

The effect of the introduction of a Standardized Fitness-for-Duty Evaluation of Commercial Truck Drivers on the incidence of Low Back Injuries and Workers' Compensation Cost

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Impact of the health issues in truck drivers on the society

- Nearly 15 million truck drivers
(Saltzman & Belzer, 2007)
- Truckers remain both a highly vulnerable and a seriously underserved working population with the high prevalence of chronic health problems
- Low health care access and use
(Layne, Rogers, & Randolph, 2009; Reed & Skeeters Cronin, 2003; Solomon, Doucette, Garland, & McGinn, 2004)

Commercial Driver Medical Qualification

- The Motor Carrier Safety Act of 1935 granted the Interstate Commerce Commission (ICC) the authority to require medical certifications for CMV operators but not physical examinations
- A physical examination and Certificate of Physical Evaluation were not required until January 1, 1954
- The U.S. Department of Transportation (DOT) was created by an act of Congress in 1970
 - Since October 1999, motor carrier safety was transferred to the FMCSA which reports directly to the secretary of the DOT

Commercial Driver Medical Qualification

- Initial criteria from June 7, 1939:
 - Good physical and mental health
 - Good eyesight
 - Adequate hearing
 - No addiction to narcotic drugs
 - No excessive use of alcoholic beverages or liquors
- Tighter medical qualification standards were announced 30 years later, on June 7, 1969
- New form was proposed in 1998 and the Final Rule was published on October 5, 2000

Medical Examination Report form

- The form includes one page each for:
 - Medical history
 - Testing
 - Recording of the physical examination
- Instructions to examiners, the role of the commercial driver, and inclusion of the advisory criteria bring the entire document to eight pages

Problems with the form

- Over 15 % were incomplete
- Over 40% had entries that were not legible
- Data storage
- Drivers, who did not meet the regulations and medical guidelines, were given DOT certificates
- Previous DOT exam information not available for review
- Drivers did not always give consistent information from one exam to the next

DOT form

Medical Examination Report FOR COMMERCIAL DRIVER FITNESS DETERMINATION

555-22-1133

1 DRIVER'S INFORMATION							Driver completes this section.	
Driver's Name (Last, First, Middle) ...Wayne, John		Social Security No. 555-22-1133	Birthdate 10/04/1964 <small>MM/DD/YYYY</small>	Age 43	Sex <input checked="" type="checkbox"/> M <input type="checkbox"/> F	<input checked="" type="checkbox"/> New <input type="checkbox"/> Recertification <input type="checkbox"/> Follow-up	Date of Exam 10/05/07	
Address 123 1st St		City, State, Zip Code Springdale, AR 72762		Work Tel: Home Tel: (479) 555-1111		Driver License No. 1254854321	License Class <input checked="" type="checkbox"/> A <input type="checkbox"/> C <input type="checkbox"/> B <input type="checkbox"/> D <input type="checkbox"/> Other	State of Issue AR
2 HEALTH HISTORY								
Driver completes this section, but medical examiner is encouraged to discuss with								
Yes No <input checked="" type="checkbox"/> Any illness or injury in the last 5 years? <input checked="" type="checkbox"/> Head/Brain injuries, disorders or illnesses <input type="checkbox"/> Seizures, epilepsy <input type="checkbox"/> medication <input checked="" type="checkbox"/> Eye disorders or impaired vision (except corrective lenses) <input checked="" type="checkbox"/> Ear disorders, loss of hearing or balance <input type="checkbox"/> Heart disease or heart attack; other cardiovascular condition <input type="checkbox"/> medication <input type="checkbox"/> Heart Surgery (valve replacement/bypass, angioplasty, pacemaker) <input checked="" type="checkbox"/> High blood pressure <input type="checkbox"/> medication _____ <input type="checkbox"/> Muscular disease <input checked="" type="checkbox"/> Shortness of breath			Yes No <input type="checkbox"/> Lung disease, emphysema, asthma, chronic bronchitis <input checked="" type="checkbox"/> Kidney disease, dialysis <input checked="" type="checkbox"/> Liver disease <input checked="" type="checkbox"/> Digestive problems <input checked="" type="checkbox"/> Diabetes or elevated blood sugar controlled by: <input type="checkbox"/> diet <input type="checkbox"/> pills <input type="checkbox"/> insulin <input checked="" type="checkbox"/> Nervous or psychiatric disorder, e.g., severe <input type="checkbox"/> medication _____ <input checked="" type="checkbox"/> Loss of, or altered consciousness			Yes No <input type="checkbox"/> Fainting, dizziness <input checked="" type="checkbox"/> Sleep disorders, pauses in breathing while asleep, daytime sleepiness, loud snoring <input type="checkbox"/> Stroke or paralysis <input type="checkbox"/> Missing or impaired hand, arm, foot, leg, finger, toe <input type="checkbox"/> Spinal injury or disease <input checked="" type="checkbox"/> Chronic low back pain <input checked="" type="checkbox"/> Regular, frequent alcohol use <input checked="" type="checkbox"/> Narcotic or habit forming drug use		
For any YES answer, indicate onset date, diagnosis, treating physician's name and address, and any current limitation. List all medications (including over-the-counter medications) used regularly or recently. Comments: Test Comments of/has/dur/has/uk								

I certify that the above information is complete and true. I understand that inaccurate, false, or missing information may invalidate the examination and my Medical Examiner's Certificate.

