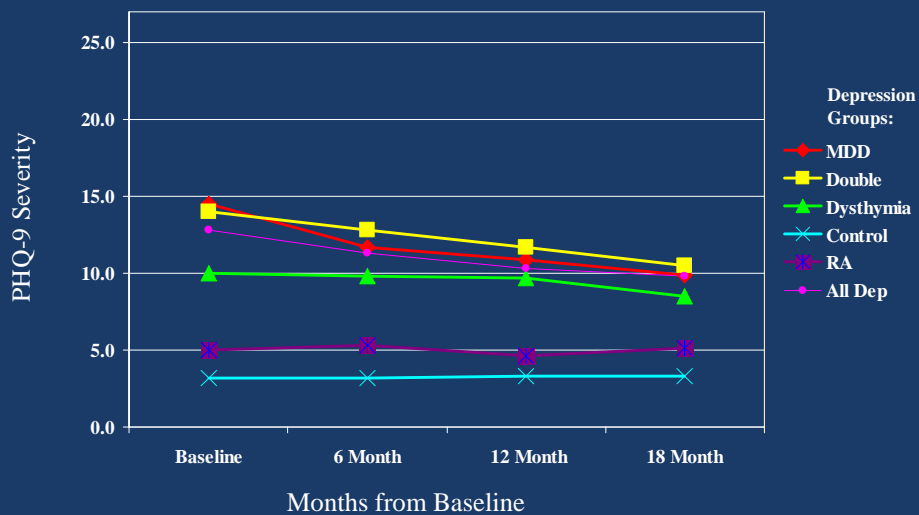
## Health and Work Study: Job Loss Six-Months Later

	Dysthymia	MDD	Double	RA	Control	<i>p</i> -value*
N = 400	51	69	76	72	132	
% Unemployed	12	15	18	3	1	<.0001
% Fired/Laid Off	7	13	8	3	3	.036
% Quit A Job	17	22	14	1	6	.002
% Cut Back Hours	30	36	21	15	16	.008
% Full-to-Part Time	4	12	8	0	0	.001
Number of Days Missed	1.2	2.1	1.8	0.8	0.7	<.0001

\**p* values indicate significance of the difference between Depression versus other two groups; adjusted for age, gender and number of co-morbid medical conditions.

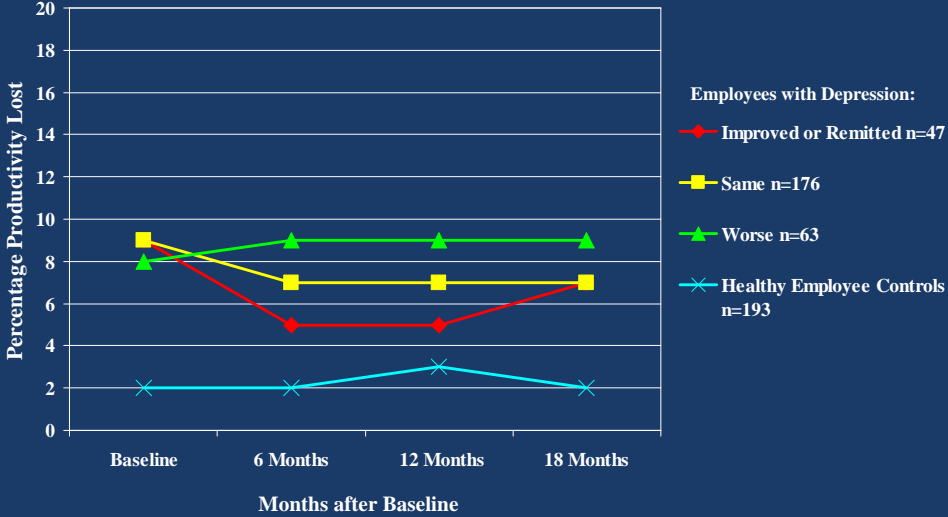
Source: Depression and Productive Work Activity Study, D. Lerner, Principal Investigator, 2004.

## Depression's Burden Persists



Source: Depression and Productive Work Activity Study, D. Lerner, Principal Investigator, 2004.

