

# HWCF

Healthcare Workers' Compensation  
Self-Insurance Fund



## Preventing Injuries Through Better Hiring October 28, 2011

**Ergo** Science™

THE INJURY PREVENTION EXPERTS

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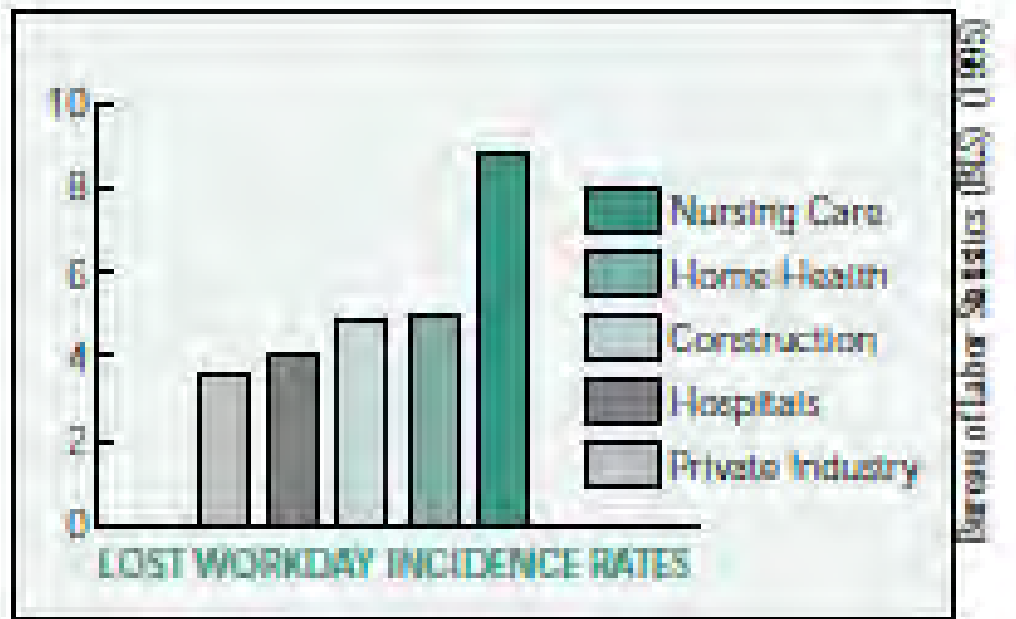
# Overview of Presentation

- **Scope of the Injury Problem in Health Care**
- **Cost Control Through Functional Screening**
- **Case Examples of Success**
- **Regulatory Issues: ADA & EEOC**
- **Quality Functional Testing**
- **Development and Implementation**

# Scope of the Injury Problem in Health Care



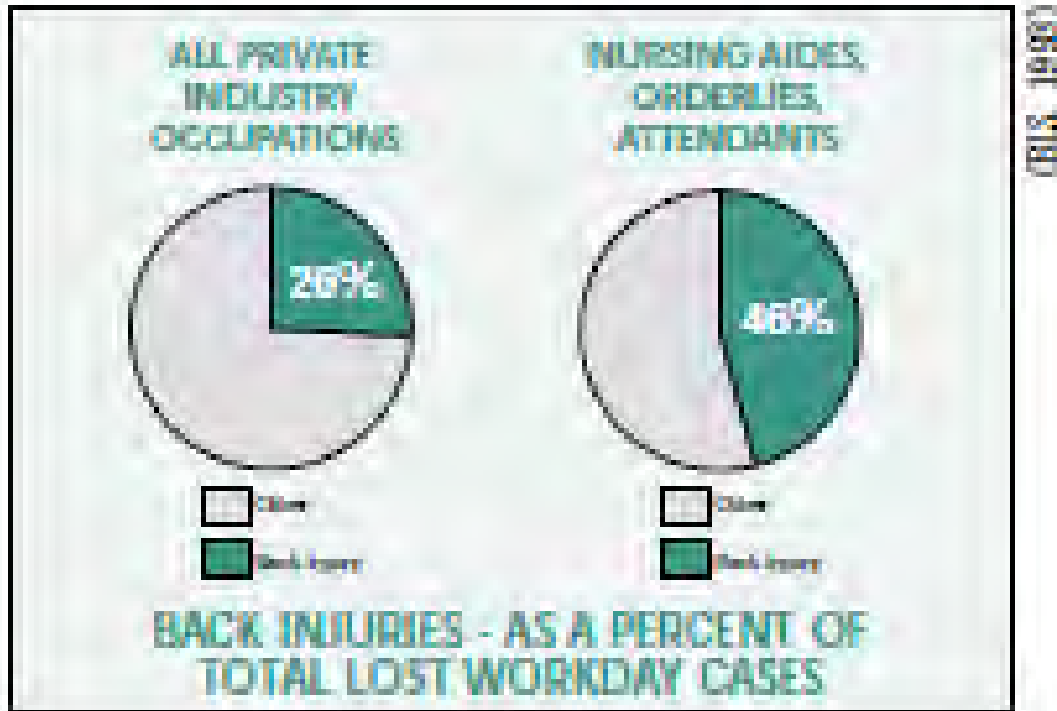
# Injury Incidence Rates in Health Care (1)



