

# 2010 Military Health System Conference

## Models for Reintegration of Wounded Personnel: Occupational Health Model vs. Pure Medical Model

Sharing Knowledge: Achieving Breakthrough Performance

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# Overview

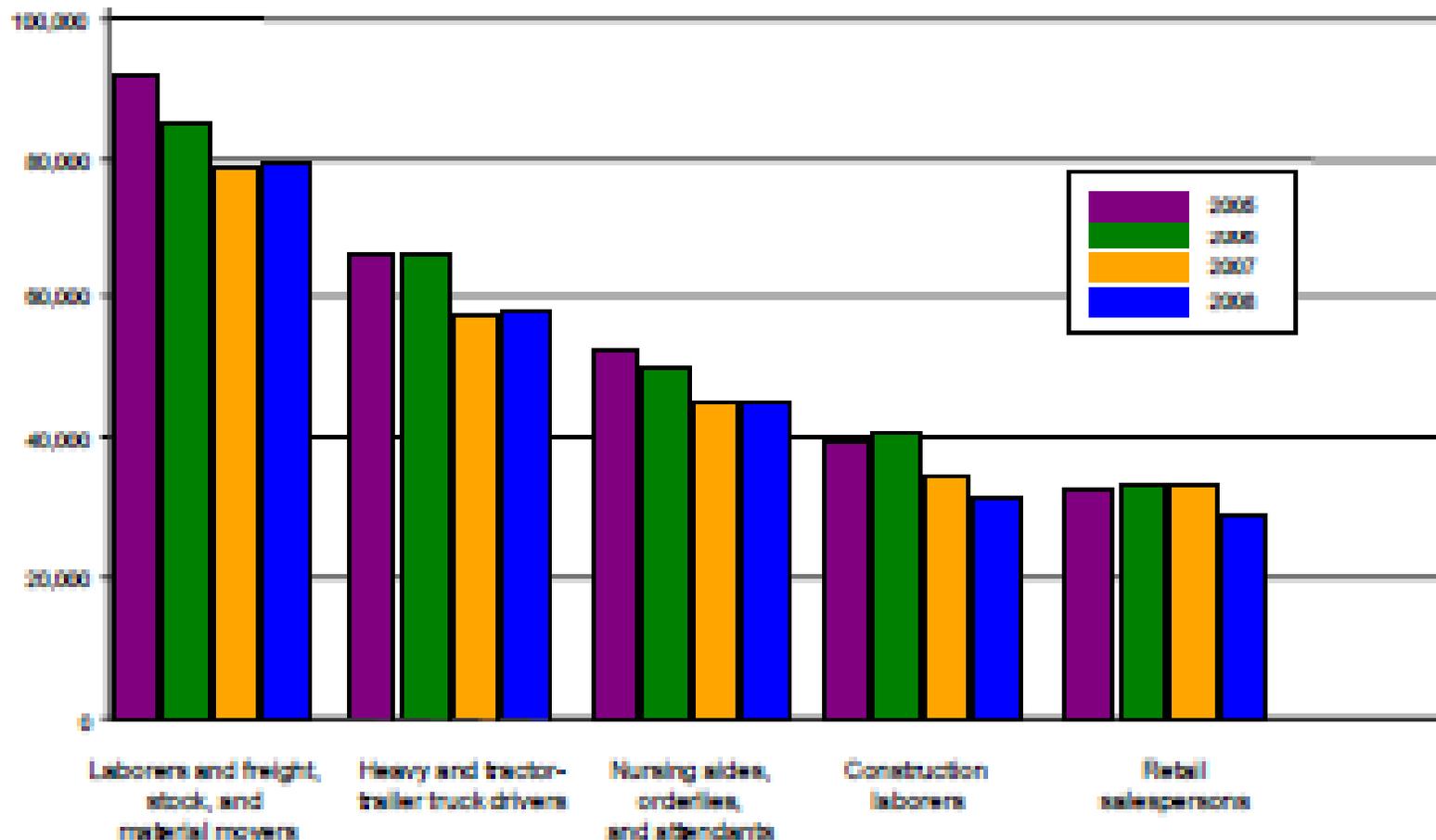


- Limited to musculoskeletal injuries.
- Definitions, assumptions and the legal basis.
- Current programs.
- Assessments.
- DoD's physical rehabilitation programs.
- Future directions.

# Relevance to Hospitals



- Injuries with lost-work days:



# Relevance to the MHS



- Operation Iraqi Freedom:
  - 17,723 wounded and returned to duty
  - 13,910 wounded and not returned to duty
- Operation Enduring Freedom
  - 2,018 wounded and returned to duty
  - 2,811 wounded and not returned to duty
- “Returned to duty” within 72 hours
- 1,286 amputations
- Musculoskeletal injuries most frequent deployment-limiting condition and diagnosis requiring medical evacuation from theater.