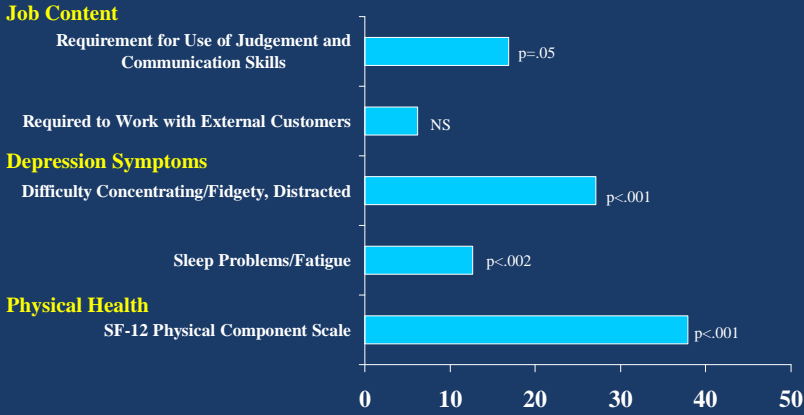
# The Work Productivity Gap



Source: Depression and Productive Work Activity Study, D. Lerner, Principal Investigator, 2004.

# Effect of Having the Worst Score on Explanatory Variables vs. the Best Score

## WLQ Time Scale

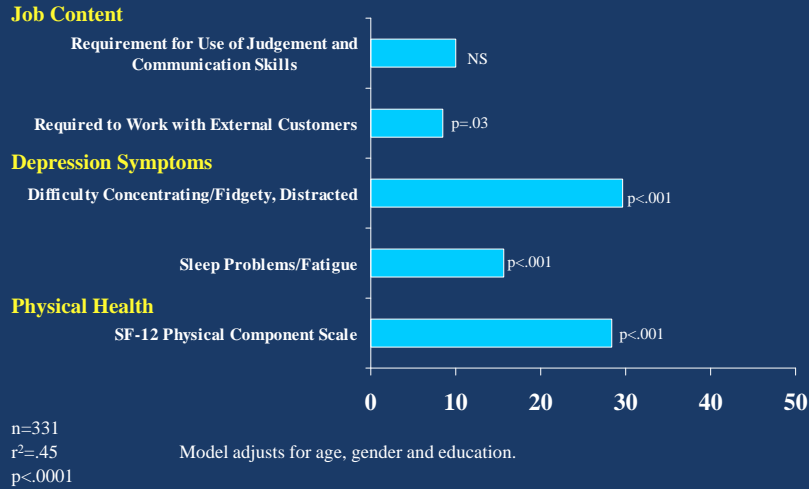


n=329  
 r<sup>2</sup>=.35  
 p<.0001  
 Model adjusts for age, gender and education.

Source: Depression and Productive Work Activity Study, D. Lerner, Principal Investigator, 2004.

## Effect of Having the Worst Score on Job and Symptom Variables vs. the Best Score

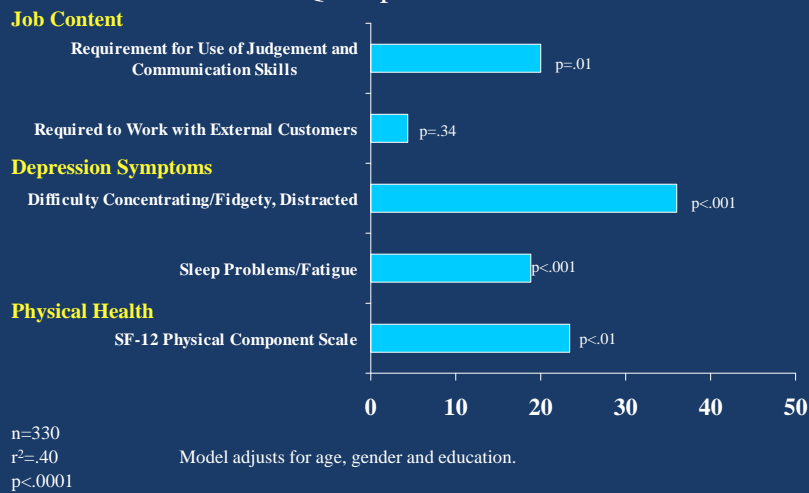
### WLQ Mental-Interpersonal Scale



Source: Depression and Productive Work Activity Study, D. Lerner, Principal Investigator, 2004.