Private Industry	3.6
Hospitals	4.1
Construction	4.9
Home Health	5.0
Nursing Care	8.8

(1) From Cal OSHA/Bureau of Labor Statistics

# Prevalence of Back Injuries in Health Care



# Costs Related to Injury

## ■ Medical Costs

- Back Strain \$4,000/case
- Back Injury \$25,000/case
- Back Surgery \$85,000+/case
- Nationally 67,0000 back injuries among health care workers estimated to cost \$1.7 billion

## ■ Indirect costs = x4 the medical costs

- Lost productivity
- Retraining
- Sick time

# Cost Related to Turnover

- **Communication of proprietary trade secrets, procedures, and skills to competitive organizations**
- **Lost Productivity associated with “sitting duck”**
- **Recruitment: administrative, advertising, screening and interviewing,**
- **Selection: security checks, processing of references, testing.**
- **Lost productivity before hiring replacement,**
- **Costs of training, including supervisory and coworker time**
- **Public relations costs associated with having a large number turnover .**
- **Increased unemployment insurance costs.**

# Cost of Turnover

- **Healthcare Turn Over = 15.5% - second only to the Hospitality Industry**
- **Cascio (2000) cost of replacing 288 employees per year (in a hospital with 200 beds employing 1200 persons with a turnover rate of 2% per month) was \$2,888,295.52 when all sources of costs were analyzed.**
- **Business Week (1998) study estimated that the replacement costs alone, are over \$10,000 for about half of all jobs and approximately \$30,000 for all jobs.**

# Cost Control Through Functional Screening



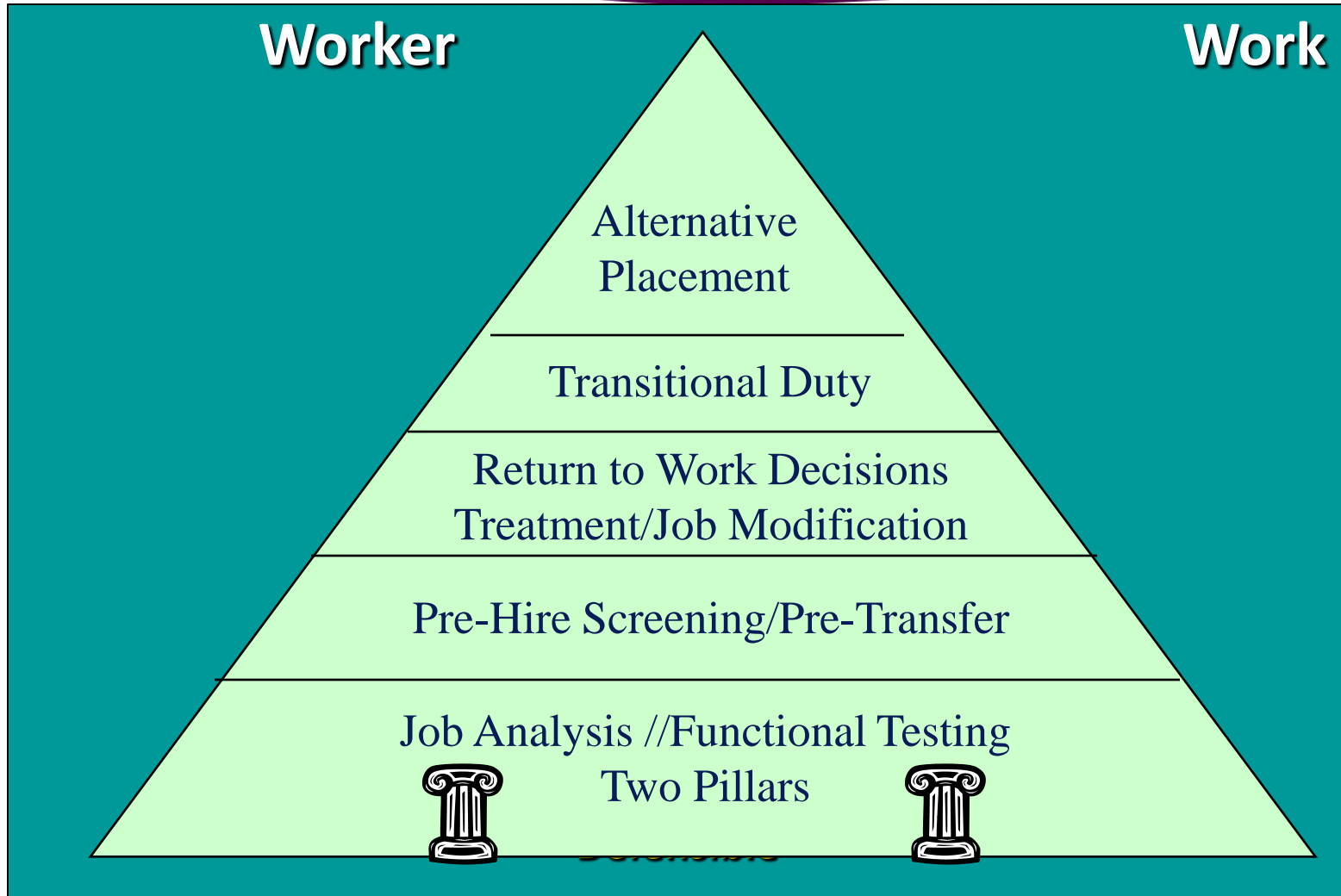
# What is Functional Screening?