Driver's Signature

10/05/07

Date

Medical Examiner's Comments on Health History (The medical examiner must review and discuss with the driver any "yes" answers and potential hazards of medications, including over-the-counter medications, while driving.)
 Comments: Test Comments

DOT form page 2

TESTING (Medical Examiner completes Section 3 through 7)

3. VISION

Standard: At least 20/40 acuity (Snellen) in each eye with or without correction. At least 70° peripheral in horizontal meridian measured in each eye. The use of corrective lenses should be noted on the Medical Examiner's Certificate.

INSTRUCTIONS: When other than the Snellen chart is used, give test results in Snellen-comparable values. In recording distance vision, use 20 feet as normal. Report visual acuity as a ratio with 20 as numerator and the smallest type read at 20 feet as denominator. If the applicant wears corrective lenses, these should be worn while visual acuity is being tested. If the driver habitually wears contact lenses, or intends to do so while driving, sufficient evidence of good tolerance and adaptation to their use must be obvious. Monocular drivers are not qualified.

Numerical readings must be provided.

ACUITY	UNCORRECTED	CORRECTED	HORIZONTAL FIELD OF VISION
Right Eye	20/	20/	Right Eye -
Left Eye	20/	20/	Left Eye -
Both Eyes	20/	20/	-

Applicant can recognize and distinguish among traffic control signals and devices showing standard red, green, and amber colors? Yes No

Applicant meets visual acuity requirement only when wearing:
 Corrective Lenses

Monocular Vision: Yes No

Complete next line only if vision testing is done by an ophthalmologist or optometrist

Date of Examination _____ Name of Ophthalmologist or Optometrist (print) _____ Tel No. _____ License No./State of Issue _____ Signature _____

4. HEARING

Standard: a) Must first perceive forced whispered voice > 5 ft., with or without hearing aid, or b) average hearing loss in better ear ≤ 40 dB

Check if hearing aid used for tests. Check if hearing aid required to meet standard.

INSTRUCTIONS: To convert audiometric test results from ISO to ANSI, -1 dB from ISO for 500 Hz, -1.0 dB for 1,000 Hz, -8.5 dB for 2,000 Hz. To average, add the readings for 3 frequencies tested and divide by 3.

Numerical readings must be recorded.

a) Record distance from individual at which forced whispered voice can first be heard.	Right Ear	Left Ear	b) If audiometer is used, record hearing loss in decibels. (acc. to ANSI Z24.5-1951)	Right Ear			Left Ear		
	Feet	Feet		500 Hz	1 000 Hz	2000 Hz	500 Hz	1 000 Hz	2000 Hz
				Average:			Average:		

5. BLOOD PRESSURE / PULSE RATE

Numerical readings must be recorded.

Blood Pressure	Systolic	Diastolic

Driver qualified if ≤ 140/90 on initial exam.

Pulse Rate	<input type="checkbox"/> Regular
	<input type="checkbox"/> Irregular

READING	CATEGORY	EXPIRATION DATE	RECERTIFICATION
140-159/90-99	Stage 1	1 year	1 year if <140/90. One-time certificate for 3 months if 141-159/91-99.
160-179/100-109	Stage 2	One-time certificate for 3 months.	1 year from date of exam if <140/90 -
>180/110 -	Stage 3	6 months from date of exam if <140/90	6 months if < 140/90 -

Medical examiner should take at least 2 readings to confirm blood pressure.

6. LABORATORY AND OTHER TEST FINDINGS

Numerical readings must be recorded.

Urinalysis is required. Protein, blood or sugar in the urine may be an indication for further testing to rule out any underlying medical problem.

URINE SPECIMEN	SP. GR.	PROTEIN	BLOOD	SUGAR

Other Testing (Describe and record)

DOT form page 3

7. PHYSICAL EXAMINATION

Height: _____ (inches) Weight: _____ (pounds)

The presence of a certain condition may not necessarily disqualify a driver, particularly if the condition is controlled adequately, is not likely to worsen or is readily amenable to treatment. Even if a condition does not disqualify a driver, the medical examiner may consider deferring the driver temporarily. Also, the driver should be advised to take the necessary steps to correct the condition as soon as possible particularly if the condition, if neglected, could result in more serious illness that might affect driving.

