Medical Examinations and the Workplace: When are they Legal, Medically-Correct and Worthwhile for the Company and the Workers?

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Spring Occupational Safety & Health Committee Conference

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What is a Work-Based Medical Evaluation?

An historical assessment, physical/functional examination and laboratory/procedure evaluation of a worker or a person to whom a job offer has been extended; current employee to determine their functional work status, potential adverse work-related exposure effects.

Additional purposes may include assessment of personal risk factors and identification of health promotion needs.
Why Do Exams?

- Assure health
- Enhance productivity
- Meet regulations
- Avoid liability
- Contain WC, HB, STD, LTD costs
- Reduce absenteeism and associated costs
- Changing personal and occupational health risks
Obesity Trends* Among U.S. Adults
(*BMI ≥ 30, or about 30 lbs. overweight for 5’4” person)

1990

1998

2006

Potential Effects of Obesity

- Increased asthma severity (Taylor et al, 2008)
- GERD (Choi et al, 2008; El – Sorag et al, 2007)
  - High correlation with IPF (Raghu et al, 2006; Salviolo et al, 2006)
  - Highly related to asthma, chronic cough, hoarseness (Multiple References)
- Musculoskeletal disorders (the “worn out employee”)

Breathless in the Workplace

• Increasing WC claims for aggravation of smoking-induced respiratory problems
• Overall population increase in RAD and AR
• Diesel, nanotechnology, infectious diseases, flavorings, etc.
Popcorn Workers Lung (Diacetyl?)

- There are numerous substances and conditions (e.g., heating) involved in the manufacture of MW pop-corn; specifically various particulates (oil/grease and salt) and numerous volatile organic compounds (over 100 VOCs) have been identified by the lead governmental agency, NIOSH in this research effort (Kullman, 2005).

- It is unclear whether diacetyl is the actual etiologic agent in whole or, part or is simply an indicator of exposure (OSHA, 2003; Harber, 2006; Hubbs, 2002).
Health Hazards on the Horizon (Nanotechnology)

Figure 2.1. Length scale showing the nanometre in context. The length scale at the top ranges from 1m to $10^{-9}$ m, and illustrates the size of a football compared to a carbon 60 ($C_{60}$) molecule, also known as a buckyball. For comparison the world is approximately one hundred million times larger than a football, which is in turn one hundred million times larger than a buckyball. The section from $10^{-7}$ m (100 nm) to $10^{-9}$ m (1 nm) is expanded below. The lengthscale of interest for nanoscience and nanotechnologies is from 100 nm down to the atomic scale - approximately 0.2 nm.

[Source: Royal Academy of Engineering, Nanoscience and nanotechnologies, July 2004]
Types of Occupational Medical Evaluations

• Exposure driven (medical monitoring and surveillance)
• Placement
  – Initial hire
  – Periodic fitness for duty – employees with difficulties
  – Occupational and non-occupational RTW
• Regulatory required (PPE, HAZWOPER, DOT, FAA)
• Infectious disease control
Types of Occupational Medical Evaluations (Cont’d)

- Legally-focused (IMEs for WC, FMLA, STD, LTD)
- Health promotion for personal/occupational health risk factor identification
- Health care cost containment in disease management
  - Separating job risk from personal risk
  - NIOSH, OSHA, DHHS Approach
  - BLS aggravation, contribution
How Do Physicians Determine?

- Inexact guesses, based on:
  - Science (?) (literature, scientific studies)
  - Consensus (?) (published position paper)
  - Experience (?) (limited, anecdotal, biased)

- If we are honest, most risk assessment in real patient evaluations is based on the anecdotal EXPERIENCE of the physician
Risk: Legal Standard

Americans with Disabilities Act

- Employer may require that the worker **Not** pose a **direct threat to Self or Others** High Probability (not clearly defined) of specific Substantial Harm (not ↑ symptoms) that is imminent (< 3 months, not future)
- Based on **Objective Medical Evidence** related to the particular individual
- Law & definitions will differ in different countries
What is Legal?

- Meet regulation, conduct business
- Maintain safety and health
- Virtually all medical history is fair game
- No such thing as a “work-related” medical test/procedure
What is Not Legal

- Letting local ESH and HR staff “play doctor”
- Mixing medical records with other HR/ESH records
- Not maintaining duration or records confidentiality
- Treating everyone with a disease or condition group in an identical fashion
- Using unreliable imprecise, non-predictive tests (“snake-oil” products)
Risk: Probability under ADA

- As expressed in patient evaluations, or in laws, semi-quantitative
- "Low", "Moderate", and "High" risk, definitions **not** clearly stated
- Inexact guesses

High = Probable direct threat (usually, if significant harm is imminent)
Moderate = Possible direct threat (usually not)
Low = Remote chance of direct threat (rarely)
Cardiology: Return to Work Post - MI

• “Following both myocardial infarction and myocardial revascularization, symptomatic and functional improvement correlate poorly with the return to work and resumption of pre-illness lifestyle, with psychosocial status appearing as a more important determinant.”