## ■ Testing the physical demands of the job

- |            |             |
|------------|-------------|
| • Lifting  | • Climbing  |
| • Carrying | • Crawling  |
| • Pushing  | • Handling  |
| • Pulling  | • Fingering |
| • Stooping | • Kneeling  |
| • Reaching | • Squatting |



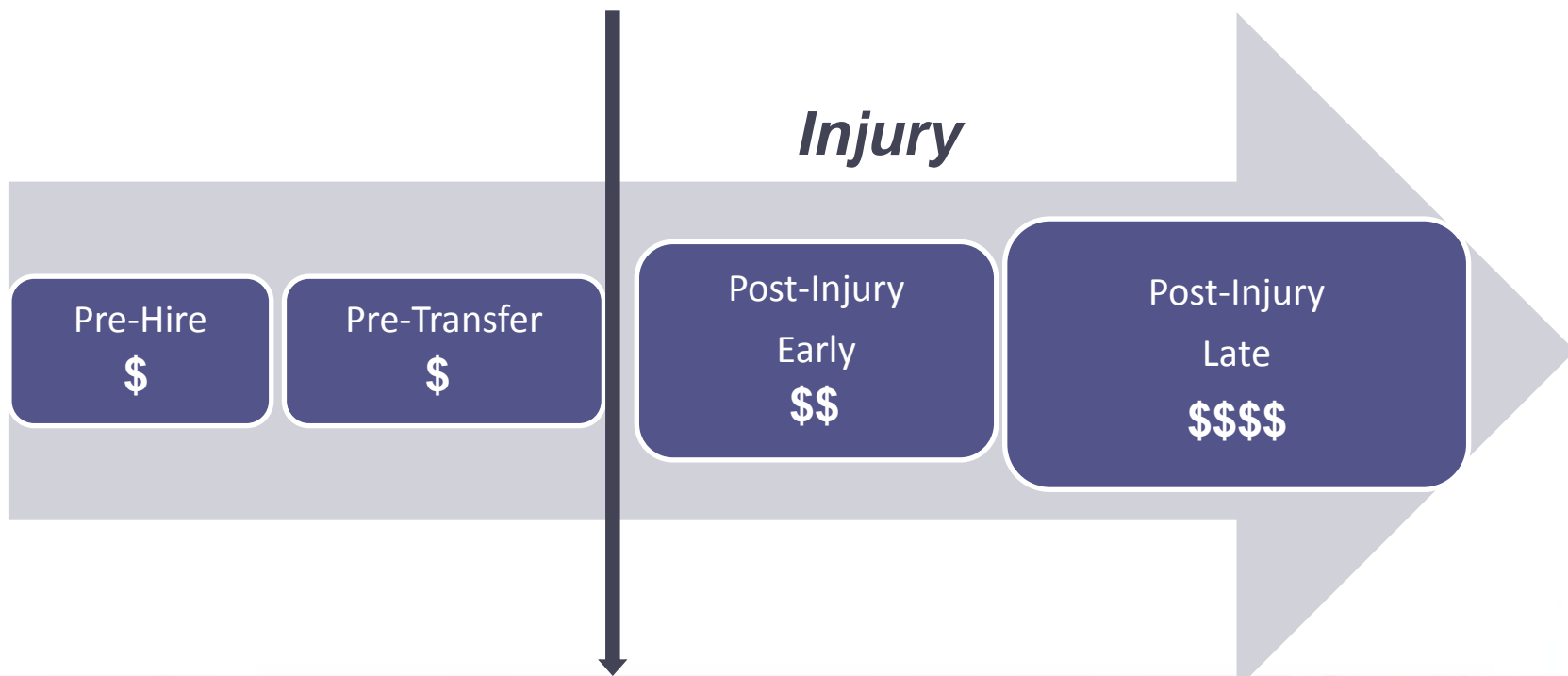
# Matching the Worker With the Work



# Including Functional Screens in your Pre-Hire Program

## An Ounce of Prevention is Worth a Pound of Cure

- will reduce injury rates, worker downtime, workers comp bills, medical bills, turnover, litigation



# A Story is Worth a Thousand Statistics

## ■ Meet Susan

- 48 year old nurse with a stellar employment history
- Applying for RN position, who wouldn't want her as employee, right?