Check YES if there are any abnormalities. Check NO if the body system is normal. Discuss any YES answers in detail in the space below, and indicate, whether it would affect the driver's ability to operate a commercial motor vehicle safely. Enter applicable item number before each comment. If organic disease is present, note that it has been compensated for.

See *Instructions to the Medical Examiner for guidance.*

BODY SYSTEM	CHECK FOR:	YES	NO	BODY SYSTEM	CHECK FOR :	YES	NO
1. General Appearance	Marked overweight, tremor, signs of alcoholism, problem drinking, or drug abuse.			7. Abdomen and Viscera	Enlarged liver, enlarged spleen, masses, bruits, hernia, significant abdominal wall muscle weakness.		
2. Eyes	Pupillary equality, reaction to light, accommodation, ocular motility, ocular muscle imbalance, extra ocular movement, nystagmus, exophthalmos, strabismus uncorrected by corrective lenses, retinopathy, cataracts, aphakia, glaucoma, macular degeneration.			8. Vascular System	Abnormal pulse and amplitude, carotid or arterial bruits, varicose veins.		
3. Ears	Middle ear disease, occlusion of external canal, perforated eardrum.			9. Genito-urinary System	Hernias.		
4. Mouth and Throat	Irremediable deformities likely to interfere with breathing or swallowing.			10. Extremities-Limb impaired driver may be subject to SPE certificate if otherwise qualified.	Loss or impairment of leg, foot, toe, arm, hand, finger. Perceptible limp, deformities, atrophy, weakness, paralysis, clubbing, edema, hypotonia. Insufficient grasp and prehension in upper limb to maintain steering wheel grip. Insufficient mobility and strength in lower limb to operate pedals properly.		
5. Heart	Murmurs, extra sounds, enlarged heart, pacemaker.			11. Spine, other musculoskeletal	Previous surgery, deformities, limitation of motion, tenderness.		
6. Lungs and chest, not including breast examination	Abnormal chest wall expansion, abnormal respiratory rate, abnormal breath sounds including wheezes or alveolar rales, impaired respiratory function, dyspnea, and cyanosis. Abnormal findings on physical exam may require further testing such as pulmonary test and/or x-ray of chest.			12. Neurological	Impaired equilibrium, coordination or speech pattern; paresthesia, asymmetric deep tendon reflexes, sensory or positional abnormalities, abnormal patellar and Babinski's reflexes, ataxia.		

COMMENTS:

Note certification status here. See *Instructions to the Medical Examiner for guidance.*

- Meets standards in 49 CFR 391.41; qualifies for 2 year certificate
 Does not meet standards
 Meets standards, but periodic evaluation required

Due to _____ driver qualified only for:

- 3 months 1 year
 6 months Other

- Wearing corrective lenses
 Wearing hearing aid
 Accompanied by a limb waiver or eye exemption
 Skill Performance Evaluation (SPE) Certificate
 Driving within an exempt intracity zone
 Qualified by operation of 49 CFR 391.64

Medical Examiner's Signature _____

Medical Examiner's Name (print) KONSTANTIN V. BERESTNEV, M.D.

Address: 4001 WAGON WHEEL RD., SPRINGDALE AR 72762

Temporarily disqualified due to (condition or medication): _____

Telephone Number (479) 725-3000

Return to medical examiner's office for follow up on _____

If meets standards, complete a Medical Examiner's Certificate according to 49 CFR 391.43(h). (Driver must carry certificate when operating a commercial vehicle.)

Introduction

- A job is the sum of its parts
- Medical certification determinations are the responsibility of the medical examiner
- U.S. DOT form instructs examiners to sign the form only if it is determined that the driver is able to perform driving and nondriving tasks as may be required
- Improperly loaded or inspected vehicle could cause accidents and affect the driving public

Aside from driving for many hours at a time drivers tasks are:

- load and unload freight
- crank dollies
- slide tandems
- pull 5th wheel pins
- couple and uncouple trailers
- secure loads with devices such as tarps or chains
- inspect the vehicle (pre- and post-trip)

Triad of Safety and Productivity with a Job-Matching Philosophy



Functional Testing/ Job matching

- Employers are responsible for ensuring that only medically qualified drivers are operating CMVs
- Employers use FCEs to assist in decision-making regarding appropriate job placement and return to work duty
- Job placement through capacity measurement sends a strong message that the company cares about worker safety

Regulatory aspects

- Matching a worker with the physical demands of their jobs complies with the Americans with Disabilities Act Amendments Act (ADAAA), the Age Discrimination in Employer Act and other regulations enforced by the Equal Employment Opportunity Commission
- When placing an employee, a disability may be more readily accommodated

Motor carrier's initiative

- In **2003**, a client trucking company incorporated a standardized fitness-for-duty evaluation of drivers in an effort to reduce the rate of low back injuries and associated workers' compensation costs
- Prior to this standardized evaluation, the company was using their own "lift test", which included dangerous tasks for the applicants to perform, such as "600# barrel roll test", etc.