Possible Examination Sites

- Local practitioner/NP/PA
- On-site mobile vans
- On-site provider (MD, PT, PN, Med Tech, PA)
- Clinic based
- Hospital based
What is the Magic Number for Exam Periodicity?

Traditional approach – annual or per regulatory requirements where applicable

New approach -- functional data for decision making (and regulatory)
What is the Magic Combination of Exam Components?

Traditional approach -- multiphasic screening (SMAC, CBC, PFTs, visual, audio, CXR, urine, Hx, PE)

New approach -- functional information and exposure specific assessment (functional physical assessment and biological monitoring)

Tiered structured (age, risk factors such as smoking, etc.)
Recent Pre-Employment Evaluation Study (Moshe et al, 2008)

WC Workers and Laborers

<table>
<thead>
<tr>
<th>Type of Evaluation</th>
<th>Restriction Rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>- OP examination</td>
<td>2.1</td>
</tr>
<tr>
<td>- GP exam with OP MR Review</td>
<td>1.2</td>
</tr>
<tr>
<td>- OHQ with OP Review</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Highest Restriction Rates

- 50 yo and higher (CV and MS) 3.6
Decisions, Decisions, Decisions (The Real Value in Medical Examinations)

- Right person for the job without increased, significant, near-term, material harm/injury
- Time away from work
- Restrictions
- Reaching MMI/MMR
- Individual and group trend analysis
Decisions, Decisions, Decisions (The Real Value in Medical Examinations) — (Cont’d)

- Diagnostic Criteria
- Evidence-based treatment protocols
- INFORMATION THAT MANAGEMENT CAN AND WILL USE
Real World Data on MDs Certifying Disability


- **Survey:**
  - 184 Internists and FPs (Random Sample, RS) (53% of 347), and
  - 76 “Neighborhood Health Center” (NHC) MDs (76% of 100)

- Physician **willingness to exaggerate** clinical data to help a patient he/she thought was deserving of disability
  - 39% of Random Sample MDs
  - 56% of NHD MDs
Similar to Prior Study

- 87% of cases in which primary care physicians could not justify “sick-listing” certification, a certification was issued anyway.
Medical Evaluations – The Right "Flow Process"

- Approach – job specific functionality
- Decision criteria - medical standards
- Managerially “doable” - preset restrictions/RJAs
- Systems integrated
  - Real time designations
  - Real time communication
  - Real time decisions
  - Real time oversight
  - Real time expert validation
- Regulatory compliant/evidence-based - ADA, FMLA, OSHA, EPA, DOT, ACOEM
About SOMA

- Celebrating 25 years, founded in 1983
- Nationally recognized staff
  - Industry, Regulatory, Research and Academic Experience
- Advanced information technology solutions
- State-of-the-art equipment and facilities
- Evidence-based practices
  - Occupational Health and Ergonomics
  - Industrial Hygiene and Toxicology
  - Safety
Sample Utility Industry Experience

- Con Edison
- Verizon
- Brooklyn Union Gas
- Insurance group
- Houston Power and Light
- Detroit Edison
- Ford Motor Powerhouse
- BASF Powerhouse
- Various Midwest power houses
Substantive Utility Industry Experience

- Electrocutions/burns
- Hazardous exposures
- Infectious disease
- Security
- Health risk assessment
- Medical standards

- Evaluate exposures
  - Solvent
  - Gas
  - Asbestos
  - Carbon Monoxide
  - Noise
SOMAVIP: How We Do It

• Medical standards for job classes
• Examination Program
• Web-based exam tracking and notification system-SOMAVIP-OH
• Medical review by occupational health specialists for all exams
• Follow-up by occupational health specialists for abnormal exams
Medical Standards for Job Classes

• Specific job classes for defined work
• Based on job descriptions and field analysis
• Describe in terms of functional categories
• Job functions are ranked according to demand level
Functional Categories

- Standing sitting
- Special senses – (vision, hearing, tactile, taste/smell)
- Mental activities – (attention/cognition, social interaction)
- Aerobics – (cardiovascular/respiratory function)
Functional Categories (cont’d)

- Physical forces – (lift/carry, push/pull)
- Lower extremity functions – (postures/balance)
- Locomotion – (walk, climb, jump, run)
- Upper extremity functions – (movement, coordination)
- Back/neck postures – (twisting/turning)
Functional Categories (cont’d)

• Environmental conditions – (outdoor/indoor extremes)
• Work schedule – (shifts/hours)
• Medical conditions (includes special regulatory requirements as applicable)
Functional Ranks

- Rank 1 – Most demanding
- Rank 5 – Least demanding
  - 100% (continuous)
  - > 50% < 100% (prolonged)
  - 25% - 50% (frequent)
  - < 25% (infrequent)
**MEDICAL STANDARD MATRIX**

**Patient Name:**

**Exam Date:**

**Job Class MS6: Rail Yard Switchman**

**Job Summary:** Throws switches, couples/uncouples rail cars, rides rail cars or walks near moving trains, and other tasks for trains or blocks of cars (cuts) to ensure safe and efficient switching.