Well maybe not...

- Medical history intake interview uncovered that Susan was on a waiting list for a total knee replacement!

Depends on her functional abilities...Do hers match job demands?

## **Functional Testing Revealed:**

- Balance inadequate
- Unable to perform lifting
- Unable to perform squatting

# A Story is Worth a Thousand Statistics

## ■ Meet Martha

- 35 year old morbidly obese female (5'4", 308 lb)
- Everyone fears that she's an injury waiting to happen
- Making a hiring decision based on her weight is discriminatory and unfair to Martha



Depends on her functional abilities...  
Do hers match job demands?

Functional Testing Revealed:

- Balance inadequate
- Unable to perform
  - Lifting
  - Squatting
  - Pushing

# Case Examples of Employer Success

# Case Study: Littleton Functional Screens

## Littleton

- 3-year test
- Performed job demands analysis to develop screens
- Used ErgoScience Pre-Hire Functional Screens
- Tested physical plant applicants at University of Illinois at Chicago

## Physical Plant Positions Screened

- Building Service Worker (BSW)
- Driver
- Driver helper
- Electrician
- Carpenter
- Plumber
- Machinist

# Littleton Case Study (continued)

- **Conducted 712 Screens (over 3 yrs)**
- **Fail Rates**
  - 22% BSW applicants (heavier work, more female applicants)
  - 2.5% Driver applicants
- **Comparison to prior 3 yrs**
  - # Lost Day Cases - reduced 18.5%
  - Total Injury Costs - reduced 79%
  - Reduction of Total Costs and Costs per case
- **ROI: \$18 saved for every \$1 spent**

# Success Story: Meat Processing

- **Savings due to decreases in wrist/hand injuries**
  - Percent WC savings 85%
  - Injury reduction 63%
- **Overall ROI**
  - Three times ROI

# Case Study: Flatbed Transportation Company #1

	1 <sup>st</sup> Year
# Functional Screens	90
# Failed (%)	13 (14%)
Injury comparison to PY	↓ 33%
Injury Rate comparison to PY	↓ 17%
Worker Comp Expenses comparison to PY	↓ 41%

# Case Study: Flatbed Transportation Company #2

	First 9 Months
# Functional Screens	158
# Failed (%)	14%
Injury comparison to PY	↓ 38%
Worker Comp Expenses comparison to PY	↓ 63%

# Case Example: Regional Hospital

- **Implemented post offer screening for:**
  - Certified Nursing Assistants
  - Patient care technicians/Activity assistance
  - Transporters
  - Nutrition Services/Cooks
  - Environmental Service Tech
  - HVAC Maintenance
  - Cooks
  - Hospice Aides
  - ECG Techs
  - EMT
  - ER Techs
  - Mental Health Assistants
  - Rehab Aides

# Regional Hospital POS Results

- Injury rate decreased 66%
- Saved \$.25 M first year
- Injury severity also declined
- First year experienced no injuries from patient handling

# **Regulatory Issues: ADAAA & EEOC**

# Important Considerations

- **Americans with Disabilities Act (ADA)**
  - Test only the essential functions of the job
    - Job function considered essential if:
      - Reason job exists
      - Limited # of employees among whom function can be distributed
      - Highly specialized - incumbent hired for ability to perform function
- **EEOC**
  - Forbids medical testing pre-offer
    - No blood pressure or heart rate measures
    - Safety Issues
    - Examiner can't be medical provider
  - Views pre-Offer Screening negatively

# Three Musts for Pre-Hire Screening

- **Conduct Job-Specific Screens**
- **Document**
  - Screen Development
  - Protocols
  - Outcomes
- **Measure Outcomes**

# Optimal Sequence – for Functional Screens

- **Interview**
- **Extend Conditional Offer**
  - Continent upon passing...
- **Conduct Physical Screens**
  - Drug screen
  - Physician Physical Exam
  - Functional Abilities Test
  - Audiometric, pulmonary/respiratory tests, vision

# EEOC vs. Dial Corporation

- **Dial Corporation was found guilty of unjustified adverse impact for women**
- **Male pass rate 97%; female pass rate 38%**
- **Test more difficult than job**
  - Job required 1.25 lifts per minute to height of 60 inches
  - Test required 6 lifts per minute to height of 67 inches
- **No incumbent or other validity testing was performed**
- **Test developed by in-house personnel**
  - HR Manager
  - Employer's Occupational Health Nurse