Goal of the RoadReady study

- To evaluate the effectiveness of this intervention, which includes:
 - Regular DOT physical examination and
 - Comprehensive physical examination conducted by trained physical therapists (PT) specifically targeted at evaluating the lower back
 - Questionnaires
 - Manual muscle testing
 - Functional testing

Methods

- Web-based network of provider clinics was established
- DOT physicals done electronically
- 100% completion rate (DOT certificate can't be issued if the form is incomplete)
- The data is entered into, stored, and analyzed using web-based Road Ready applications

Electronic version of the form



MAIN MENU

....Wayne, John (555-22-1133)

Date of Exam: 11/06/2007 [Logoff ADMIN](#)

DOT Regulations: 49 CFR 391.41

Driver Exam

- Exam Information
- Vision
- Hearing
- Blood Pressure
- Lab Test
- Physical
- Signature Pages
 - Driver - Complete
 - Examiner - Incomplete
- Supplemental
 - Musculoskeletal
 - Dynamic/Cardio
 - Job Specific
- PREVIOUS EXAMS
 - 10/5/2007
 - 10/17/2007
 - 10/18/2007

- Exam Search
- Record Correction
- Reporting
- Administration

Physical Examination | **Instructions and Standard**

7. PHYSICAL EXAMINATION **Instructions to the Medical Examiner**

Body System BMI: Height: Weight:

The presence of a certain condition may not necessarily disqualify a driver, particularly if the condition is controlled adequately, is not likely to worsen or is readily amenable to treatment. Even if a condition does not disqualify a driver, the medical examiner may consider deferring the driver temporarily. Also, the driver should be advised to take the necessary steps to correct the condition as soon as possible particularly if the condition, if neglected, could result in more serious illness that might affect driving.

Check **YES** if there are any abnormalities. Check **NO** if the body system is normal. Discuss any YES answers in detail in the space below, and indicate, whether it would affect the driver's ability to operate a commercial motor vehicle safely. Enter applicable item number before each comment. If organic disease is present, note that it has been compensated for. See Instructions to the Medical Examiner for guidance.

Body System	Yes	No	Body System	Yes	No
1. General Appearance	<input type="radio"/>	<input checked="" type="radio"/>	7. Abdomen and Viscera	<input type="radio"/>	<input checked="" type="radio"/>
2. Eyes	<input type="radio"/>	<input checked="" type="radio"/>	8. Vascular system	<input type="radio"/>	<input checked="" type="radio"/>
3. Ears	<input type="radio"/>	<input checked="" type="radio"/>	9. Genito-urinary system	<input type="radio"/>	<input checked="" type="radio"/>
4. Mouth and Throat	<input type="radio"/>	<input checked="" type="radio"/>	10. Extremities - Limb impaired. Driver may be subject to SPE certificate if otherwise qualified.	<input type="radio"/>	<input checked="" type="radio"/>
5. Heart	<input type="radio"/>	<input checked="" type="radio"/>	11. Spine, other musculoskeletal	<input type="radio"/>	<input checked="" type="radio"/>
6. Lung and chest, not including breast examination	<input type="radio"/>	<input checked="" type="radio"/>	12. Neurological	<input type="radio"/>	<input checked="" type="radio"/>

Check for:

Marked overweight, tremor, signs of alcoholism, problem drinking, or drug abuse.