# Definitions



- Impairment versus disability
- Accommodation
- Physical and Occupational Rehabilitation
- Fitness-for-duty
- Maximum medical improvement
- Qualification
- Requirement versus standard

# Assumptions



- Deployment defines physical requirements
  - Permanent limited duty an option
  - Environment defines requirements
  - Personnel determines retention
- Fitness for duty standard
  - DoD accession standards
  - Service-specific and program-specific
  - COCOM requirements
- One-year recovery
  - Consistent across rehabilitation programs
  - Epidemiological basis

# Fitness for Duty



- Current standards
  - Assumptions of function (legs for running)
- Future standards
  - Function-based
  - Medical equipment sustainment when deployed
- Case-by-case based upon
  - Job requirements
  - Physical capabilities

# Legal Basis



- **Workers' Compensation**
  - Applies only to DoD Civil Servants
  - Concept applies to all DoD
- **Rehabilitation Act**
  - Superseded by Americans with Disabilities Act
- **Americans with Disabilities Act**
  - Employ the employable

# Pure Medical Model



- Treatment of the injury.
  - Limited activities
  - Immobilization
  - Surgical intervention
- Asymptomatic.
  - No complications
  - Complications resolved
- Not correlated to pre-injury activity levels.

# Occupational Medicine Model



- Begins with medical model to near maximum medical improvement.
- Assess functional requirements of the job.
- Assess member's current functional capacity.
- Rehabilitation toward maximum functional capability.
- Early intervention in partial or total permanent disability cases.
  - Early assessment, early decisions.

# Factors in Return to Work



- Fixed factors
  - Age
  - Sex
- Variable factors
  - Positive expectation
  - Early light duty work
- Education level
- Psychosocial
  - Fear-avoidance



# Rehabilitation as a System



- Member and Family
  - Training family members to support recovery
- Case Managers
  - Facilitate and coordinate complex system
- Comprehensive Assessment
  - Impact of other injuries on rehabilitation process
- Early return to duty
- Advanced rehabilitation – CDR Reed

# Rehabilitation - Overview



- Rehabilitation
  - Advances in Rehabilitation
  - Warrior Medical Conditions
  - General Rehabilitation
  - Centralized/Advanced Rehabilitation
  - Future Considerations

# Advances in Rehabilitation



- General rehab principles still apply
- Application of principles have advanced
- Treatment continuum has evolved due to advances in technology (e.g., injury prevention to complete outcome)
- Business principles and approach to care has evolved:
  - Centralized treatment centers (specialized care)
  - Consolidated business practices (product lines)
  - Patient-centered care

# Advances in Rehabilitation



- Clinicians are better able to:
  - Think “outside the box”
  - Predict environmental challenges
  - Accurately simulate any situation
- More consistent “carry over” is noted between treatment sessions:
  - Multiple system integration
  - Able to vary the degree of challenge for more seamless transition throughout the treatment continuum

# Warrior Medical Conditions



- Musculoskeletal Disease Non-Battle Injury (DNBI)
- Amputations/Limb Salvage
  - Vascular Injuries
  - Peripheral Neuropathies
  - Gun Shot Wounds (GSW)
  - Crush Injuries/Compartment Syndrome
  - Infection

# Warrior Medical Conditions



- Traumatic Brain Injury (TBI)
  - Various Degrees (mild (mTBI) to severe)
  - Vestibular Disorders
- Spinal Cord Injury (SCI)
- Burns
- Poly-Trauma
  - Brachial Plexopathies
  - Fractures
  - Bone grafts, prolonged limited weight bearing statuses
  - Wound Care

# General Rehabilitation



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# Musculoskeletal DNBI



- The American Journal of Preventive Medicine identified that musculoskeletal injuries impose the greater-ongoing impact on the health and readiness of the U.S. Armed Forces than any other category of medical complaint during times of peace and war.
- In 2006, Defense Safety Oversight Council recommended that the greatest reduction of lost duty days due to injuries across the Department of Defense may be achieved via mitigation efforts focused specifically on sports and physical training related injuries.