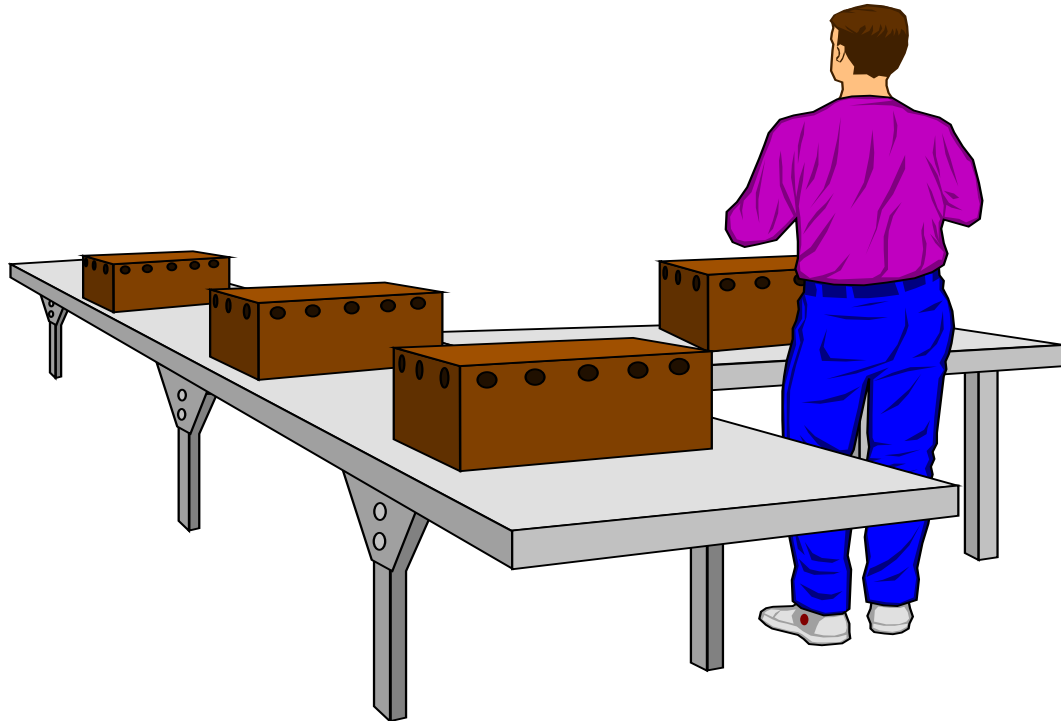
# EEOC vs. Dial Corporation

- Total number of injuries during 1<sup>st</sup> 3 years of employment before and after implementation of the screens was essentially same
- Decrease in injuries alone was not sufficient to justify a test that creates adverse impact
- Results of the test were applied inconsistently
  - Test was scored inconsistently
  - Test scores were changed from pass to fail in favor of male applicants for no apparent reason

# Quality Functional Testing

# The Well-Designed Functional Pre-Hire Test

- Job Specific
- Standardized
- Safe
- Practical
- Objective
- Reliable
- Valid

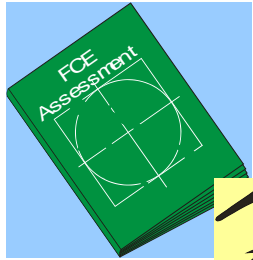


- **Job Specific – based on job analysis**
  - Weights/forces
  - Heights/distances
  - Repetitions/cycle time
- **Standardized – insures against discrimination**
  - Procedure Manual
  - Training
- **Safe – protects the applicant and employer**
  - Work up to job requirement
  - Medical history
  - Musculoskeletal Screen
- **Practical – average 30-45 minutes**
  - Testing the most difficult job demands

# Well-Designed Test

- **Objective – free from bias – shown through reliability research**
- **Important in functional testing because testing for brief period of time and projecting to 8-hr day.**