Comments

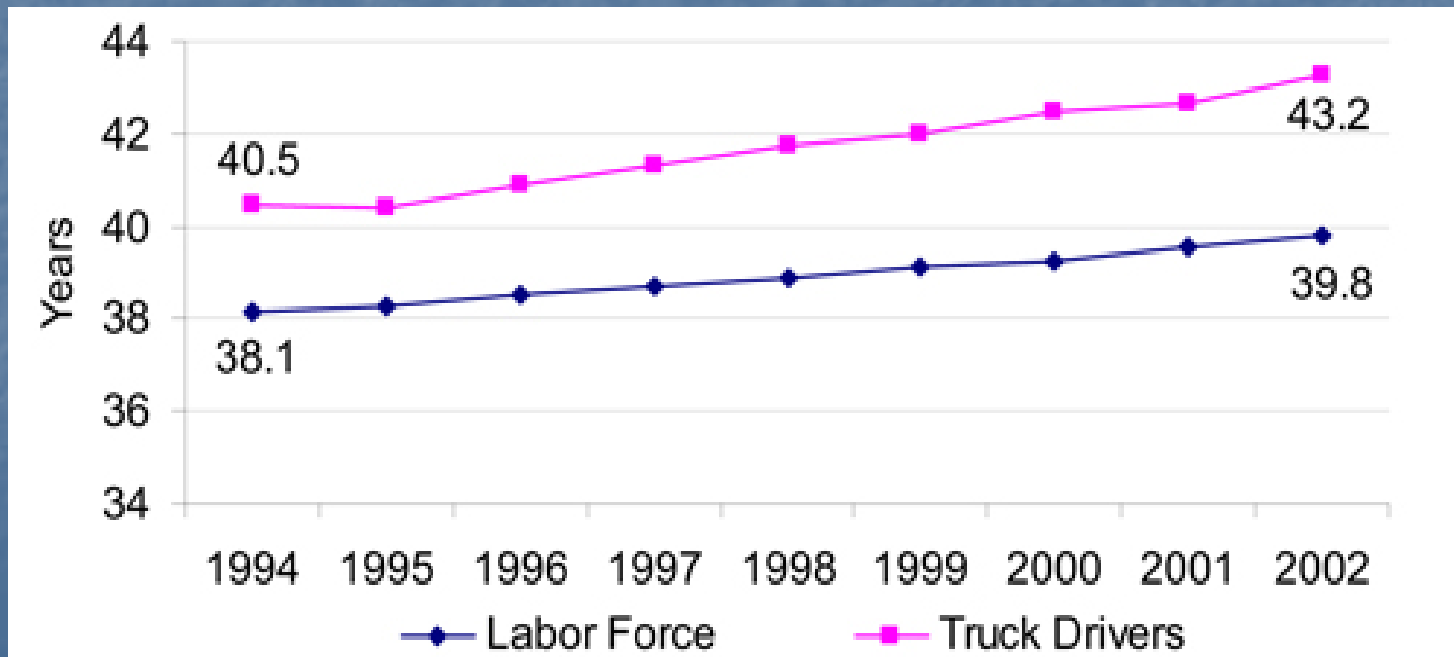
Methods

■ Study population

- The cohort included all truck drivers employed by one large nationwide trucking company:
 - In 1999 – 10569 in 2000 – 11103
 - in 2001 – 11431 in 2002 – 12138
 - in 2003 – 11808 in 2004 – 12318
 - in 2005 – 12497 in 2006 – 12825
- ages 20 to 89 with an average age in a 40-49 years old age group

Demographics

- Age - 20-89 in Road Ready database (avg.43.23)
- Average Age of the U.S. Labor Force and of Truck Drivers in the Transportation Industry



Gender and habits

- Male drivers >95%
- Female drivers <5%
- Estimated prevalence of smoking in truck drivers is 50.1%
- Nutrition/ Diet: needs may be met at roadside diners
- Exercises: inadequate
- Often spend days to weeks away from home
- Poor sleep habits

Body Mass Index Analysis

Age Group (Years)	≤25 Normal Range	26-29 Overweight	30-34 Obese	35-39 Severely Obese	≥40 Morbidly Obese	Totals
<20	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0
20-29	27.72% 1953	26.84% 1891	19.32% 1361	12.84% 905	13.28% 936	10.71% 7046
30-39	18.95% 3541	29.43% 5498	24.61% 4599	13.71% 2562	13.29% 2484	28.41% 18,684
40-49	15.77% 342	31.55% 6685	26.72% 5662	14.19% 3007	11.76% 2492	32.22% 21,188
50-59	15.94% 2274	33.69% 4806	27.68% 3948	13.05% 1862	9.63% 1374	21.69% 14,264
60-69	15.65% 652	35.56% 1481	28.45% 1185	13.28% 553	7.06% 294	6.33% 4165
70-79	19.13% 75	37.76% 148	26.02% 102	12.24% 48	4.85% 19	0.60% 392
80-89	0.00% 0	50.00% 11	36.36% 8	13.64% 3	0.00% 0	0.03% 22
ALL	18.01% 1,842	31.2% 20,520	25.64% 16,865	13.59% 8,940	11.55% 7,599	100% 65,766

Effect of BMI on Lifetime DM Risk

- Overweight and especially obesity substantially increases lifetime risk of diagnosed diabetes
- There is a 37-1/2% lifetime risk for diabetes in the obese individual, BMI 30-35 (Diabetes Care 30:1562–1566, 2007)
- There is a 50.5% lifetime risk for diabetes in the very obese individual, greater than 35 BMI (Diabetes Care 30:1562–1566, 2007)
- Estimated lifetime prevalence of DM in our research population is 26%
- Self-reported rate of diabetes is 6.9%