**Length of a Normal Shift (in Hours):** 8-12 continuous hours/day, 5-6 consecutive days

**ESSENTIAL JOB FUNCTIONS**

**COMMUNICATE**
- **Obtains & reviews switch lists:** Involves talking to the other crewmembers to discuss the work rail car cuts to be made.
- **Compares load list to available rail cars.**
- **Communicates with switch crew:** Involves using a two-way radio, light signals, and/or hand signals to convey tasks and activities.

**OPERATE**
- **Throws switches to align tracks:** Involves lifting, pulling and pushing switch levers to direct cars toward their intended direction or track.
- **Couples multiple units (engines) or cars.**
- **Ties and releases hand breaks.**
- **Cuts cars by pulling cut lever.**
- **Checks and adjusts or opens knuckles.**
- **Checks air and brake position.**
- **Uses heavy bulky tools such as: sledge hammer and wrenches.**
- **Laces air hoses.**
- **Shovels rock and dirt.**
- **Climbs ladders and stairs on rail equipment.**

**EXAMINER: please complete column V.**

<table>
<thead>
<tr>
<th>I. Functional Categories</th>
<th>II. Rank</th>
<th>III. Job-Specific Data</th>
<th>IV. Requirements</th>
<th>V. Does NOT Meet Requirements (Check those that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Physical Forces (lift, carry, push/pull)</td>
<td>2</td>
<td>Operate: Max. solo lift 75 lbs.; Max. push/pull 75 lbs.</td>
<td>Arms, legs, neck, back ROM, strength, endurance for moderate lifting (F), push/pull (P)</td>
<td>[ ]</td>
</tr>
<tr>
<td>B. Lower Extremity (postures, balance - squat, stoop, crouch, etc.)</td>
<td>3</td>
<td>Operate: Crawl, squat, stoop, kneel, crouch to operate equipment; Leg balance; Work at heights; Moving surfaces</td>
<td>Leg ROM, strength, endurance for postures, balance (F)</td>
<td>[ ]</td>
</tr>
<tr>
<td>C. Locomotion (walk, climb, jump, run)</td>
<td>2</td>
<td>Operate: Walk, run (short distances), climb to board and operate equipment</td>
<td>Back and leg ROM, strength, endurance for walking (P), climbing (I)</td>
<td>[ ]</td>
</tr>
<tr>
<td>D. Upper Extremity (movement, coordination - grip/grasp, repetition, reaching, etc.)</td>
<td>3</td>
<td>Operate: Reaching, shoveling; Grip/grasp to handle switches, brakes, hoses, knuckles, climb stairs and ladders.</td>
<td>Arm ROM, strength, endurance for arm use (F)</td>
<td>[ ]</td>
</tr>
<tr>
<td>E. Back/Neck (Postures (bending, twisting/turning)</td>
<td>2</td>
<td>Operate: Twist/bend back/neck to operate equipment</td>
<td>Back/neck ROM, strength, endurance for bending, twist/turning (P)</td>
<td>[ ]</td>
</tr>
<tr>
<td>F. Standing/Sitting</td>
<td>2</td>
<td>Operate: Stand/sit to perform tasks</td>
<td>Leg and back strength, endurance for standing (P), sitting (I)</td>
<td>[ ]</td>
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<td>G. Special Senses (visual, hearing, touch, taste-smell)</td>
<td>3</td>
<td>Operate, Communicate: Perform tasks, recognize auditory signals, travel to locations</td>
<td>Vision, Distant vision correctable to 20/40 in better eye; Horizontal field of vision minimum 125 degrees total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Hearing</td>
<td>Speech, Warning Sounds: 40 dB @ .5,1,2 kHz Better Ear</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Tactile</td>
<td>Tactile: Temperature Changes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Taste-Smell</td>
<td>No Requirements</td>
<td></td>
</tr>
<tr>
<td>H. Mental Activities</td>
<td></td>
<td>Operate, Communicate: Work on/about moving equipment</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Attention/Cognition</td>
<td>LOC risk (N/D/C) low; verbal/visual analysis, judgment (F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Social Interaction</td>
<td>No active psychosis; group work (F)</td>
<td></td>
</tr>
<tr>
<td>I. Aerobic</td>
<td>3</td>
<td>Operate: Physical work in variable outdoor conditions</td>
<td>Moderate: Cardiac IA; ATS Grade 0</td>
<td></td>
</tr>
<tr>
<td>J. Environment (ambient conditions, environmental factors)</td>
<td>1</td>
<td>Operate: Outdoor variable and extreme conditions</td>
<td>Outdoor Extremes (C)</td>
<td></td>
</tr>
<tr>
<td>K. Work Schedule</td>
<td>2</td>
<td>All: Up to 12 hours/day, 5-6 consecutive days</td>
<td>Overtime Requirement Restricted Leave Policy</td>
<td></td>
</tr>
<tr>
<td>L. Medical Conditions/ Special Regulatory Requirement</td>
<td>3</td>
<td>All: Medical conditions stable; pregnancy considerations (ACOG)</td>
<td>No undiagnosed or unstable condition; no medication effect; potential pregnancy limits</td>
<td></td>
</tr>
</tbody>
</table>