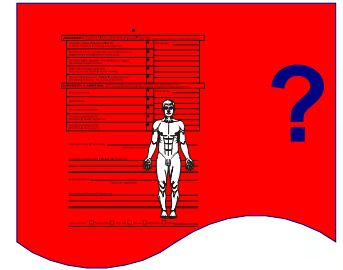
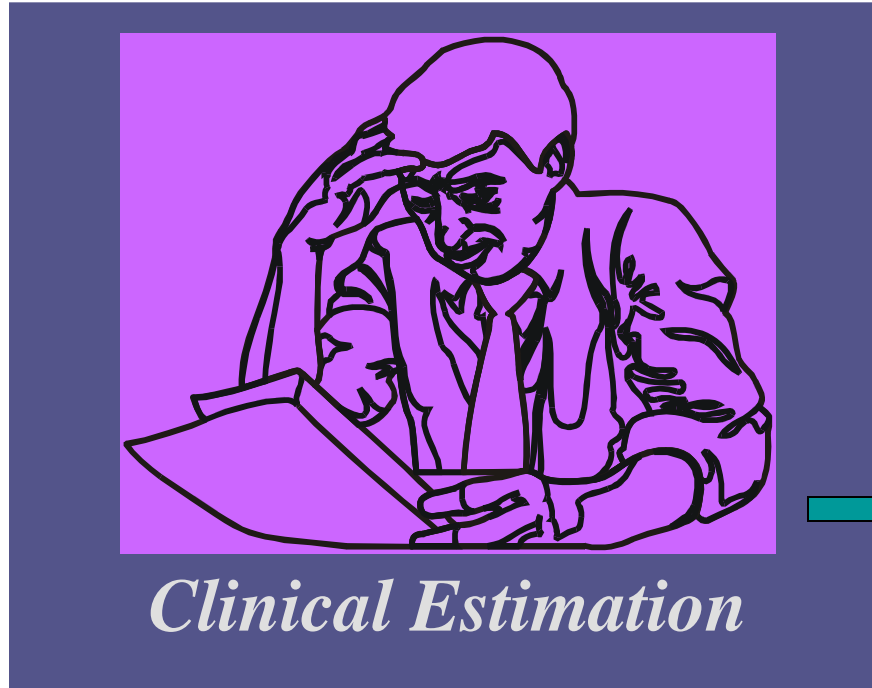
# The Common Scoring System . . .



Protocol



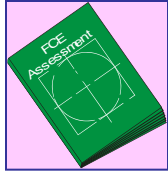
*Clinician  
Observation*



*Final Report  
possibly with  
projection to  
full-time work  
day.*

**The “Gray” Zone**  
**Creates inconsistent & unreliable results!**

# Objective Scoring System



Protocol



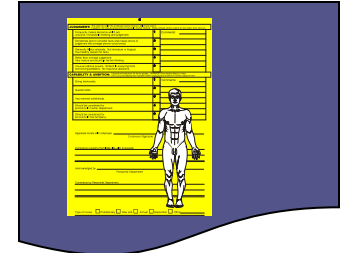
Clinician's  
Observation

## Objective & Defensible

University-Based Research

Published in Peer Reviewed  
Journals

Creates Examiner Objectivity



Final Report with  
Projection to 8-12  
hour day.

# What is Reliability?

- **Reliability = Consistency**

If different therapists test the same patient, will you get the same results?

# What is Validity?

- **Validity = Accuracy**

Can the test accurately predict a safe level of work?

**Reliability and validity are critical to trusting and defending test results!**

# Ensure Test Validity

- **Previous validation of entire functional test**
- **Job Demands Analysis**
- **Customize test**
  - Select max weights handled
  - Test to max distance over which weight handled
  - Select most difficult non-materials handling jobs
    - Longest continuous duration
    - Greatest number of continuous repetitions/distances
- **Quality Review**
- **Incumbent testing**
  - 98-100% pass rate

# Ensure Reliability

- **Research – does it validate the test?**
- **Procedure Manual**
- **Training**
- **Quality Review**

# Changes that Trigger Test Re-Design

- **Changes in job that require notification and test re-validation**
  - Elimination of most difficult materials handling task
  - Change in max weights handled
  - Change in max distance over which weight handled

# Development and Implementation of Pre-Hire Functional Screens

# High Level Implementation Plan

## Five Major Phases

**Phase I: Job Analysis**

**Phase II: Screen Development**

**Phase III: Train Evaluators**

**Phase IV: Incumbent Testing**

**Phase V: Implementation**

# Step I: Job Analysis

- **Onsite**
  - Interviews with management/supervisors/incumbents
  - Videotaping/Observing
  - Measure forces, distances and heights
- **Offsite**
  - Review and analyze videotape
  - Create Reports

# Job Analysis Report: Warehouse Order Selector

**ErgoScience** JOB DEMANDS ANALYSIS REPORT

Date: 11/20/2010

Company: XYZ Warehouse

Job Title: Warehouse Order Selector

Job Description/Essential Tasks:

Task	% of day task performed
Log on to system	1.59
Pre-shift Equipment Inspection	0.69
Select Pallet	1.56
Select product	94.99
Shrink Wrap Product on Pallet	0.78
<b>Total</b>	<b>100.00</b>

Overall Level of Work:  
Based on this evaluation, this position is classified at the Heavy level, as defined by the U.S. Department of Labor in the Dictionary of Occupational Titles.

Environmental Condition:

Inside                     Heat                                     Cold  
                                   Wet     Humid  
                                   Noise                                         Light  
                                   Vibration

Personal Protective Equipment Required

Hard hat     Steel-toed shoe     Gloves     Safety glasses

Other: Cold weather suit for freezer section; head wear for warmth in freezer section; double gloves or insulated gloves for freezer section

Tools Used/Equipment Operated:

- Pick Tool
- Triple Pallet Jack
- SOS Unit
- Belt Printer
- Roll of shrink wrap

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Specific Job Demands: The description of job tasks which was entered into the evaluation was provided by XYZ Warehouse Job Description and confirmed the ratings from multiple supervisors and employees.