DM and DOT physicals

- Screening for diabetes – urine dipstick
- Blood glucose or HbA1C – not required
- Health history – limited, esp. with paper form
- Current standards – lacking
- Drivers awareness – poor
- Motor carriers are forced to fill the gap

Sleep apnea

- Obstructive sleep apnea (OSA) is a significant cause of motor vehicle crashes resulting in two - to - sevenfold increased risk
- It is reported that 50-60% of drivers need to be screened for sleep apnea and about 25% of the driver population have sleep apnea (MCSAC and MRB Task 11-05: Recommendations for OSA Regulatory Guidance)
- The rate of drivers who answered “Yes” to a sleep disorder, pauses in breathing while asleep, daytime sleepiness, or loud snoring, was 0.6% in RoadReady database

HTN and CAD

- Self-reported rate of HTN in Road Ready database was 14.57%
- Self-reported rate of heart disease was 1.8%
- Self-reported rate of heart surgery was 1.15%
- We know that the actual burden of CVD is much higher in this population

Methods (musculoskeletal exam)

■ Data collection

- physical therapists assist the DOT medical examiner in conducting a more comprehensive physical examination
- physical therapists are trained by Road Ready to conduct the exam enabling them to pass on their findings and recommendations to the examiner
- the examiner makes a final determination of certification of the driver

Methods

- PT portion of the exam include:
 - a review of the applicant's medical history regarding the musculoskeletal system (specific questions regarding the spine include the following:
 - Have you ever had or do you now have any trouble with your neck or back?
 - Have you ever missed work because of a neck or back injury?
 - Have you ever had surgery on your neck or back?
 - Are you currently on any work restrictions?)

Methods

- The therapist conducts a series of tests including:
 - Posture and alignment
 - Joint flexibility / ROM
 - Muscle strength
 - Joint and ligament integrity
 - Balance and coordination
 - Functional activities for the extremities and trunk
 - Tests to identify conditions or deficits of the nervous system, rotator cuff, cervical and lumbar nerve roots, and the sacroiliac region

Methods

- If significant limitations are noted in any of the above screening procedures, additional tests are conducted
- Additional testing include:
 - sit and reach test
 - testing for leg length discrepancy
 - palpation of the back for tenderness and muscle guarding
 - prone lying spring test of the spine
 - performance of back extension

Methods

- The findings of all tests are passed on to the DOT examiner for the final determination of certification status of the driver
- The driver applicant is also tested for the ability to successfully perform job specific tasks as required by the transportation company

Methods

- The Road Ready DOT physicals' data is gathered and stored via a Web-based Microsoft SQL server application
- The data used in this study was retrieved from this data management system
- Incidence rates of low back injuries and associated workers' compensation costs from 1999 to 2006 were determined

Results

- The incidence rates of low back injury per 1,000 employees gradually declined from 23.7 in 1999 to 11.0 in 2006
- It was 13.2 per 1000 drivers in 2003, 54% decline
- The incidence rates of upper back injury per 1,000 employees decreased from 2.2 in 1999 to 1.5 in 2006, 32% decline
- It rose to 2.5 per 1000 drivers in 2003