Examiner Signature ________________________ Date __________

MEETS ALL STANDARDS _______ YES _______ NO (if NO, check limitations above)

KEY:

C = 100% of shift
P = >50%, less than 100%
F = 25-50% of shift
I = <25% of shift

ACOG = American College of Obstetrics pregnancy guidelines
ATS = American Thoracic Society breathlessness scale
LOC = loss of consciousness
N/D/C = neurologic, diabetic, cardiac
NYHA = New York Heart Association functional scale
ROM = range of motion

RANK STRUCTURE:

Rank 1 - most demanding/maximal capacity

Rank 3 – average demand/capacity

Rank 5 - least demanding/minimal or no capacity
Examination Program

- Standardized examination forms ("packet")
- PDF Format
- Systematic process for various exam types
- Results (forms containing personal health information) are separate from other personnel documents
Web-based Exam Tracking and Notification System-SOMAVIP-OH

- Schedule notification & tracking
- Automated form creation (PDF)
- Status management with notes
- Automated Email notifications
- Updated online resources: Manuals, Forms, Bulletins
Medical Review

• Quality checks against medical standards
• Review by trained specialists for every examination
• Comparison with all individual and group medical data
SOMAVIP-OH

Medical Examination and Quality Assurance Process

- Schedule Exam
- Clinic Fax Received
- Review Against Protocol
- Quality Assurance Checks
- Status Update

The Result

Timely, proven cost-efficient, legal, medically-appropriate recommendation
SOMA Review

- Clinic results received via e-fax (electronic faxing with privacy protection)
- Exam evaluated against medical standards
- Recommendation provided
- Email update for each action
- Abnormal exams require further clarification
Occupational Medical Evaluation – Medical Case Review Criteria

• Identification of "problem cases" for potential evaluation:
  – Represented by an attorney
  – Significant prior claim history
  – Inappropriate injury behavior/unsupported pain
  – Severe trauma/fracture
  – Noncompliance with treatment plan
  – Treatment duration - more than 4 Physicians Visits
  – Specialist involvement
Occupational Medical Evaluation – Medical Case Review Criteria (cont’d)

• Common "Problem" Diagnoses
  – Recurrent Low Back Condition(s)
  – Reflex Sympathetic Dystrophy
  – Myofascitis/Myofascial Syndrome
  – Spondylolisthesis/Spondylitis
  – Scoliosis
  – Carpal Tunnel Syndrome
  – Thoracic Outlet Syndrome
Key Things To Do in Any Medical Examination/Evaluation Case Management Effort

• What types of determinations
• Which employee groups
• Medically-justifiable employee/case selection criteria
• Voluntary vs. required
• Establish essential job functions and corresponding medical standards
Key Things To Do in Any Medical Examination/Evaluation Case Management Effort (cont’d)

- Select evidence-based criteria for diagnosis, impairment, time-off, work-relatedness, treatment/rehab regimens
- Utilize simple, minimalistic policies, procedures, forms
- Establish communication, tracking, scheduling, action, plan compliance (manual vs. automated)
Key Things To Do in Any Medical Examination/Evaluation Case Management Effort (cont’d)

- Select provider network by outcome, communication, program adherence, cost
- Tiered structured, provide network accepted, decision criteria
- Standardize forms, timing of events and local company and provider performance
Key Things To Do in Any Medical Examination/Evaluation Case Management Effort (cont’d)

• Establish internal/external management system/staff
• Establish internal/external medical expertise for “complex/abnormal” (80/20 rule)
Thank You For Your Interest

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