Activity	Percent of Job	DOT Classification	Frequency Repetitive/ Sustained	Distance/ Continuous Duration
Below waist lift	0.21	Occasionally	NA	0 inches; 30 sec
Above waist lift	0.21	Occasionally	NA	Waist to 78 inches
Horizontal carrying	4.74	Occasionally	NA	25 feet
Unilateral carrying	0.92	Occasionally	NA	25 feet
Push*	0.92	Occasionally	NA	12 inches; 12 sec
Pull*	0.92	Occasionally	NA	12 inches; 12 sec
Sit	0	Never	NA	NA
Stand	11.34	Occasionally	S	NA
Forward bending standing	4.93	Occasionally	K	NA
Forward bending sitting	0	Never	NA	NA
Twist	0	Never	NA	NA
Squat	0.99	Occasionally	K	5 sec
Support lifting	0	Never	NA	NA
Stair climbing	0	Never	NA	NA
Walk	5.49	Occasionally	S	20 Ft
Crawl	0.92	Occasionally	K	2 ft
Ladder climbing	0	Never	NA	NA
Trunk rotation - standing	0	Never	NA	NA
Trunk rotation - sitting	0	Never	NA	NA
Reach - above shoulder	4.21	Occasionally	K	5 sec
Reach - at shoulder or below	10.10	Occasionally	K	10 sec
Handling	14.21	Occasionally	K	5 sec
Fingering	10.10	Occasionally	K	5 sec

The Dictionary of Occupational Titles (DOT) is a list of jobs. It is used to determine the level of difficulty of a job. The DOT is divided into three levels: **Light** (1-3), **Medium** (4-6), and **Heavy** (7-9). The DOT is used to determine the level of difficulty of a job. The DOT is divided into three levels: **Light** (1-3), **Medium** (4-6), and **Heavy** (7-9).

Manual Material Handling Activity	Maximum Weight (lb)	DOT Category	Height/ Distance	Object Handled
Below waist lift	90	Heavy	0 to waist (H and lower)	Box; of Product
Above waist lift	20*	Medium	04 to waist (lower only); waist to 50**	Box; of Product
Horizontal Car	35	Medium	25 ft	Box; of Product
Unilateral Car	35*	Medium	25 ft	Box; of Product
Push	75*	Heavy	12 inches; horizontal push; Hand height 5 inches	Box of Product on shelf
Pull	75*	Heavy	12 inches; horizontal pull; Hand height 5 inches	Box of Product on shelf

\*Order Selector lowers this weight down from reaching and then lifts to 60 inch height on pallet.  
 \*\*Established through XYZ Warehouse Policy.  
 \*Pounds of force measured with force gauge. Not weight of product.

Dictionary & Coordination Range:

Hand Dexterity	3
Finger Dexterity	3
Bi-manual Coordination	3
Bi-manual Speed Coordination	3

Heavy work:  
 1) Lifting high while seated. (at top 10% of population could perform)  
 2) Lifting average weight while seated. (the heaviest 10% population at top 10% of the population could perform)  
 3) Average weight while seated. (the middle 10% of the population could perform)  
 4) Below average weight while seated. (the heaviest 10% population at bottom 10% of the population could perform)  
 5) Heaviest weight while seated. (from the heaviest 10% of the population could perform)

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# Warehouse Order Selector: Continued

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Risk factors for those areas of the body affected are indicated in red.

Risk Factors	Performing job or tasks that involve:	Body Part Associated With Stress			
		Neck/Shoulders	Hand/Wrist/Arm	Back/Trunk/Hip	Leg/Knee/Ankle
Repetition	(1) Repeating the same motions every few seconds or repeating a cycle of motions involving the affected body part more than twice per minute for more than 2 consecutive hours in a workday.				
	(2) Using an input device such as a keyboard and/or mouse in a steady manner for more than 4 hours total in a workday.				
Force	(3) Lifting more than 25 pounds at any one time more than 35 pounds more than 10 times per day, or more than 25 pounds below the knees above the shoulders, or in arms' length more than 25 times per day.				
	(4) Pushing/pulling with more than 20 pounds of total force (e.g., equivalent to pushing a 60 pound box across a tile floor or pushing a shopping cart with five 40 pound bags of dog food) for more than 2 hours total per day.				
	(5) Winking an unsupported object weighing 2 or more pounds per hand, or use of an equivalent pinching force (e.g., holding a small binder clip open) for more than 2 hours total per day.				
	(6) Gripping an unsupported object weighing 10 pounds or more per hand, or use of an equivalent gripping force (e.g., twisting the wrist of an aluminum soda can with one hand), for more than 2 hours total per day.				