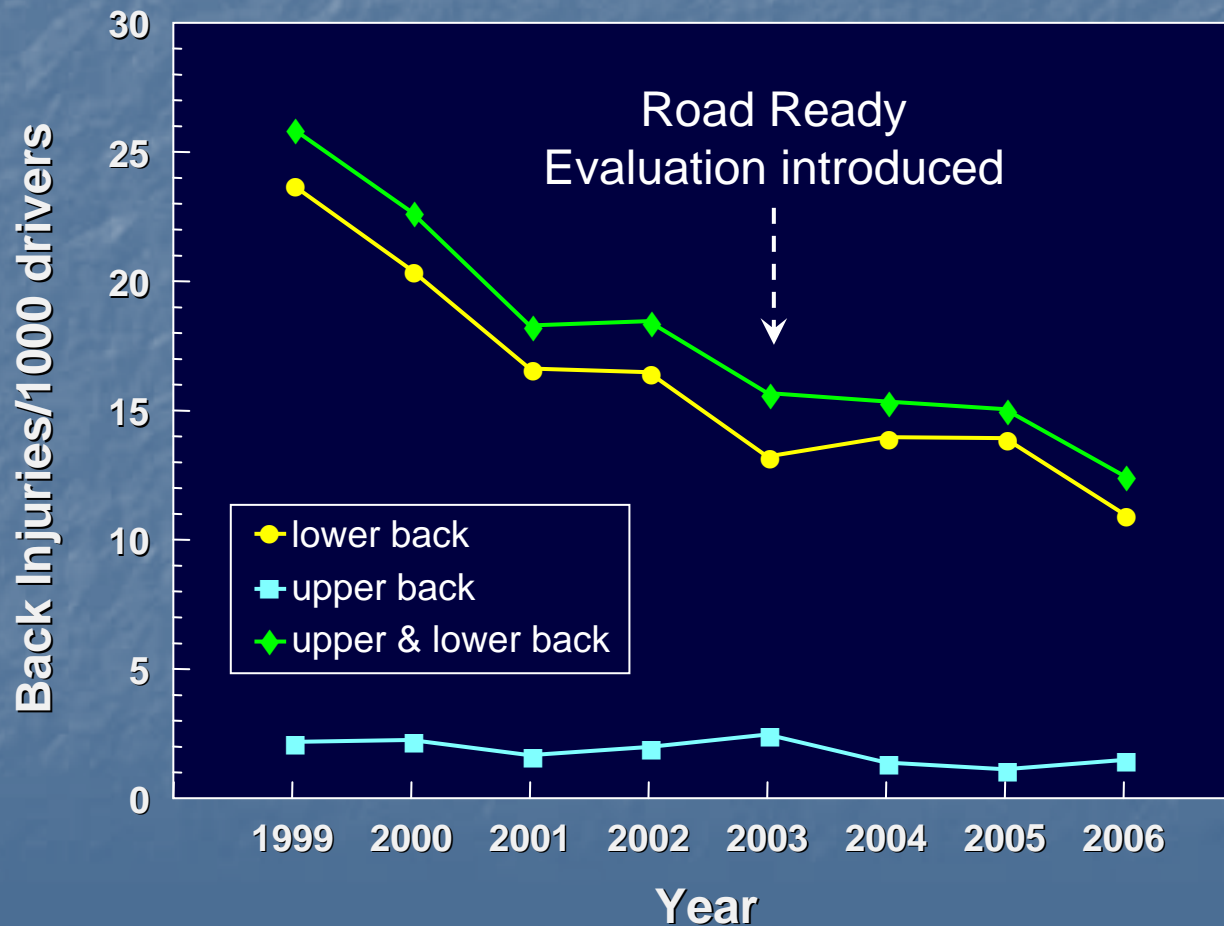
Results

- The workers' compensation costs associated with the upper back injuries increased from \$11,217.26 in 1999 to \$43,896.07 in 2003 and went down to \$8,250.44 in 2006
- The average annual workers' compensation costs associated with the upper back injuries during the period 1999 - 2002 was \$16,428.68
- It was \$19,762.85 during the period 2003 - 2006