# Musculoskeletal Injuries



- Injury Prevention and Early Intervention
  - Initial phase in the treatment continuum
  - USMC Sports Medicine Injury Prevention (SMIP) Program:
    - Originated at recruit training centers
    - Export to operational forces
    - Certified Athletic Trainers
  - Sports Medicine And Rehabilitation Teams (SMART) Clinics:
    - Direct access
    - Geographic location, collocate with operational forces

# Centralized/Advanced Rehabilitation



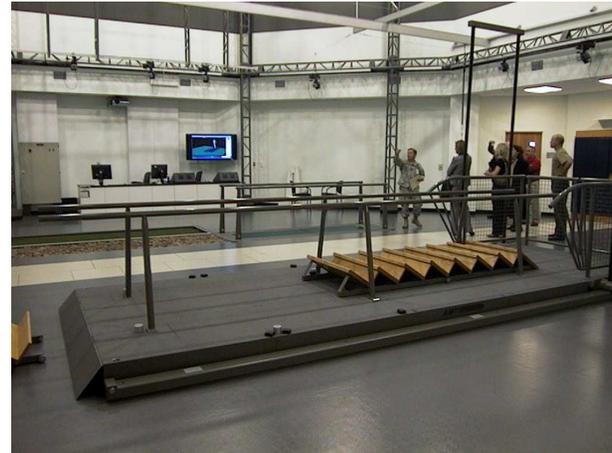
- U.S. Armed Forces Amputee Patient Care Program
  - Walter Reed Army Medical Center (WRAMC)- MATC
  - Brooks Army Medical Center (BAMC)- CFI
  - Naval Medical Center San Diego- C5
- Advances include:
  - On-site gait analysis
  - On-site prosthetic development/revisions
  - Multi-disciplinary care model
  - Customized treatment programs
  - Comprehensive rehabilitation to include high level, dynamic balancing activities and simulation training

# Centralized/Advanced Rehabilitation



- Outcomes: 8-9 month recovery time (wound closure to reintegration within civilian life or return to duty)
- Results:
  - 16.5% return to duty rates for OIF/OEF.
  - 2.3% during Vietnam conflict.

# Amputee Care



# Limb Salvage



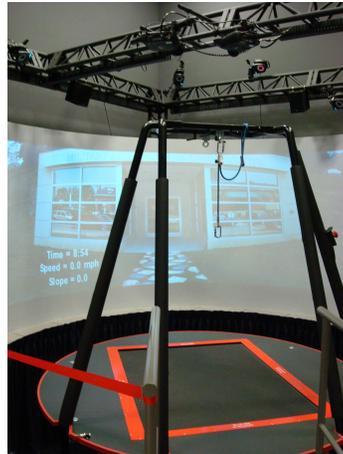
- Multidisciplinary approach to the complete process
- Incorporates social support (family involvement)
- At a minimum, it is 12-months before discussions to amputate a limb are considered (generally longer for neurologic involvement)
- Often more involved, slower rehab process once decision to have an amputation is made
- Decision usually the result of poor bone healing, nerve loss, and/or pain

# Vestibular Rehabilitation



- Often associated with poly-trauma
- Complex, multi-system disorder
- Subtle to extreme symptoms
- Often not detected at first (musculoskeletal injury more obvious)
- Difficult to isolate and treat effectively without proper diagnostics and equipment
- Specialized training required
- Multidisciplinary approach to care
- Centralized treatment centers are developing

# Vestibular Rehabilitation



# Future Considerations



- What phases in the treatment continuum does your facility impact or could impact more?
- What is your patient mix?
- What is your provider mix? How are you utilizing your providers?
- Do you have the ability to evaluate and treat from a multidisciplinary perspective? What method of communication do your providers use?
- What is your equipment inventory? What can/can't you live without?
- How are you utilizing your space?
- What cases challenge you most often? Why?
- Assessments – CDR McMillan

# Assessments



- Early assessment to identify those expected return-to-duty early in the continuum.
- Route unlikely to long-term rehabilitation early
- Borderline cases managed according to patient's preference
- Coordinated approach and comprehensive assessment via team approach

# Return to Work



- Factors affecting employment
  - Amount of time off work.
  - Sex
  - Physical requirements of the job
  - Psychosocial factors
- Temporary jobs
- Light duty in permanent job

# Functional Capacity Examination (FCE)



- Comprehensive (100+ page procedure manuals)
- Validity
  - Multiple studies to assess validity of FCE in predicting return to work.
  - 80+% prediction in some studies
  - Time-off-work and sex stronger predictors than FCE
- Assessment of sub-maximum effort
- Valuable tool but not conclusive

# Interim Employment



- Employment as therapy
  - Multiple studies find time-off-work as strong predictor of successful return to work.
  - After 12 weeks RTW drops to 50%
- Medical and Personnel roles
- Duration limitation
- Disposition
- Supported Employment benefit

# Transition to Long-Term Rehabilitation



- Multi-trauma or multi-extremity cases
- Discharge and transfer to VA
  - Early identification
  - Political considerations
- Continued treatment in MTF paid by VA
- Integration of electronic health record becomes seamless.

# Summary



- Medical and Occupational models each have their roles.
- Rehabilitation changing rapidly, personnel systems must adapt.
- Medical and personnel work together to employ the employable.
- DoD is evolving state of the art rehabilitation systems.



# Questions