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Risk Factors This Standard Covers	Performing job or tasks that involve:	Body Part Associated With MSD Incident			
		Neck/Shoulders	Hand/Wrist/Arm	Back/Trunk/Hip	Leg/Knee/Ankle
Awkward Postures	(1) Repeatedly raising or working with the hands) above the head or the elbows) above the shoulders) for more than 2 hours total per day.	X			
	(2) Kneeling or squatting for more than 2 hours total per day.				
	(3) Working with the back, neck or wrists bent or twisted for more than 2 hours total per day (see figure.)				
Costs of Stress	(4) Using the hand or arm as a hammer more than 10 times per hour for more than 2 hours total per day.				
	(5) Using vibrating tools or equipment that typically have high vibration levels (such as chainsaws, jack hammers, percussive tools, mixing or chipping hammers) for more than 20 minutes total per day.				
	(6) Using tools or equipment that typically have moderate vibration levels (such as jigsaws, grinders, or sanders) for more than 2 hours total per day.				

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# Step II: Develop Screens

- 1. Identify tasks**
- 2. Determine pass/fail criteria**
- 3. Develop administrative procedures**
- 4. Write procedure manual**
  - Verbal instructions
  - Testing protocol and procedures
  - Scoring procedures
  - Forms


# Establish Procedure Manual

- **Documented administrative procedures**
  - Consent forms
  - HIPPA release forms
  - Medical intake forms
  - Incident release forms
  - Data collection forms and report templates
  - Handling of special situations
  - Routine scheduling and reporting procedures
- **Standardized verbal instructions**
  - Read to applicant
  - Signed by applicant
- **Detailed test administration instructions**
  - Placement of equipment, precise protocol
  - Ensures repeatability
  - Scoring

# Customize Screening

- **Weights**
- **Heights**
- **Distances**
- **Repetitions**
- **Equipment**
- **Location**

# Sample Report



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**Physical Work Performance Post-Offer Screen Report**  
 ErgoScience, Inc.  
 Clinic Address: \_\_\_\_\_  
 Clinic Phone 000-000-0000 Fax 000-000-0000

Name:
Social Security (last 4 digits):
Employer: AirWisconsin
Job Title: Passenger Service Agent
Evaluation Date:
Purpose of Evaluation: Post-Offer Screen
Evaluator:

Tasks	Applicant Abilities	Job Demand	Match Yes/No
Lift Floor to 56 inches		75 lb	
Push Pull		60 lb	
Climb Stair Carrying 50 lb		Occasionally	
Balance		Required	
Stacking Luggage while Kneel/Squat		Occasionally	

1. The Dictionary of Occupational Titles (D.O.T.) defines Occasionally as up to 1/3 of the day, Frequently 1/3 to 2/3 of the day, and Constantly as 2/3 to the full day.

**Body Mechanics/Lifting Technique:**

This applicant did not require instruction in lifting technique and body mechanics in order to lift safely.  
 This applicant required instruction in lifting technique and body mechanics in order to lift safely.

**Quality of Lifting Technique:**     Used good body mechanics.  
     Used fair body mechanics.  
     Used poor body mechanics even after instruction

**Passed**

**Failed due to:**                      **Check all that apply.**     Abilities did not match job demands  
     Signs of Substance abuse  
     Inability to follow test instructions

**Deferred**

Evaluator Signature: \_\_\_\_\_

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# Step III. Evaluator Training & Certification

- **Test administration**
- **Scoring**
- **Creating report**
- **Handling special situations**
  - High blood pressure
  - Pregnant applicants
  - Late applicants
  - Applicants weighing over 375 lb. (if testing ladder climbing)
  - Medications
- **Emphasize consistency**

# Step IV: Incumbent Testing (optional)

- Ideally represent 10% of workforce in a variety of locations
- Select incumbents who are successfully performing the job
- Variety in age, gender, ethnicity
- Incumbent testing results:
  - Number of incumbents tested & pass rate
  - Individual pass fail scores are not shared
- Provides experience carrying out procedures

# Step V: Implementation

- **Scheduling external clinic-based tests**
- **Quality Review of individual tests for 6 months**
- **Monitor outcomes**
  - ES Quarterly/Annual Reports
    - Pass-fail rates by gender
    - Pass-fail rates by tasks
  - Employer
    - Injury incidence
    - Injury costs
    - Number of lost and restricted days
- **Modification and continual improvements**

# Summary and Conclusion

- **Post-Offer/Pre-hire functional screening helps employers control workers comp and turn-over costs**
- **Understanding the ADAAA & EEOC issues is paramount**
- **Quality of testing varies greatly and is extremely important for defensibility**
- **Five-step development process**
  - Job analysis
  - Development of job-specific screens
  - Training of evaluators
  - Testing incumbents
  - Implementation

# Questions?

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