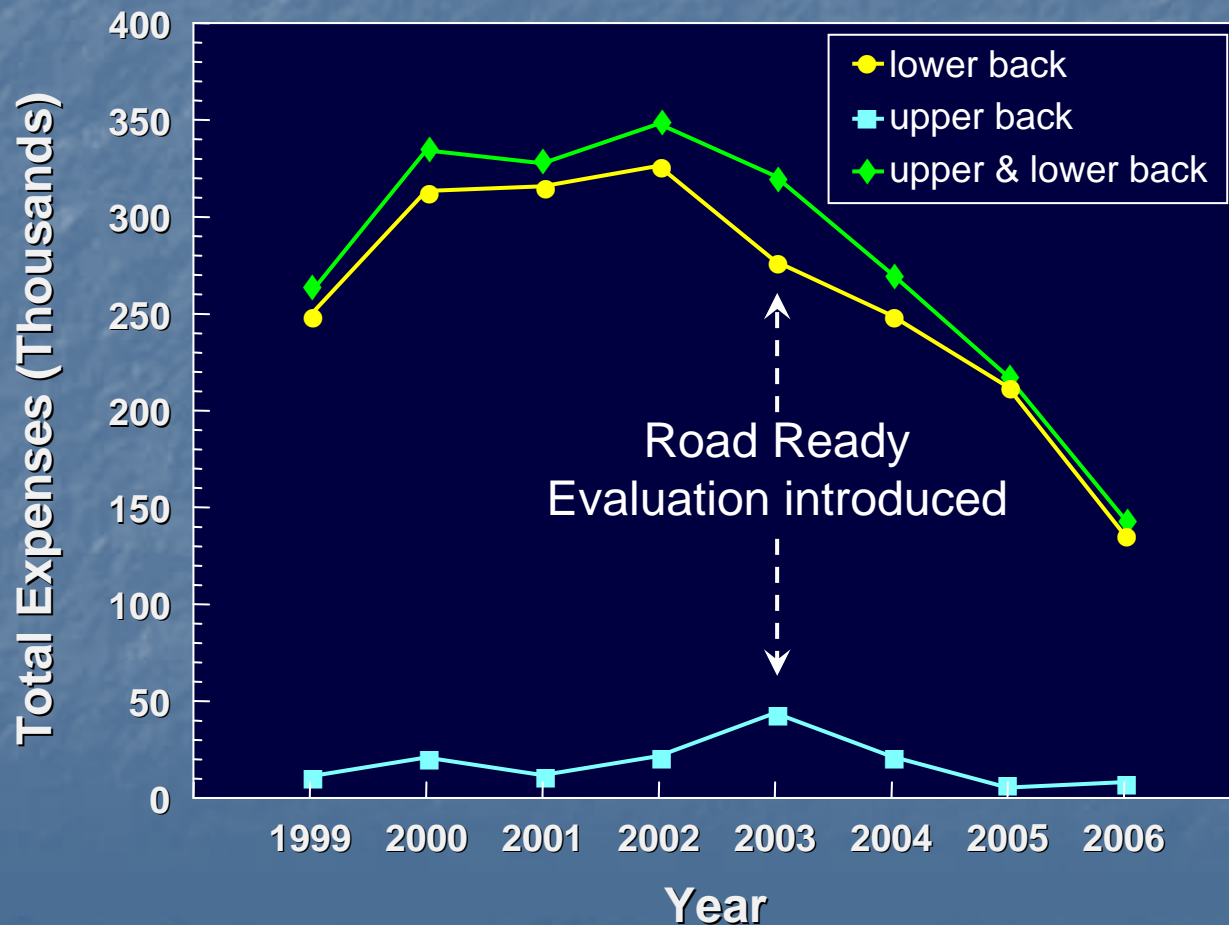
Results

- The workers' compensation costs associated with the low back injuries increased from \$248,924.26 in 1999 to \$277,104.23 in 2003 and fell down in the period from 2003 to 2006 to \$136,159.10 level in 2006, a 45% reduction from year 1999
- The average annual worker's compensation costs associated with the low back injuries during the period 1999 - 2002 was \$301,066.15 and during the period 2003 - 2006 was \$238,450.49
- There was a 54% reduction in low back pain incidence with an associated 45% decrease in workers' compensation costs from year 1999 to 2006

Results (incidence rates 1999 - 2006)



Results *(workers' compensation costs associated with back injuries from 1999 to 2006)*



Results

- Low back injuries were reduced in number after the intervention as were workers' compensation costs
- Additional information:
 - The review of the drivers' health history shows that there were less than 2% of the drivers who reported a past history of a spinal injury and less than 1% of the drivers who reported chronic low back pain
 - Less than 3% of the physicals had an abnormality on the musculoskeletal exam noted by the DOT examiners

Results

- On the other hand, 10% of the drivers who failed their physical exams failed it due to a spine condition found during the musculoskeletal portion of the Road Ready exam performed by the physical therapists
- 35% to 45% of the drivers who failed a Road Ready exam did so due to a musculoskeletal condition found by the Road Ready-trained physical therapists

Discussion

- According to the Bureau of Labor Statistics, the incidence rate of nonfatal occupational injuries affecting low back was 80.5/10,000 workers in 1999 and declined to 36.4/10,000 workers in 2006, a 55% reduction in the incidence rate
- There is no data available for the total workers' compensation costs associated with the back injuries in the transportation industry in 1999 or 2006
- Arkansas Workers' Compensation Commission biennial reports show an increase in medical-only expenditures from \$18,554,726.61 in 2003 to \$22,178,582.11 in 2006
- The BLS reports that one of the variables affecting the cost, median days away from work for truck drivers, increased from 9 days in 1999 to 14 days in 2006

Discussion

- This intervention appears to be effective in reducing low back pain associated workers' compensation costs
- It appears that there is a steady gradual decline in the incidence of back injuries unrelated to the intervention
- The reduction in associated workers' compensation costs since the introduction of the program in 2003 appears to be brought by the intervention
- It can be explained by that the more in-depth musculoskeletal examination by the physical therapists performing the FCE portion of the exam can reduce the severity of the subsequent back injuries and medical expenses associated with the injuries

Discussion

- This was a descriptive study
- Perhaps an analytical research will account for the presence of potential other factors contributing to the observed decrease, among those could be:
 - the Hawthorne effect
 - changing company's administrative policies

Discussion

- It's been speculated that truck drivers have a 10- to 15-year lower life expectancy than the average American male who lives to age 76
- We see in our database that truck drivers are getting older
- Morbid obesity is prevalent in this population
- They underreport and we underestimate prevalence of chronic health problems in truck drivers: CAD, DM, HTN, OSA, etc.

Discussion

- This is a wake up call for truckers, healthcare providers, insurance industry, public health professionals
- Areas of improvement:
 - Workplace modifications (APU, climate control, etc.)
 - Administrative controls (e-logs)
 - Preventive medicine (wellness exams, dietary and lifestyle coaching, healthy incentive programs, etc.)
 - Regulatory aspects of the DOT physicals