## Effect of Having the Worst Score on Job and Symptom Variables vs. the Best Score

### WLQ Output Scale



Source: Depression and Productive Work Activity Study, D. Lerner, Principal Investigator, 2004.

## Study 1 Conclusions

- Multiple dimensions of job performance are impaired by depression, more so than other common illnesses.
- Impaired performance persists despite symptom improvement.
- Additional efforts are needed to reduce work impairment secondary to depression.

## Unique Characteristics of a Workplace Intervention

- Opportunity to detect depression in a community setting
- Use of existing resource:
  - Employee Assistance Program (EAP) counselors
- Opportunity to encourage employer investment by demonstrating “return on investment” (ROI)

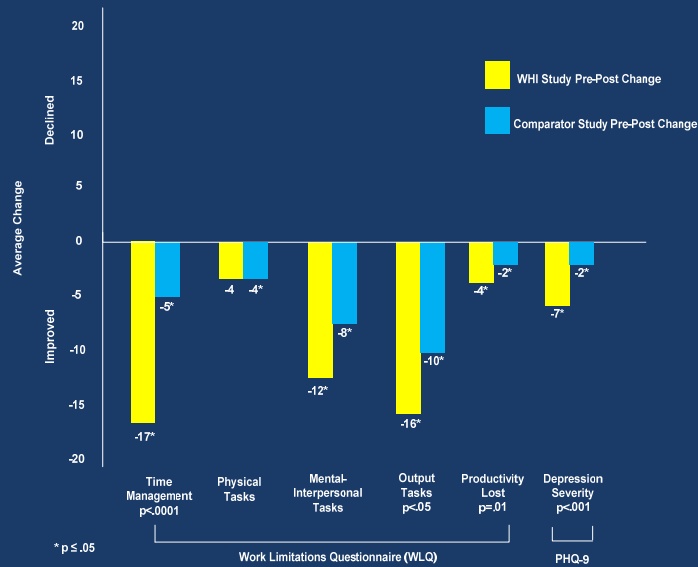
# The Work and Health Initiative (WHI)

Aeronautics Manufacturer and Maine State Government

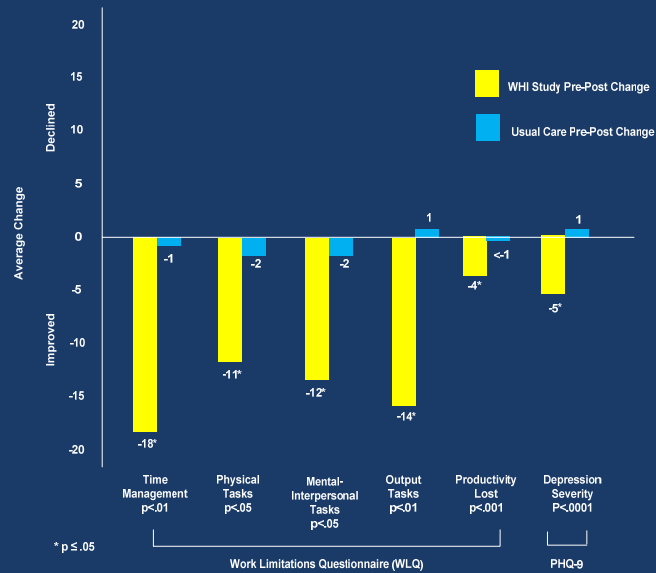
- Web-Based Employee Health Screening with Feedback
- Depressed and Work-Impaired Employees Enrolled in 16-Week WHI Program
- Care Provided by EAP Counselors On the Phone
- Three Care Components
- Medical Care Coordination
- Self-Help using Cognitive Behavioral Therapy Strategies
- Work Coaching

(Lerner, Adler, Rogers and Hermann, 2004-7)

## Means and Mean Change Scores From Baseline to 6-Month Follow-Up for WHI and NIMH Sample Aeronautics Manufacturer Study



## Mean Change Scores From Baseline to Four-Month Follow-Up Maine State Government Study: Treatment vs. Usual Care



## Summary

- Depression's large human and economic burdens were reduced with the WHI.
- The WHI improved employees' depressive symptoms and work productivity.
- The technology exists to measure the impact of depression and other conditions on workplace functioning.
- The impact of depression on functioning remains among the highest of all medical conditions.